## ROCKBAND3 CUSTOMS BOOK

Create and play custom songs

MICHAEL LANE

## ORIGINALITY



This book draws many documents together into a single place. This includes the following documentation:

- C3\Rock Band Network documentation
- CAT User manual and docs
- Venuegen User Manual
- Rock Band Directed Cut Notation
- C3 Forum posts
- C3 Discord author discussions

The content reproduced from these sources has been edited or re-written for clarity. This is so that this book is easy to read and understand. This content makes up the majority of the text in this book.

This means that **the majority** of the content in this book is not orginal. But extra content, graphics, and examples, have been added as needed.

The result is a visually engaging and easy to read text for all Rock Band custom authors.

> Rock Band 3 © 2010 Harmonix Music Systems. The Rock Band 3 Customs Book is not affiliated with Harmonix, MTV Games, Mad Catz, or EA.

## CREDITS

## IMAGES

UNSPLASH

Headphones: C D-X

### SOURCES

C3\Official Rock Band Network Docs: docs.c3universe.com

CAT User Manual and Documentation

MusiSync Font by Robert Allgeyer (Free Public License) www.fontspace.com

David Bennett Piano: "Songs That Use 12/8 Time" and "Songs That Use 7/4 Time" on YouTube

Soundlearn: "How to extract vocals from any song with UVR" on YouTube

How to Play Flam Rudiments: www.masterclass.com

Venuegen User Manual by Kueller: Github

Rock Band Directed Cut Notation by VreyIsGrey



"Modern Setup Guide for Reaper" and "Japanese Lyrics" by Sean.

"Typical Settings for W1 Limiter, and Crowd Noise" by Shroud

REAPER Mania: "Matching Item/ Track Loudness Levels (LUFS) in REAPER" on YouTube

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Sage Audio: "Limiter Masterclass" on YouTube

"[How To] Playing Customs on 360" by BravoGangUS

"Doctored Strange Levels: Or, How I Learned to Stop Worrying and Love the Limiter" by FukiSkunk

Rock Band charts: iPather

Single measure guitar tabs: ultimate-guitar.com

Song structure: Wikipedia

"5-Fret Guitar LD Range Shifts" on the YARG wiki

### LYRICS AND MELODIES

"... with your hands, Steal the rhythm", Chris Cornell (Soundgarden), "Spoonman", 1994.

"Tell me honey, do you feel lonely?" The Donnas, "New Kid in School", 2007.

### LAYOUT

Book layout inspired by "HTML & CSS" by Jon Duckett

### PEXELS

Piano Hands with score: Anastasia Kolchina

Concert Crowd: Wendy Wei

Green background laptop mockup: Cocarinne

Wooden desk laptop mockup: Cocarinne

Laptop with headphones mockup: Ron Lach

Blackboard with music notes: Pavel Daniyuk

Green sofa laptop mockup: Cocarinne

Sideboard laptop mockup: Cup of Couple

Drummer: Matthew Baur

Guitar Player: Harry Shelton

Guitar fretboard: Mateusz Taciak

Woman's hands playing piano: Pavel Danilyuk

Keyboard Player: Ali Pezzani

Female singer: Los Muertos Crew

Singer in red dress: Antoni Shkraba

### OTHER

Drum kit icon: VectorStock. com (Expanded License)

Drumsticks: Flaticon.com (Free for personal and commercial use with attribution).

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"RBN2 Post Processing Effects" by DLCQPdev on YouTube Used with permission.

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## INTRODUCTION

- About this book
- Rock Band basics
- C3, Rhythm Gaming World, and RhythmVerse

## Thank you for picking up this book. I wrote it as a guide for two different types of people:

- Those who want to learn how to author Rock Band 3 songs from scratch
- Anyone else who wants a thoughtfully organized resource for authoring customs

To follow along you will need a Windows PC or laptop and software called REAPER. To play your finished songs you will need an Xbox 360 and Rock Band 3 instruments.

REAPER is free to try for 30 days. After your trial ends REAPER will remind you to buy a license. Discounted licenses are available for personal use from reaper.fm.

The goal of this book is to take you from an .mp3 of your favorite song to a full band, full difficulty, Rock Band 3 custom.

## ABOUT THIS BOOK

This book has been written to help you learn. The text is easy to read and the graphics are colorful and simple to understand.

Each page covers a single topic and individual topics are easy to find. Flip through the book or look in the index to find what you are looking for.



**Introduction** pages are at the beginning of each chapter. They introduce you to the key topics that you will learn.



**Background** pages explain the topics covered in each chapter.



**Basic Install** and **Configuration** pages show stepby-step instructions with screenshots.



**Detailed Configuration** pages explain longer processes one step at a time.



Yellow squares call out important information and actions to take.

i

Blue squares contain other useful information.



**Focus** pages have a dark background. They help you understand key topics.



**Reduction** pages show Expert charts and reductions for Hard, Medium, and Easy. Some charts show reductions for one difficulty.



Authoring pages explain the rules for authoring guitar, bass, drums, keys and vocals.



**Summary** pages are at the end of each chapter. They remind you of the key points in each chapter.

## ROCK BAND BASICS

If you are new to Rock Band, welcome! You will need a good understanding of the game before you start authoring.

### DRUMS

There are basic and Pro drum kits available for Rock Band. The basic drums have four colored pads and a kick pedal:

- The **Snare** is on Red
- Hi-hat and first rack tom are on Yellow
- Ride cymbal and second rack tom are on Blue
- Crash cymbal and floor tom are on the Green
- Kick is on the Orange bar

The **Pro drums** expand this basic layout to include dedicated hi-hat, ride, and crash cymbals. You play Pro cymbals on the Yellow, Blue and Green cymbal gems.

The facing page shows a simple Pro drums layout.

## GUITAR & KEYS

Basic guitar and keys both use only five notes. The notes are Green, Red, Yellow, Blue, and Orange:

- Low notes are on Green
- High notes are on Orange
- Chords are two or three notes played together at the same time
- Sustained notes are notes that you hold down for as long as you hear them. They appear as notes with a tail on the game track.

**Basic guitar** features **HOPOs** (Hammer-On and Pull-Offs). This is a guitar technique where you use one hand to play fast runs of notes. In Rock Band HOPOs are smaller gems for guitar and bass that you do not need to strum.

### SCORING

Rock Band 3 has a few different mechanics for scoring. These mechanics help to boost your game score:

- Overdrive phrases are individual sections of white gems. When played they increase the player's energy meter. When the meter is at least half full you can activate Overdrive for score multipliers
- Unison phrases are sections of white gems that the whole band plays together.
   When played in unison they result in a band bonus
- Big Rock Endings (BRE) are at the end of some songs. The band rocks out in freeform lanes to build up their bonus score. All players have to land the final note(s) to score the bonus



## WHAT DO YOU NEED?

To author and play custom songs you need a Windows PC, a 7th generation console, and Rock Band 3 instruments.

Rock Band 3 is now over 10 years old. So hopefully you already have the hardware needed to play Rock Band songs. If not, search the secondhand market for used consoles, instruments, and adapters.

Below is a list of everything that you will need to author songs and play them on your Xbox:

PC or laptop: Your PC doesn't need to be very powerful to author custom songs. For example, I use a mid-range PC from 2011 running Windows 10.

**Xbox 360:** Look for refurbished and used Xbox 360s on Ebay or Amazon. You will need Operating System version 2.0.17349.0 or higher. The date of this version is 04/30/2015.

**Headphones:** are very useful for authoring songs. They will help you pick out details better than using speakers. I recommend using wired headphones over bluetooth ones.

#### Rock Band 3 instruments:

You can find used plastic instruments on websites such as eBay.

Replacement strum bars and fret switches for Rock Band guitars are available at bytearts.com.

Players interested in Pro drums can buy an electronic drum set (or e-kit). Make sure it has a MIDI out port. You will also need to buy a Rock Band 3 MIDI Pro Adapter.

Rock Band 3: You will need the original game disc – the one with the Electronic Arts (EA) logo on it. The downloadable version and the MadCatz game discs do not work for customs.

**Flash drives:** A 32 Gb flash drive is recommended to load customs songs onto your Xbox 360. For online play on Xbox Live you will need a 1Gb drive.

**Software:** We will cover all the software that you will need in the next few chapters.

**PlayStation 3 and Wii**: There are extra steps that you need to take to play customs on these platforms:

- You need to have a custom firmware (jailbroken)
   PlayStation
- You need to install a softmod on your Wii
- You will have to convert customs to play them on the Wii or PlayStation
- Converting customs to the Wii is not a simple process.

So for this book, we will focus on producing customs for the Xbox 360.



# IS AUTHORING HARD TO LEARN?

You don't need to be a professional musician to make songs for Rock Band. Any musical knowledge that you have will help.

When I first started to chart customs I was intimidated by how much there was to learn.

There were a lot of forum posts to search through and read. There was a lot of software to install and configure. On top of that the official documentation was not very beginner friendly.

The truth is that while customs may look complicated they don't have to be hard to understand. And you don't need to be a professional musician to make customs songs either.

This book breaks everything down into small parts. This lets you find and focus on the things that you need to learn.

If you are new to authoring you don't have to try and learn everything at once. You can gain experience working, or practising, on existing customs if you would like. For example, if you are a drummer you might want to add drums to a song that doesn't have them. You might be surprised at how many guitar only customs there are.

If you play Rock Band casually with friends you might want to start with reductions.

Reductions are the hard, medium, and easy charts for each instrument. There are plenty of custom songs that are expert only or do not have authored reductions.

In either case reach out to the original author for permission to work on their custom song.

If you want to author your own custom from scratch then follow along with this book step by step. You will learn how to:

- Tempo map your song
- Chart each Rock Band instrument
- Compile your custom song package for your Xbox 360

It is very important to learn how to tempo map. Tempo mapping makes sure that your notes are in time with the music.

There are a few tempo mapping methods detailed In this book. Try them out and find the one that you like best.

Finally, some advice to help you get started:

- Choose a short simple song for your first custom
- Understand the basics before you try to tackle more difficult songs
- Focus on tempo mapping first, then chart the Rock Band instruments
- Start with the expert chart and then chart the other difficulties one at a time
- Follow the authoring rules for each Rock Band instrument and difficulty



## C3, RHYTHM GAMING WORLD, AND RHYTHMVERSE

Upgrade your rhythm gaming experience with Rhythm Gaming World and RhythmVerse!

## C3

The **C3 communit**y creates custom content for Rock Band. The community started in 2013 when Harmonix stopped producing new content for Rock Band 3. Customs authors came together to create "one more week" of DLC for the community. That "one week" turned into a couple of years of weekly content (until Rock Band 4 was released).

Today the C3 community is still thriving. Many tools have been developed to help customs authors. Some tools are still in active development.

The annual **Chart-A-Thon** raises money for charity and brings many rhythm gaming communities together. This is a true testament to the passion of the community.

The C3 community welcomes anyone who wants to author or play custom songs for the Rock Band games!

### RGW

**Rhythm Gaming World** (RGW) is a global platform for rhythm gaming communities. Its mission is to:

- Host as many communities as possible
- Create custom content
- Provide information and tools to create custom content
- Disallow piracy and support the purchase of original content for any game
- Build a respectful community
- Encourage freedom of thought and honest constructive dialogue

The C3 community posts updates on RGW!

Join Rhythm Gaming World at: rhythmgamingworld.com

### RHYTHMVERSE

**RhythmVerse** is *the* platform where you can create and find content for rhythm games:

- Clone Hero
- YARG
- Rock Band 3, and many more!

The RhythmVerse platform offers many benefits to authors, players, and communities:

- Free external hosting
- The definitive archive for custom content
- For authors: automatic parsing of metadata, preview links, comments, and more
- For players: Extensive search and filter options. Like and follow your favorite creators!

Join RhythmVerse at: rhythmverse.co

Discord: https://discord.gg/ N6Mpv8p6F4



## SOFTWARE INSTALL

- REAPER
- Rock Band Network tools
- C3 utilities

### In this chapter we install the software and tools that you need to create custom songs.

On the facing page is a list of software needed to make customs. It looks like a lot, but many of these tools can be simply un-zipped and copied to a new directory.

To help you with installation you can use the Cheat Sheets on pages 23 — 24. Or, if you prefer, you can find step-by-step instructions starting on page 25. On page 45 we will look at some extra tools that you might want to install.

**Prerequisites**: Your computer needs to have version 4 of the .NET Framework. It is pre-installed on Windows 8 - 11. On Windows 7 it is installed by Windows Update. You will need Microsoft Visual C++ 2010 to use Nautilus. To convert customs to the PlayStation 3 you will need the Java Runtime Environment (JRE).

Legacy or Modern authoring software: You can choose to use a legacy or modern software setup. The legacy setup uses 32-bit software including Python 2. You can install it on 32 or 64-bit versions of Windows. The modern software setup uses 32 or 64-bit versions with Python 3. Do not mix 32 and 64 bit versions of REAPER and Python together.

At the end of this chapter you will have a powerful suite of tools to help you author. These tools will save you a lot of time and effort, so let's get installing!

> **Note:** This book uses C:\ as the recommended install directory for some software. This is for ease of communication. You can install to other directories of your choice if you prefer.

## **AUTHORING** SOFTWARE

We use same software that Harmonix used to create songs for Rock Band.

### REAPER

REAPER is a digital audio workstation developed by Cockos. We use it to create Rock Band MIDI files.

This chapter includes guides for legacy and modern versions of REAPER. Version 4.22 from April 2012 is the recommended legacy version. Follow the modern REAPER setup guide to use current REAPER features and Python (pages 41 - 44).

### **RBN TOOLS**

Harmonix developed The Rock Band Network (RBN) Tools. They install REAPER actions, a preview window, color maps, and key maps.

Actions customize REAPER. Color maps change the color of MIDI notes for Rock Band. Key maps change templates and fields in REAPER for Rock Band.

### CUSTOM TOOLS

Custom Tools is a collection of files used in REAPER. Files include the C3 Custom RB3 Template, note name files, and audio samples for the song count-in.

### MAGMA C3

Magma combines Rock Band MIDI and audio files into customs for the Xbox 360. These files are known as CON files, or rb3con files.

## NAUTILUS

Nautilus is an open source set of tools for managing customs. These tools help you edit CON files, make packs, and convert customs to other platforms.

known as C3 Tools.

### PYTHON 2.7

Python is a programming language. It is required for the C3 Automation Tools (CAT).

### CAT

The C3 Automation Tools (CAT) are a set of scripts that automate tasks in REAPER. These scripts simplify many repetitive tasks and will save you a lot of time. They are an essential tool to learn.

### W1 I IMITER

The W1 Limiter is an audio plugin used to limit audio track volume. It ensures a more consistent volume level between songs.

Note: Nautilus was previously

## DOWNLOAD DIRECTORY

AUTHORING SOFTWAR	E AND DEPENDENC	IES			CONVERSION AND PREVIEW TOOLS	AUDIO SEPARA- TION SOFTWARE
REAPER (v4.22 32-bit - Legacy) reaper.fm/download- old.php?ver=4x Modern install guide is on pages 41 - 44.	Magma <u>nemosnautilus.com/</u> magma/	W1 Limiter yohng.com/software/ w1limit.html		.NET Framework dotnet.microsoft. com/en-us/download/ dotnet-framework	Onyx github.com/mtolly/ onyx	Miniconda docs.conda.io/ projects/miniconda/ en/latest/w
			_			
RBN Tools rhythmgamingworld. com/c3-authoring- tools/	Nautilus <u>nemosnautilus.com/</u> <u>nautilus/</u>	Audio to MIDI Template rhythmgamingworld. com/c3-authoring- tools/		<pre>Visual C++ 2010 learn.microsoft. com/en-us/ cpp/?view=msvc-170</pre>	Tux Guitar sourceforge.net/ projects/tuxguitar/	Universal Vocal Remover https://ultimate vocalremover.com/
Custom Tools rhythmgamingworld. com/c3-authoring- tools/	Python 2.7 python.org/ downloads/release/ python-2718/	CAT github.com/ abefacciazzi/CAT/ releases/		Java Runtime java.com/en/ download/windows_ manual.jsp	cPlayer https://bit.ly/ nemoCPLAYER	GH Demucs GUI github.com/IMF24/ gh-demucs-gui (No Longer Supported)

## .NET FRAMEWORK

The .NET Framework 4 is required by Magma C3 and Nautilus.

The .NET Framework provides libraries and tools to build and run software on Windows. It is included in installations of Windows 8 — 11. On Windows 7 you should run Windows Update to install .NET.

Follow these steps to check if .NET is installed or to check the version number:

- Open File Explorer and browse to C:\Windows\ Microsoft.NET\Framework
- Open the folder that has the highest version number
- **Right-click** on any of the .dll files and then select Properties from the menu
- Click the **Details** tab. The Product version value will show you your .NET Framework version

Download: Follow the .NET Framework link on page 20.

Install .NET Framework **4** if you need to. Accessibility.dll Properties General Digital Signatures Security Details Previous Versions Property Value Description .NET Framework File description Туре Application extension 4.8.4084.0 File version Product name Microsoft® .NET Framework Microsoft Corporation. All rights reser.. Copyright 36.0 KB Size Date modified 12/7/2019 1:10 AM Language English (United States) Original filename UNKNOWN\_FILE Remove Properties and Personal Information OK Cancel Apply

Download and install the latest 4.x version of the .NET Framework.

Note: .NET 7 is required to decrypt YARG .yargsong files and Clone Hero .sng files.

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## OTHER **DEPENDENCIES**

Nautilus requires Microsoft Visual C++ 2010 and the Java Runtime Environment.

### VISUAL C++ 2010

The Visual C++ 2010 Redistributable contains libraries for the C programming language. Nautilus depends on these libraries for functions.

**Download**: Follow the Visual C++ 2010 link in the Download Directory (page 20).

- Click the Visual Studio 2010 (VC++ 10.0) SP1 (no longer supported) link
- Click the vcredist x86.exe link for the x86 architecture (version 10.0.402191.325)

Install Visual C++ 2010 to its default location.

### JAVA RUNTIME

The Java Runtime Environment (JRE) contains libraries for the JAVA programming language. Nautilus use these libraries to convert customs for the PlayStation 3.

**Download**: Follow the Java Runtime Environment link found on page 20:

- Click the Windows Offline link for the latest Java Runtime version
- Install Java Runtime to its default location

Install Visual C++ **2010** before you install Nautilus.

The Java Runtime is only needed if you want to convert customs to the PlayStation 3.

## INSTALL CHEAT SHEET

Install this software to the recommended directories.

## .ZIP FILES CHEAT SHEET

Un-zip these tools and copy their contents to the recommended directories.

### **REAPER 4.22**

Default install directory: C:\Program Files (x86)\ REAPER

Recommended install directory: C:\REAPER

• Check the **Portable install** checkbox during installation

Note: A portable installation is suggested because you might also want to run a more upto-date version of REAPER. A portable version also makes it easy to back-up your REAPER install and configuration.

Pin reaper.exe to the Start Menu, desktop or taskbar

### **RBN TOOLS**

Default install directory: C:\Program Files (x86)\ REAPER

Recommended install directory: C:\REAPER

Install the RBN Tools to the same directory as REAPER

> Use the recommended directories to follow along with the rest of this book.

PYTHON 2.x

C:\Python27\

require Python 2.x.

Default install directory:

The C3 Automation Tools (CAT)

### NAUTILUS

Un-zip files to: C:\Nautilus

Pin Nautilus.exe to the Start Menu, desktop or taskbar

### MAGMA

Un-zip files to: C:\Magma

Pin Magma.exe to the Start Menu, desktop or taskbar

### CAT

Un-zip files to: C:\CAT

Copy the C3 Custom RB3 Template.RRP file to C:\ REAPER\ProjectTemplates

**CUSTOM TOOLS** 

Un-zip files to:

C:\Custom Tools

### W1 LIMITER

Un-zip files to: C:\Downloads\W1 Limiter

Copy George Yohng's W1 Limiter.dll to the Plugins\ FX directory in your REAPER install

> Do **not** install Magma C3 in the C:\Program Files directory. If you do your customs will randomly crash when played on your Xbox.

## **INSTALL REAPER**

2

Follow the download link for **REAPER 4.22** on page 19:

- Open File Explorer
- Browse to your Downloads folder
- Double-click on reaper422install.exe

The License Agreement will open.

Click the I Agree button



The **Choose Install Location** dialogue will open:

Check the Portable install checkbox \*

\* This will let you install other versions of REAPER

- Change the default install folder to: C:\REAPER
- Click the Next button

**Note**: A portable install makes it easy to back-up REAPER.





You will **not** be able to check the following checkboxes during a portable install:

Desktop icon

3

- Start menu shortcuts
- Associate with RPP (Reaper Project) files

Click the **Install** button to continue.

- REAPER v4.22 Setup
   \_\_\_\_\_\_X

   Installation Complete
   \_\_\_\_\_X

   Setup was completed successfully.
   \_\_\_\_\_X

   Completed
   \_\_\_\_\_X

   Show details
   \_\_\_\_\_X

   Nullsoft: Install System v2.46
   \_\_\_\_\_X

   Close
   Cancel
- Installation will complete:
- Click the **Close** button

A pop-up window will ask you if you want to run REAPER.

Click No

Pin reaper.exe to the Start Menu, desktop or taskbar.

## INSTALL ROCK BAND NETWORK TOOLS

2

Download **RBN Tools** from: rhythmgamingworld.com

- Open File Explorer
- Browse to your Downloads folder
- Double-click on rbn2-install.
   exe

The License Agreement will open:

Click the I Agree button



The **Choose Components** dialogue will open:

 Check all the checkboxes in the Choose Components window

This will install the RBN preview window, templates, presets, and REAPER customizations.



hoose Install Location	
Choose the folder in which to i	nstall RBN Installer for REAPER.
The RBN Installer should be ins correct below.	stalled to the same path as REAPER. Verify that the path is
Destination Folder	
Destination Folder	Browse
Destination Folder C: REAPER	Browse
Destination Folder C:IREAPER Space required: 3.1MB space available: 229.1GB	Browse
Destination Folder C: REAPER ipace required; 3, 1MB pace available; 229, 1GB coff Install Suctem v2, 45	Browse

## The **Choose Install Location** dialogue will open:

3

4

- Choose your REAPER installation path. To follow along with this book use the path C:\Reaper
- Click the Install button

RBN Installer for REAPER Setup	-	
Installation Complete Setup was completed successfully.		
Completed		
Show details		

## The **Installation Complete** dialogue will open:

- Click the Close button
- A pop-up window will ask you if you want to run REAPER:
- Click **No** to complete installation

## **INSTALL PYTHON**

Use the download link for Python on page 19:

- Open File Explorer
- Browse to your Downloads folder
- Double-click on the Python installer

The Install for all users radio button is pre-selected:

Click the Next button



Select Destination Directory

Python27

DLLs Doc

C:\Python27\

Lib ibs Scripts tcl Tools

Please select a directory for the Python 2.7.18 files.

< Back Next > Cancel

×

∨ Up New

The default installation folder is C:\Python27.

2

Python 2.7.18 Setup

python

windows

Click the **Next** button



Customize Python 2.7.18

Python Interpreter and Libraries

- - - P

Select the way you want features to be installed.

Click on the icons in the tree below to change the way features will be installed.

Will be installe

Register Extensions - Entire fi Tcl/Tk - Entire feature will be

Utility Scripts - Entire feature

→ Utility Scripts - Entire reaction pip - Entire feature will be ins

Python 2.7.18 Setup

python

You do not need to customize your Python install:

Click the **Next** button

Installation will complete:

Click the **Finish** button

3

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SOFTWARE INSTALL 29

## INSTALL NAUTILUS

#### Download **Nautilus** from: <u>nemosnautilus.com/</u> <u>nautilus/</u>

#### Open File Explorer:

- Browse to your Downloads folder
- Right click on the nautilus .zip file
- Select Extract All from the context menu

🦊   🛃 📙 🖛	Downloads		– 🗆 X
File Home	Share View		~ (
Navigation Panes	Image: Extra large icons       Image: Icons         Image: Icons       Image: Icons </th <th>Current view • Item check boxes File name extensions Hidden items Show/hide</th> <th>de selected items</th>	Current view • Item check boxes File name extensions Hidden items Show/hide	de selected items
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nautilus.zip	CAT-1.2.1-sillebu CustomTools.zip	jre-8u301-windo MagmaC3v333	i.zi python-2.7.18.ms
~ ~ ~	Open	ws-i586.exe p	i
	Open in new window           Extract All           Pin to Start           Scan with Windows Defender		
rbn2-install.ex	Open with Restore previous versions	v1limiter-win.zip	
	Send to		
	C:+		23

The Extract Compressed (Zipped) Folders window will open:

- Check the Show extracted files when complete checkbox
- In the Select a Destination and Extract Files field type: C:\Nautilus
- Click the **Extract** button





## A new **File Explorer** window will open to show the extracted files.

Pin Nautilus.exe to the Start Menu, desktop or taskbar.

## INSTALL C3 AUTOMATION TOOLS (CAT)

2

Use the download link for **CAT** on page 19:

#### Open File Explorer:

- Browse to your Downloads folder
- Right click on the CAT .zip file
- Select Extract All from the context menu

↓     ↓     ↓     ↓     ↓       File     Home	ownloads Share View				- □ × ^ (2)
Navigation B	Extra large icons Medium icons List Layou	Large icons Small icons Details ut	Current view • Hidden	eck boxes ne extensions items ite Show/hide	elected Options
← → ~ ↑ 【	> This PC > Dow	nloads		۹	Search Downloads
C3CONToolsv401 .zip	CAT-1.2.1-sillabu b.zip	CustomTools.zip Open	jre-8u301-windo	MagmaC3v335.zi P	python-2.7.18.ms
NUMB		Open in new windov Extract All	v  }	_	
	Contar	Pin to Start Scan with Windows	Defender		
rbn2-install.exe	reaper422-insta exe	Open with Restore previous ver	sions		
		Send to		>	
10.1	elected 10 5 MR	Cut			8==

The Extract Compressed (Zipped) Folders window will open:

- Check the Show extracted files when complete checkbox
- In the Select a Destination and Extract Files field type: C:\CAT
- Click the Extract button





A new **File Explorer** window will open to show the extracted files.

3

To configure CAT in REAPER see pages 91 — 94.

## INSTALL CUSTOM TOOLS

## Download **Custom Tools** from: <u>rhythmgamingworld.com</u>

#### Open File Explorer:

- Browse to your Downloads folder
- Right click on the Custom
   Tools .zip file
- Select Extract All from the context menu

File Home	Share View				~ <b>?</b>
Navigation pane • Panes	Extra large icons  Medium icons  List  Layout	Large icons Small icons Details	Current View • Hidden items Show/hide	lide selected items	Options
← → • ↑	🕹 > This PC > Down	loads	ٽ ~	,	Downloads
C3CONToolsv4 .zip	01 CAT-1.2.1-sillabu b.zip	CustomTools.z	Open Open	pytł	ion-2.7.18.ms
	C entre	<b>.</b>	Extract All Pin to Start Scan with Windows Defender Open with		
rbn2-install.ex	e reaper422-install. exe	vcredist_x86.ex	Restore previous versions		
			Cut		_

The Extract Compressed (Zipped) Folders window will open:

- Check the Show extracted files when complete checkbox
- In the Select a Destination and Extract Files field type: C:\Custom Tools
- Click the Extract button





📙 🛛 🛃 🗢 🗍 ProjectTemplates – 🗆 🗙 File Home Share View 0 Extra large icons 🛋 Large icons 🔺 Item check boxes 1 🔛 Medium icons 🔣 Small icons Navigation I Signation 8== Details Panes Lavout ← → ~ ↑ 📙 « Local Disk (C:) → REAPER → ProjectTemplates , Search ProjectTem. ~ Č C3 Custom RB3 Template.RPP autodrum template.RPP RBN Blank Template.RPP RBNTemplate.RF 5 items 1 item selected 95.3 KB

#### A new **File Explorer** window will open to show the extracted files:

3

4

- Select the C3 Custom RB3 Template.RRP file:
- Press Ctrl + C to copy the file

#### In File Explorer:

- Browse to C:\REAPER\ ProjectTemplates
- Press Ctrl + V to paste the C3 Custom RB3 Template.
   RRP file into the folder
- The C3 Template is now in the correct REAPER folder.

## INSTALL MAGMA

#### Download **Magma** from: <u>nemosnautilus.com/magma</u>

#### Open File Explorer:

- Browse to your Downloads folder
- Right click on the Magma .zip file
- Select Extract All from the context menu

🗣 i 🗹 🚺 🗧 i i	Jownloads					_		
File Home	Share View							^ <b>(</b> )
lavigation pane • Panes	Extra large icons	Small icons	Current view •	File name	ck boxes e extensions tems Show/hide	Hide sele items	cted Op	tions
$\leftarrow \rightarrow \cdot \uparrow$	➡ > This PC > Do	vnloads			5 2	0.5	arch Dow	nloads
C3CONToolsv401 .zip	CAT-1.2.1-sillat b.zip	Open Open in new window	v		MagmaC3 P	lv335.zi	python-2	.7.18.ms
0		Extract All	1	2				
	() () () () () () () () () () () () () (	Extract All Pin to Start Scan with Windows I Open with	Defender	ç				
rbn2-install.exe	reaper422-insta exe	Extract All Pin to Start Scan with Windows I Open with Restore previous ver	Defender sions	<i>à</i>				
rbn2-install.exe	reaper422-instr exe	Extract All Pin to Start Scan with Windows I Open with Restore previous ven Send to	Defender	>				
rbn2-install.exe	reaper422-insta exe	Extract All Pin to Start Scan with Windows I Open with Restore previous ven Send to Cut	Defender	>				

The Extract Compressed (Zipped) Folders window will open:

- Check the Show extracted files when complete checkbox
- In the Select a Destination and Extract Files field type: C:\Magma
- Click the **Extract** button





#### A new **File Explorer** window will open to show the extracted files:

Pin Magma.exe to the Start Menu, desktop or taskbar.

> Do **not** install Magma in the C:\Program Files directory. If you do your customs will randomly crash when played on your Xbox.

## **INSTALL W1 LIMITER**

1

Follow the download link for **W1** Limiter on page 19:

#### Open File Explorer:

- Browse to your Downloads folder
- Double-click: w1limiter-win.zip

File Home	Share View				^ (
Navigation Panes	Extra large icons  Kate and the second secon	Large icons Small icons Details T	Current view • Hidden	ck boxes e extensions items Show/hide	Hected Options
← → • ↑	+ > This PC > Dowr	nloads		√ 5 √	Search Downloads
C3CONToolsv4 .zip	01 CAT-1.2.1-sillabu b.zip	CustomTools.zip	jre-8u301-windo ws-i586.exe	MagmaC3v335.zi p	python-2.7.18.ms
rbn2-install.ex	e reaper422-install.	vcredist_x86.exe	w1limiter-win.zip		
	EXE				

The .zip file will open:

Select the George Yohng's W1 Limiter.dll file

Do **not** select the x64 version of the W1 Limiter file.

■ Press **Ctrl** + **C** to copy the file to the clipboard





Item check boxes

Q.

reacomo dil

24

File name extension

Hidden items

Show/hi

5 v

eacomn dll m

reafir.dll

1

📕 | 🛃 📮 | FX

Navigation I BE List

rbpre

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readelay.dl

A

30 items 1 item selected 2.71 MB

Panes

File Home Share View

🔲 💷 Extra large icons 🖻 Large icons

readelay.dll.rg

25

Medium icons Small icons

BEE Details

-

thorey yet dll

reaeg.dll

11

Layout

 $\leftarrow \rightarrow \checkmark \uparrow$  Local Disk (C:) > REAPER > Plugins > FX >

Open a new File Explorer window:

3

4

– 🗆 🗙

3

Hide selected Options items

reacontrolmidi d

₩.....

reagate.dll

24

Search FX

2

Browse to: C:\REAPER\Plugins\FX

In the C:\REAPER\Plugins\FX folder:

■ Press **Ctrl** + **V** to paste the file from the clipboard into the folder



## MODERN SETUP GUIDE FOR REAPER AND PYTHON 3

Follow this guide to install a modern version of REAPER and Python 3.

### INTRODUCTION

Reaper v4.22 was released in April 2012. It has been recommended for authoring for a very long time. Many authors have moved on to more modern versions of REAPER. This has several advantages:

- New REAPER features
- REAPER Extensions
- Python 3

Many thanks to Sean for sharing this guide and developing a fork of CAT for Python 3.

> Do not mix 32 and 64bit versions of REAPER and Python. Only use 32 bit or 64-bit versions of REAPER and Python.

### REAPER

Download the latest version of REAPER:

#### https://www.reaper.fm/ download.php



Install either the 32-bit or 64bit version of REAPER. Make a note of which one you install.

Note: During installation you can choose a Portable install. This will keep all of REAPER's files together in a single folder. This makes it easy to backup REAPER or move it to a different location if you want to do that.

You can say no to opening REAPER or the RBN tools until we are ready.

## RBN TOOLS

The Rock Band Network Tools are optional, but recommended.



Download the RBN Tools, then extract and install them to the same folder that you installed REAPER. For example: C:\ Reaper.

For 64-bit Reaper also install the 64-bit plugin.

Extract the rbprev\_vst64\_ beta.dll file and copy it to the Plugins\FX folder in your Reaper install. For example C:\ Reaper\Plugins\FX.

### PYTHON 3

the Python 3 installer: https://www.python.org/

Download the latest version of

- https://www.python.org/ downloads/windows/
- Click the Latest Python 3 Release - Python 3.xx link on the download page.
- Scroll down and select either the Windows installer (64-bit) or Windows installer (32-bit) option, matching the architecture (32 or 64-bit) of REAPER that you installed.

For the sake of this guide, we assume that we are only using this version of Python with REAPER, and we do not want it to interfere with anything else.

Because of this, we need to make some changes to the install:

Open the installer, and click
 Customize installation.

### REAPER SETUP

Launch REAPER:

Under Optional Features,

(Advanced, Optional) We only

really need **tk** here. You can

proceed with only tcl/tk and

**IDLE** checked. It is very easy

get anything else you might

to re-run the installer to

Under Advanced Options,

• Customize the **install** 

un-check every checkbox.

**location**. Put it somewhere

you have access to and will

I like to keep my Python

install inside of REAPER's

For example, I put my

Python in D:\REAPER\

Python3. Do not install it in

the default Python folder

with the system Python).

(we don't want to interfere

click Next.

need later.

not forget.

install folder.

- On first launch, select an audio device. This will put us into the configuration window for future changes.
- If you installed an older version of REAPER and plan to stay there, un-check the Check for new versions box. Close the window that appears asking you to update.
- Click Options > Preferences.
   Then go to Plug-ins >
   ReaScript:

**REAPER 4**: Check **Enable** at the top of the window.

Modern REAPER: Under Python, check Enable Python for use with ReaScript.

Continued on the next page.

## MODERN SETUP GUIDE FOR REAPER AND PYTHON 3 (CONTINUED)

Make sure that REAPER detects your Python location correctly.

### REAPER SETUP

- Under ReaScript, make sure both Clear ReaScript console options are enabled for the best experience with CARV and Joule.
- Under Custom path to (Python) dll, put your install location for Python.
- Under Force Python to use .dll: / Force ReaScript to use specific Python .dll:, you need to use the specific DLL for the version you installed.

For example, if you installed Python 3.13, the DLL will be python313.dll.

For other versions, you can check the DLL name by entering the folder. You do not want to use python3.dll, it will not work.

#### After setting these options, you should see a message like python313.dll is installed. This is how you know that you have set the

 You will get a message that REAPER may need to be restarted for Python to work. You may as well do this, just to be safe.

location correctly.

## SCRIPTS

Download Scripts:

#### C3 Automation Tools (CAT):

#### https://github.com/ SuperRiderTH/CAT/archive/refs/ heads/python3-main.zip

My fork of CAT includes CARV and is designed to work with Python 3. It should work with every version of REAPER (v4.22 and higher).

#### Joule (Optional):

#### https://github.com/ SuperRiderTH/joule/archive/ refs/heads/main.zip

Joule a new validation tool that I have developed to get around some of the limitations that CARV had. It does not have a fancy web interface yet, but it can be run with or without REAPER and gives you an easy to read output file.

### EXTRACT SCRIPTS

Inside the downloaded zip files you will find a folder like **CATpython3-main** or **joule-main**. Put these folders inside the REAPER Scripts folder.

To find this location:

Joule includes all the checks

that CARV has, and extra checks

such as if notes will appear off

If you run Joule in REAPER, the

output.json file will be in the

output folder next to joule.py.

Unlike CARV, this will not open

automatically because there is

Joule also behaves slightly

ignore any muted tracks in

different than CARV, and will

REAPER, matching the behavior

By default, Joule supports the

Drums. If a "PART DRUMS 2X"

track is not found or muted. it

a new 2X track internally. This

behavior can be disabled by

additional configuration and

in joule\_config.ini.

usage options.

See the GitHub page for

will automatically run checks on

setting IgnoreModNotes to True

Expert+ kick notes (95) found on

the lane in Pro Keys.

not a web page.

of a MIDI export.

- Select **Options** in the REAPER window.
- Click the Show REAPER resource path in explorer/ finder option in the menu.
- In Windows File explorer open the Scripts folder.
- Copy the required folders into the Scripts folder.

### SETUP SCRIPTS

- In REAPER, select Actions >
   Show action list
- REAPER 4: Select New/load next to ReaScript:

- Modern REAPER: Under New action, select Load ReaScript:
- CAT: Navigate to the CATpython3-main folder in Scripts, and select CAT.py.
- (Optional) CARV: Navigate to the CARV folder in CATpython3-main, and select RBNCheck.py.
- Joule (Optional): Navigate to the joule-main folder in Scripts, and select joule.py.

Once these are added, you can now either run them from the **Actions** window, or configure REAPER hotkeys if you want to.

You can set a shortcut in the bottom-left of the **Actions** window, or customize REAPER and add new buttons to the interface.

You are now free to do whatever you want inside REAPER!

## ADDITIONAL TOOLS

These tools are optional extras. Onyx and cPlayer can preview unencrypted customs. Tux Guitar can create MIDI files from pro guitar tabs.

### ONYX

Onyx is a build tool for Rock Band/Guitar Hero type games. It can import from a wide variety of sources including:

- Rock Band 1, 2, and 3
- Frets on Fire, Phase Shift, and Clone Hero
- Guitar Hero, Guitar Hero
   II, and Guitar Hero Encore:
   Rock the 80s

It includes extra features such as CAT-like automatic reductions and lip-sync file generation.

Onyx can preview all Rock Band instruments and difficulties. It can even preview all the difficulties for a single instrument at the same time (see facing page).

**Note**: Onyx does not support previews for vocals or pro keys. Onyx might not work on older versions of Windows.

### CPLAYER

cPlayer can play and preview custom songs. It has different viewing modes, such as audio spectrum, karaoke, and MIDI chart. MIDI chart mode previews expert charts and includes pro keys, vocals, and harmonies.

A great feature of cPlayer is that it can display individual note names. Use this feature for pro keys, vocals and harmonies.

cPlayer does not preview the lower instrument difficulties (Hard, Medium, or Easy).

**Note**: cPlayer takes a little time to process customs before playing them.

There are no special instructions for installing these apps. Download links are on pages 19 — 20.

### TUX GUITAR

Tux Guitar is an open-source tablature (tabs) editor. It supports the following pro tablature files:

■ gp3, gp4, and gp5

Below you can see that pro tab files are a form of musical notation. Like regular tablature they show strings and finger positions. You can listen to pro tabs online or in Tux Guitar to hear how accurate they are.







- Install pre-requisites before installing other software.
- Install REAPER version 4.22.
- Install the RBN Tools to the same directory as REAPER.
- Do not install Magma C3 to the C:\Program Files directory.
- Color maps and key maps are a part of the RBN Tools.
- The C3 Custom RB3 Template, note name files, and countin audio files are part of the C3 Custom Tools.
- Magma C3 converts Rock Band MIDI and audio files into custom song files.
- Use Nautilus to open, edit, convert, and manage custom song files.
- CAT automates authoring tasks in REAPER.



- C3 Custom RB3 Template
- REAPER preferences
- REAPER Actions

2

### At this point we have our core software installed. Our next step is to configure REAPER for Rock Band.

In this chapter we will cover a wide range of topics. Some of them are convenient settings that will save you time. Others are essential parts of authoring songs for Rock Band.

In the first half of the chapter we will work through REAPER Settings and Preferences. Pay particular attention to the C3 Template, Project TimeBase and Scrub Settings.

In the second half of the chapter we look at **actions** in REAPER. Actions are shortcuts for simple or complex tasks. We review how to create actions and assign keyboard shortcuts. We will then create some key actions that you will use later. This includes custom actions for:

- Tempo mapping
- Unison phrases
- Importing Lyrics

In the final few pages of the chapter we configure REAPER to run the **C3 Automation Tools** (CAT).

By the end of this chapter REAPER will be fine-tuned for authoring Rock Band songs!



## SELECT AUDIO DEVICE

2

When you first open REAPER it prompts you to select an audio device.

When you first open REAPER you will see the **You have not yet selected an audio device** prompt:

- Would you like to select your audio device driver now (recommended)?
- Click the Yes button

The Audio device settings section of the Preferences window will open.

REAPER Preferenc	es		Ŧ	
Device	^	Audio device settings		
MIDI Devices		Audio system: WaveOut		
Buffering				
Playback		La Da Caral Married Married		
Recording		Input Device: Microsoft Sourid Mapper		
Annearance		Output Device: Microsoft Sound Mapper ~		
Media		Sample Format:  16 bit  24 bit  32 bit		
Peaks/Waveforms				
VU Meters/Faders				
Theme Editor		Output channels: 2		
Editing Behavior		Samplerate: 44100 Hz		
Envelopes		Bifform: 8 1024 anomalas		
Mouse Mouse Modifiers		bullers. o x 1024 samples		
MIDI Editor		(atency: 185 ms)		
Media				
MIDI				
Video/REX/Misc				
Plug-ins				
Compatibility				
VST DeWine (DV				
Nevvire/DA		Allow projects to override device sample rate		

Click the **Audio system** drop down menu:

Select your audio system

The REAPER manual recommends selecting **ASIO** if your sound card supports it.

I use the default **WaveOut** option on my PC and laptop without any issues.

Your options will depend on your hardware.





REAPER Preferences

Project Track/Send Defaults

Media Item Defaults

Audio Device MIDI Devices

Buffering Playback

Recording Rendering

Appearance Media

Peaks/Waveform:

VU Meters/Faders Theme Editor

Editing Behavior Envelopes

Media MIDI Video/REX/Misc

Mouse Mouse Modifiers MIDI Editor

Plug-ins

Audio device setting

Audio system: WaveOut

Sample Format

Find Select your desired output device here.

Input Device: Microsoft Sound Mapper

Output Device: Microsoft Sound Mapper

Output channels: 2 |

Buffers: 8 x 1024 samples

(atency: 185 ms)

Samplerate: 44100 Ha

Allow projects to override device sample rate

vicrosoft Sound Mapper Speakers (Schiit Modi 3) 5 - HP ENVY 32 (AMD High Defini

OK Cancel Apply

Click the Input Device menu:

 Select your microphone if found in the menu

3

4

Note: The Microsoft Sound Mapper option uses your system default input audio device.

Your options will depend on your hardware.

Click the **Output Device** menu:

 If you have headphones select them as your output device

Note: The Microsoft Sound Mapper option uses your system default output audio devices.

 Click OK to finalize your settings

53 REAPER CONFIGURATION

## NEW VERSION NOTIFICATION

When you open REAPER it prompts you to download a newer version.

## LOAD C3 TEMPLATE

Load the C3 Custom RB3 Template in REAPER.

REAPER 4.22 is the version that Harmonix used to produce songs for Rock Band 3. Updating to a newer version is **not** recommended. \*

When prompted follow these steps to stop REAPER checking for updates:

- Uncheck the Check for new versions checkbox
- Click the **Close** button.

V	REAPER New Version Notification	~
R	EAPER 6.40 is available, with the following updates:	^
11		
	JTE: if you purchased your REAPER license before August 2015, it may no longer	
Ve	rsions of REAPER which can be downloaded from the "Old Versions" nage	
or	the REAPER web site.	
	··· ·· ·· · · · · · · · · · · · · · ·	
11	<ul> <li>Metronome: avoid possible crash when adjusting metronome settings with empty take lanes in the project</li> </ul>	
6.	39	
1.	Automation: fix editing automation items for FX parameters with inverted range [p=2489968]	
	Command line: support both template and filename arguments [t=258395]	
	<ul> <li>ISEX: greater precision for Se and Sobi</li> </ul>	
	Linux: fix fullscreen behavior (6.37 regression) [t=258543]	
•	Linux: improve main window fullscreen behavior for owned windows	
	<ul> <li>Linux: make initial focus of various windows (e.g. performance meter) match that of macOS/Windows</li> </ul>	
	- Media explorer: dod action to rename file - Media explorer: display metadata for: RPP (REAPER project) files	
	Media explorer: fix restarting playback from non-zero position when changing playback rate [p=2489305]	
•	Media explorer: respect project option to preserve pitch when changing rate in new items when importing media	~

REAPER v4.22 (Licensed for personal/small business use) File Edit View Insert Item Track Options Actions Help Ctrl+N New project Ctrl+0 Open project... Ctrl+S Save project 2.1.00 Save project as... Ctrl+Alt+S Project templates Save project as template ... Recent projects autodrum template Ctrl+Alt+N C3 Custom RB3 Template New project tab Close project Ctrl+F4 **RBN Blank Template** RBN2 Template Close all projects RBNTemplate Save all projects Project settings... Alt+Enter Ctrl+Alt+R Render... Show render queue Save live output to disk (bounce)... Ctrl+Alt+B Consolidate/Export tracks... Export project MIDI... Clean current project directory..

The C3 Custom RB3 Template includes the tracks and templates you need to author

custom songs. Follow the steps below to load

 Click File > Project templates

the template in REAPER:

Select the C3 Custom RB3
 Template

\* C3 Authors have reported issues when sharing projects between different REAPER versions. This includes MIDI notes not being visible in the MIDI track.

Check for new versions

#### The C3 community will try to help you with any REAPER 4.22 issues that you experience. Community experience with other REAPER versions is more limited.

Proceed to download page Close

The C3 template is a part of the **Custom Tools** download. If you do not see the template in REAPER refer to pages 35 — 36 for installation instructions.

## REPLACE MISSING FILE

When you open the C3 Template it prompts you to look for a missing file.

When you load the <b>C3 Custom</b>			In REAPER:
<b>RB3 Template</b> the <b>Replace</b> 1 <b>missing file</b> dialogue opens.       1	Replace missing file	REAPER v4.22 (Licensed for personal/small business use)	3 Click the File menu
It tells you that it cannot find	The file:	New project. Ctrl+N Open project Ctrl+N	Click Save project as
the file hihat.wav.	D:\c3\customs\hihat.wav Could not be found.	Save project sa Ctrl+Alt-S Project templates >	<b>Note:</b> The C3 Template is
file for the COUNTIN track in the	Media search When multiple matches are found, use: Any matching file (fastest)	Recent projects     >       New project tab     Ctrl+Alt+N       Close project     Ctrl+F4	step we will overwrite th
Lot's fix it so that we don't see	On successful search, autosearch for other missing files On failed search, leave file offline and autosearch for other missing files	Close all projects Save all projects Project settings Alt+Enter	that we made in the prev
that window again:	Search	Render Ctrl+Alt+R Show render queue Save live output to disk (bounce) Ctrl+Alt+B	You can use this process
<ul> <li>Click the Browse for file button</li> </ul>	Browse for file	Consolidate/Export tracks Export project MIDI Clean current project directory	make other permanent c to the C3 Template.
	Abort project load Leave file offline Ignore all missing files	Batch file/item converter Ctrl-Shift+F Quit Ctrl+Q	
dialogue box will open: 2			4 will open:
Browse to C:\Custom Tools		Save Project       X $\leftarrow \rightarrow \lor \uparrow$ $\triangleleft$ $\triangleleft$ $\heartsuit$ $\wp$ Search ProjectTemplates	Browse to C:\REAPER DrojectTempletes
Select the hihat.wav file	Organize + New folder  G G Cuttoms # ^	Organiz er Newfolder Er V	Select the C3 Custon
Click the <b>Open</b> button	Cloud Drive Co	Intel Magna C3 Under B83 BBN Black BBN2	Template.RPP file
The <b>Choose replacement file</b> dialogue box will close.	This PC SUCC. Were SUCCE. SUCC. WERE SUCC. WERE SUCC. WERE SUCC. WERE SUCC. W	Program Files template.RPP Template.RPP Template.RPP Template.RPP Template.RPP Template.RPP	<ul> <li>Click the Save button</li> </ul>
	Counters     Downloads	REAPER	The <b>Confirm Save As</b> dial box will open:
	In Music Image: Interpretation of the second se	Save as type: REAPER Project Files (*.RPP)	<ul> <li>Click the Yes button</li> </ul>
	File name hihat.way v All Supported Media Files v	Opy at media into project arectory, sange convert media tetra see into intointo into intto into into into into into	
	Upen Cances		

57

## SET A DEFAULT TEMPLATE

Set the C3 Template as the default for new projects.

I only use REAPER for creating customs. So when I open a new project I like REAPER to open the C3 Template.

If you would also like to do this follow these steps.

Open the **Preferences** dialogue in REAPER:

Click Options > Preferences

Shortcut: Press Ctrl + P

Choose **Project** from the list:

In the left-hand pane select
 Project



卫

Browse...

 $\times$ 





#### 59 REAPER CONFIGURATION

## AUTOMATE PROJECT BACKUP

Set regular backups to save you from losing work.



## PROJECT SETTINGS

Review Project BPM and Time Signature settings.

## SET PROJECT TIMEBASE

Set your Project Timebase to: Time

The <b>Project Settings</b> window contains the <b>Project BPM</b> and <b>Time Signature</b> settings. You do not need to change these settings. I have included them so that you can see where to find them in REAPER. In REAPER open <b>Project</b> <b>Settings:</b> Click <b>File &gt; Project Settings</b> Shortcut: Press Alt + Enter.	Image: Set of the set o	Project Settings       ×         Project Settings       Media Advanced Notes         Project sample rate:       44100 ~ Hz         Project semple rate:       if 4100 ~ Hz         Project BPMt       120.000         Project BPMt       120.000         Project frames rule / 4       ~         Timebase for thems/invelopes/markers:       Ime         Project start time:       000.000         Subtract cursor position       Project start time:         Project start time:       1         Playback resample mode:       Soudt Funct         Parkack resample mode:       Soudt Subtract cursor position         Project start measure:       1         Playback resample mode:       Soudt Subtract cursor position         Project start measure:       1         Playback resample mode:       Soudt Funct         Pitch shift mode:       SoundTouch         Pitch shift parameter:       Default settings	<ul> <li>The Timebase setting is very important. It controls how REAPER will behave when you tempo map a song.</li> <li>For now make sure that your Timebase is set to Time.</li> <li>In REAPER open Project Settings:</li> <li>Click File &gt; Project Settings Shortcut: Press Alt + Enter.</li> </ul>
	Batch file/item converter Ctrl=Shift+F Quit Ctrl+Q	OK Cancel Save as default project settings	
The default <b>Project BPM</b> is <b>120</b> . BPM stands for Beats Per Minute. It refers to the tempo of a song.	2		<ul> <li>In the Project Settings dialogue:</li> <li>Find the Timebase for items/ envelopes/markers setting</li> </ul>
The default <b>Time Signature</b> is <b>4/4</b> . This is the most common time signature in music. Unless you change these settings all new projects will have a starting BPM of <b>120</b> and a <b>4/4</b> time signature.	Project Settings     X      Project Settings     Media Advanced Notes      Project sample rate: 44100      Hz      Force project time signatures to have beats on whole samples      Project BPM: 120 000     Time signature     4 / 4	Project Settings       X         Project Settings       Media         Advanced       Notes         Project sample rate:       44100 ~ Hz         Groce project time signatures to have beats on whole samples       Project BPM:         Project BPM:       120.000       Time signature         Timebase for items/envelopes/markers:       Time         Project framerate (used for time+frames ruler, default for sync, etc):       23.976 ~	<ul> <li>Use the drop down menu and select <b>Time</b></li> <li>Click the <b>OK</b> button.</li> </ul>
### SCRUB SETTINGS

Make audio srcubbing a default behavior in REAPER.



# RENDER PRESET #1

Create a preset to render song audio.

<ul> <li>Render presets allow you to export audio from REAPER with specific settings.</li> <li>Use this preset to export song audio for Magma and music separation.</li> <li>In REAPER open the Render to file window:</li> <li>Click File &gt; Render</li> <li>Shortcut: Press the Ctrl + Alt + R keys.</li> </ul>	Rende: to File       X         Rende: Master mix       Presets         Pender bondis       End         Differs project       Starts         Differs       Differs         Option:       Starts         Cuptor       Differs         Output       Differs         Option:       Starts         Differs       Differs         WAV bit depth:       If annels: Sares         WAV bit depth:       If bit moder project starts         WAV bit depth:       If bit moder project starts         WAV bit depth:       If bit moder project starts         Wave depth:       If bit moder project starts         Wave depth:       If bit moder project starts         Dist include matches or regions       Embed project starts         Option:       Embed project starts         Stave copy of project to outfle wav RPP       Copiest embed:       Cancel	Presets         Last render settings         Bounds and output         Options and format         All settings         Save preset         W         Delete preset         O files	3 Save your settings: Click the Presets button Select All Settings Click Save Preset The Render Preset dialogue will open: In the New Name field type: Render Song Audio Click the OK button The Render Preset dialogue will close.
<ul> <li>In the Options and Output format areas copy these settings:</li> <li>Sample rate: 44100 Hz</li> <li>Channels: Stereo</li> <li>Resample mode: Better (192pt Sinc - Slow)</li> <li>Output format: WAV</li> <li>WAV bit depth: 16 bit PCM</li> <li>Allow large files to use Wave64</li> </ul>	Options         Sample rate:       44100	Presets         Last render settings         Bounds and output         Options and format         All settings         W         Save preset         Delete preset	<ul> <li>The preset is now complete. To recall this setting in the future, follow these steps:</li> <li>Click File &gt; Render</li> <li>Shortcut: Press the Ctrl + Alt + R keys.</li> <li>Click the Presets button</li> <li>Select All Settings</li> <li>Click Render Song Audio</li> </ul>

# RENDER PRESET #2

Create a preset to render dry-vox audio for Magma.

Use this preset to export dry-			Save your settings:
vox audio for Magma. Magma	1		3
will use this audio to create	Render to File X		Click the Presets button
lip-sync animations for in-game	Pender: Master mix V Presets		
characters.	Entre project v Start End Length		Select All Settings
	Output	Presets	
In REAPER open the <b>Render to</b>	File name: Wildcards		Click Save Preset
file window:	Render to: 0 files	Last render settings	
	Options Sample rate: [44100 V Hz Channels: [Stereo V Full-speed Offline V	Bounds and output	The <b>Render Preset</b> dialogue will
<ul> <li>Click the File menu</li> </ul>	Use project sample rate for mixing and FX/synth processing	Options and format >	open:
	Hesample mode (it needed): Better (15/pt Sinc - SLOW)	All settings > Render Song Audio	
Select Render	Output format: WAV	W Save preset	In the <b>New Name</b> field type:
	WAV bit depth: 16 bit PCM V Identifies to use Wave64		Render Dryvox for Magma
Shortcut: Press the Ctrl + Alt +	Write BWF (bext) churk  Include project filename in BWF data Do not include and ensure or periods U Fibbed project tempo (use spatingly)		
R keys.			Click the <b>OK</b> button
	Add terms to new tracks in project when finished Save copy of project to outfile way RPP		The Dender Preset dislocus will
	Open render queue Add to render queue Render Cancel		The <b>Render Preset</b> dialogue will
			close.
In the <b>Options</b> and <b>Output</b>			The preset is now complete. To
format areas copy these	2		4 recall this setting in the future,
settings:			follow these steps:
Sample rate: 16000 Hz	Options	×	Click File > Render
	Sample rate: 16000 V Hz Channels: Mono V Full-speed Offline V		
Channels: Mono	Use project sample rate for mixing and FX/synth processing	Presets	Shortcut: Press the Ctrl + Alt +
	Resample mode (if needed): Better (192pt Sinc - SLOW)	Last render settings	R keys.
<ul> <li>Resample mode: Better</li> </ul>	Multichannel tracke to multichannel files Master mix: Dither Divise shaning	Bounds and output >	
(192pt Sinc - Slow)		Options and format >	<ul> <li>Click the Presets button</li> </ul>
	Output format: WAV 🗸	All settings > 🗸 Render Dryvox for Magma	
<ul> <li>Output format: WAV</li> </ul>		wy Render Song Audio	<ul> <li>Select All Settings</li> </ul>
	WAV bit depth: 16 bit PCM V Allow large files to use Wave64		
WAV bit depth: 16 bit PCM	Write BWF (bext) chunk Include project filename in BWF data	Save preset	<ul> <li>Click Render Dryvox for</li> </ul>
	Do not include markers or regions	Delete preset >	Magma.
🗹 Allow large files to use			
Wave64			

## ACTIONS OVERVIEW: THE ACTIONS LIST

Actions are used to automate tasks in REAPER. You can create an action for any task.

#### This section introduces you to actions in REAPER. Over the next few pages we will review how actions work. We will then make our own custom actions for REAPER.

First, open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

**Note**: You can view six different lists of actions in this window. Use the **Section** drop down menu to see the list of actions.



2 List of actions and keyboard shortcuts.



3 The Section drop down menu. Select from the list of Action groups:



The shortcut Add button. Assign keyboard shortcuts to actions.

The **New** button. Create new custom actions.

G



Build a list of actions to perform repeat or complex tasks.



Remove selected button.

Click the **New** button in the **Actions** window to open the **Create Custom Action** window.

Use this window to chain a list of actions together.



Click the **OK** button when your actions list is complete.

### ACTIONS OVERVIEW: KEYBOARD SHORTCUTS

### ACTIONS OVERVIEW: EDIT ACTIONS

Assign a keyboard shortcut to a selected action.

#### View or edit custom actions.

Click the **Add** button in the **Actions** windows to open the **Keyboard/MISC/OSC Input** dialogue box.

Use this dialogue to assign keyboard shortcuts to actions:

- You can use single or multiple keys for action shortcuts
- You can use special keys such as the Tab key
- You can use the Shift and Ctrl keys in combination with other keystrokes

Note: You can use the same keyboard shortcut once in each section. Choose sections in the Actions window:



REAPER will warn you if a shortcut is already assigned to another action.

Shortcut	Description State A
К	Custom: Insert Countoff
Enter	Custom <del>: Play from start of project</del>
Q	Custom 🕥 Keyboard/MIDI/OSC Input 🛛 🗙
Т	Custom
	Custom Shortcut: Katype key or move controller>>
	Action: Special key (Enter, Tab, etc)
	Action:
	Action: MIDI CC. Absolute
	Action:
	Action: Automatically close window on key/MIDI input
	Action:
<	
Shortcuts for se	elected action
К	Add 2 Custom actions: New Edit Delete Copy
and for and	Namu addas
mport/export	Menu editor Run Run/close Close
mport/export	Menu editor Run Run/close Close
mport/export	Menu editor Run Run/close Close
mport/export	Menu editor Run Run/close Close
mport/export	Menu editor Run Run/close Close
Selec	Menu editor Run Run/close Close
selec Actio	Menu editor       Run       Run/close       Close         et an action in the shortcut field to the shortcut key(s) that the short key (s) that the short key (s) that the short key (s) the short key (s) that the short key (s) the
Selec	Menu editor       Run       Run/close       Close         et an action in the ons window.       In the Shortcut field the shortcut key(s) the shortcut key(s) the shortcut key(s) the you want to assign.
Selec Action	Menu editor       Run       Run/close       Close         et an action in the ans window.       In the Shortcut field the shortcut key(s) the you want to assign.         the Add button.       Click the OK button.
Selec Action Click	Menu editor       Run       Run/close       Close         et an action in the ins window.       3       In the Shortcut field the shortcut key(s) the you want to assign.         the Add button.       4       Click the OK button.
Selec Action Click	Menu editor       Run       Run/close       Close         et an action in the ans window.       In the Shortcut field the shortcut key(s) the you want to assign.       the shortcut key(s) the you want to assign.         the Add button.       Image: Close and the shortcut key(s) the you want to assign.       Click the OK button.         will open the       The Keyboard/MISC/O

close.

dialogue box.



You can view and edit your custom actions in REAPER.

Click the **Edit** button in the **Actions** window to open the **Edit Custom Action** window.

Use this window to view or edit custom actions if you need to.

Turn the page to create custom actions for Rock Band!

# TEMPO MAPPING SHORTCUT: Q

Q is the default shortcut for tempo mapping.

### ABOUT THIS SHORTCUT

The **Q** shortcut tempo maps a single measure based on the current time signature.

You can find this shortcut in the Main section of the Actions list. It is installed by the **RBN Tools** software package.

Make sure that the **Q** shortcut exists.

You will need this shortcut when you start to tempo map your first song.

SHORTCUT INSTALL

If you cannot find the shortcut try reinstalling the **RBN Tools** software again.

Installation instructions are on pages 27 — 28.

If for some reason you still cannot find the shortcut, continue to step 2.

# 2

NEW CUSTOM ACTION

Open the  $\ensuremath{\mathsf{Actions}}$  window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select **Main**:



Create a new custom action:

Click the New button

# 3

#### SELECT ACTIONS

In the **Create Custom Action** dialogue select these actions:

- Time selection: Set end point
- Move edit cursor back one
- Move edit cursor to start of
- Time selection: Set start

current measure

point

 Markers: Create measure from time selection (detect tempo)

# 4

field type:

dialogue:

ACTION NAME

In the Create Custom Action

Close the Create Custom Action

Set tempo by bar

Click the OK button

KEYBOARD

In the Actions window:

SHORTCUT

- Select the Custom: Set tempo by bar shortcut
- Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

- Press: Q
- Click the **OK** button

The **Keyboard/MIDI/OSC Input** dialogue will close.

In the Actions window:

Click the Close button

### TEMPO MAPPING SHORTCUT: T

T is the default shortcut for changing time signature.

### ABOUT THIS SHORTCUT

The **T** shortcut tempo maps a single measure and changes the time signature.

You can find this shortcut in the Main section of the Actions list. It is installed by the **RBN Tools** software package.

> Make sure that the **T** shortcut exists.

You will need this shortcut when you start to tempo map your first song.

SHORTCUT INSTALL

If you cannot find the shortcut try reinstalling the **RBN Tools** software again.

Installation instructions are on pages 27 — 28.

If for some reason you still cannot find the shortcut, continue to step 2.

# 2

CREATE A NEW CUSTOM ACTION

Open the **Actions** window:

Click the Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select **Main**:



Create a new custom action:

Click the New button

# 3

#### SELECT ACTIONS

In the **Create Custom Action** dialogue select these actions:

- Time selection: Set end point
- Move edit cursor back one beat
- Move edit cursor to start of current measure
- Time selection: Set start point
- Markers: Create measure from time selection (new time signature)

# 4

field type:

dialogue:

signature)

Click the **OK** button

ACTION NAME

In the Create Custom Action

Set tempo by bar (new time

Close the Create Custom Action

# KEYBOARD

In the Actions window:

SHORTCUT

- Select the Custom: Set tempo by bar (new time signature) shortcut
- Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

- Press: T
- Click the **OK** button

The **Keyboard/MIDI/OSC Input** dialogue will close.

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- In the Actions window:
- Click the Close button

REAPER CONFIGURATION

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### ADVANCED TEMPO MAPPING SHORTCUT: SHIFT + Q

Shift + Q is the C3 shortcut to tempo map between project markers.

### **ABOUT THIS** SHORTCUT

The **Shift** + **Q** shortcut is a custom C3 Action. Authors use this shortcut so that they can tempo map between beats or measures.

This shortcut is great for:

- Simple or complex songs
- Songs that slow down or speed up
- Songs that don't have a downbeat at the start of a measure

To create the Shift + Q action follow these steps.

#### CREATE NEW CUSTOM ACTION

Open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select Main:



Create a new custom action:

Click the New button

SELECT ACTIONS

In the Create Custom Action dialogue select these actions:

- Time selection: Set start point
- Markers: Go to next marker/ project end
- Time selection: Set end point
- Markers: Create measure from time selection (new time signature)

ACTION NAME

In the Create Custom Action field type:

Advanced Tempo Mapping

Close the Create Custom Action dialogue:

- Click the **OK** button
- Press: Shift + 0
- Click the OK button

The Keyboard/MIDI/OSC Input dialogue will close.

- In the Actions window:
- Click the **Close** button

### SHORTCUT

**KEYBOARD** 

In the Actions window:

- Select the Advanced Tempo Mapping shortcut
- Click the Add button

The Keyboard/MIDI/OSC Input dialogue will open:

We review advanced tempo mapping in

79

### MOVE PLAY CURSOR FORWARD ONE MEASURE SHORTCUT: SHIFT + TAB

Shift + Tab is an optional shortcut to advance the play cursor one measure at a time.

### ABOUT THIS SHORTCUT

The **Shift** + **Tab** shortcut moves the play cursor forward one measure. If the song tempo is even this action can quickly move the play cursor to the next downbeat.

#### OPEN THE ACTIONS LIST

Open the **Actions** window:

Click the Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select **Main**:



# 2

FIND ACTION

- In the search Filter type:
- forward
- In the filtered results select:
- Move edit cursor forward one measure

# 3

#### KEYBOARD SHORTCUT

In the Actions window:

Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

- Click the Special key (Enter, Tab, etc) button
- Press: Shift + Tab
- Click the **OK** button

Close the **Keyboard/MIDI/OSC** Input dialogue.

In the Actions window:

Click the **Close** button

You can use this shortcut for regular or advanced tempo mapping.

### SCROLL TEMPO MAPPING SHORTCUT: ALT + Q

Alt + Q is a C3 shortcut to scroll tempo map with project markers.

### ABOUT THIS SHORTCUT

The **Alt** + **Q** shortcut is a custom C3 action. It is used with the scroll tempo mapping method to tempo map between a marker and the play cursor.

**Note**: Use separated drum tracks if you are using this method to tempo map.

Use this shortcut for:

- Simple or complex songs
- Songs that slow down or speed up
- Songs that doesn't have a downbeat at the start of a measure

To create the **Alt** + **Q** action follow these steps.

#### CREATE NEW CUSTOM ACTION

Open the Actions window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu choose **Main**:



Create a new custom action:

Click the **New** button

# 2

#### CREATE LIST OF CUSTOM ACTIONS

In the **Create Custom Action** dialogue select these Actions:

- Markers: Insert marker at current position
- Markers: Go to previous marker/project start
- Time selection: Set start point
- Markers: Goto next marker/ project end
- Time selection: Set end point
- Markers: Create measure from time selection (new time signature)
- Time selection: Remove time selection and loop point selection

### **3** NAME THE CUSTOM ACTION

Type a name for the custom action:

 In the Custom action name field type: Scroll Tempo Mapping

Close the **Create Custom Action** dialogue:

Click the **OK** button

### KEYBOARD SHORTCUT

In the **Actions** window:

- Select the Scroll Tempo Mapping shortcut
- Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

Press the keys: **Alt** + **Q** 

Close the **Keyboard/MIDI/OSC** Input dialogue:

Click the **OK** button

In the Actions window:

Click the  $\ensuremath{\textbf{Close}}$  button

You can learn more about Scroll Tempo Mapping at the end of chapter 6.

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### **UNISON PHRASE** SHORTCUT: U (LEGACY SETUP)

The U shortcut turns an Overdrive phrase into a Unison phrase.

### **ABOUT THIS** SHORTCUT

The **U** shortcut copies the selected Overdrive phrase to other MIDI tracks. This allows a single Overdrive phrase to become a Unison phrase.

#### You will learn more about this shortcut when we discuss Overdrive and Unison phrases in Chapter 17.

REAPER CONFIGURATION

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CREATE NEW CUSTOM ACTION

Open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select MIDI Editor:

#### Main Main (alt recording) Media explorer MIDI Event List Editor MIDI Inline Editor

Create a new custom action:

Click the New button

SELECT ACTIONS

In the Create Custom Action dialogue select the following actions:

- Edit: Copy
- Navigate: Move edit cursor to start of selection
- Cycle to next secondary MIDI item
- Edit: Paste
- Navigate: Move edit cursor to start of selection
- Cycle to next secondary MIDI item
- Edit: Paste
- Navigate: Move edit cursor to start of selection

Cycle to next secondary MIDI

Navigate: Move edit cursor to

Cycle to next secondary MIDI

start of selection

item

item

Edit: Paste

NAME THE CUSTOM ACTION

action:

■ In the Custom action name field type: Unison Phrase

dialogue:

- Click the OK button
- Click the OK button

The Keyboard/MIDI/OSC Input dialogue will close.

#### In the **Actions** window:

Click the Close button

Type a name for the custom

Burn

Close the Create Custom Action

dialogue will open:

Press: U

**KEYBOARD** 

SHORTCUT

In the **Actions** window:

Burn shortcut

Click the Add button

Select the Unison Phrase

The Keyboard/MIDI/OSC Input

#### Follow these steps for **REAPER version 4.22.**

### **UNISON PHRASE** SHORTCUT: U (MODERN SETUP)

The U shortcut turns an Overdrive phrase into a Unison phrase.

### **ABOUT THIS** SHORTCUT

The **U** shortcut copies the selected Overdrive phrase to other MIDI tracks. This allows a single Overdrive phrase to become a Unison phrase.

Thanks to Sean for providing this REAPER action.

> You will learn more about this shortcut when we discuss Overdrive and Unison phrases in Chapter 17.

### CREATE NEW CUSTOM ACTION

Open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select MIDI Editor:



Create a new custom action:

Click the New button

SELECT ACTIONS

In the Create Custom Action dialogue select the following actions:

- Edit: Copy
- Navigate: Move edit cursor to start of selected events
- Activate next visible MIDI item
- Edit: Paste events into the active MIDI media item regardless of source MIDI media item
- Navigate: Move edit cursor to start of selected events
- Activate next visible MIDI item

- Edit: Paste events into the active MIDI media item regardless of source MIDI media item
- Navigate: Move edit cursor to start of selected events
- Activate next visible MIDI item
- Edit: Paste events into the active MIDI media item regardless of source MIDI media item
- Navigate: Move edit cursor to start of selected events
- Activate next visible MIDI item

NAME THE CUSTOM ACTION

Type a name for the custom action:

In the Custom action name field type: Unison Phrase Burn

Close the Create Custom Action dialogue:

- Click the OK button
- Click the OK button

dialogue will open:

Press: U

**KEYBOARD** 

SHORTCUT

In the **Actions** window:

Burn shortcut

Click the Add button

Select the Unison Phrase

The Keyboard/MIDI/OSC Input

The Keyboard/MIDI/OSC Input dialogue will close.

- In the **Actions** window:
- Click the Close button

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#### Follow these steps for modern versions of REAPER.

### IMPORT LYRICS SHORTCUT: SHIFT + L

The Shift + L shortcut imports lyrics from a text file.

### ABOUT THIS SHORTCUT

The **Shift** + L shortcut imports lyrics from a text (.txt) file. Lyrics are added to the selected MIDI notes in the vocal track.

You can use **Notepad** or another text editor to create .txt files for import into REAPER.

# OPEN THE

Open the **Actions** window:

ACTIONS LIST

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select **MIDI Editor**:



# 2

#### FILTER THE ACTIONS LIST

In the Actions window:

- In the **Filter** field type: **lyrics**
- In the filtered results:
- Select: Import lyrics for selected notes from file

# 3

KEYBOARD SHORTCUT

In the Actions window:

Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

- Press: Shift + L
- Click the **OK** button

The **Keyboard/MIDI/OSC Input** dialogue will close.

- In the Actions window:
- Click the Close button

The use of this shortcut is discussed on pages 561 — 562.

# ENABLE REASCRIPT

ReaScript must be enabled for C3 Automation Tools (CAT) to work.

<ul> <li>The C3 Automation Tools (CAT) are a core utility for custom authors. Let's work through a few steps to get CAT working in REAPER.</li> <li>Open the REAPER Preferences:</li> <li>Click the Options &gt; Select Preferences</li> <li>Shortcut: Press Ctrl + P</li> </ul>	SEAPER H-22 (Licensed for personal/small busines unit)             File Edit View Inset Nem Text Option: Actions Help              Interfield: View Inset Nem Text Option: Actions Help              Interfield: New Inset Nem Text Option: Actions Help                   Interfield: New Inset Nem Text Option: Actions Help              New Interfield: New New Inset Nem Text              Show Interfield: New New Inset Nem Text              Show Interfield: New New Inset Nem              Show Interfield: New New Inset Nem              Show Interfield: New New Inset Nem              New Interfield: New New Inset Nem              Show Interfield: New New Inset Nem              New Interfield: New New Inset Nem              New Interfield: New New Inset Nem              New Interfield:	ReaScript         Imable       Download Python       Vew ReaScript help         ReaScript is support for calling REAPER API functions using Python, a popular scripting language. ReaScript can be used to create simple macros to perform frequently repeated tasks, or to create complex REAPER extensions.       ReaScript requires a recent version of Python installed on the machine.         Pease see the ReaScript help page for more information.       Image for more information.         Python:       python27.dll is installed.       Image for more information.         Python to use dli       Eroce Python to use dli       Eroce Python to use dli	<ul> <li>In the ReaScript area of the window:</li> <li>Check the Enable checkbox</li> <li>REAPER should show that Python is installed:</li> <li>Check for the following confirmation (highlighted in the screenshot):</li> <li>python27.dll is installed</li> <li>Click the OK button</li> </ul>
<ul> <li>The Preferences window will open:</li> <li>In the left hand pane scroll to the bottom of the list</li> <li>Under Plugins select ReaScript</li> </ul>	RAPER Preferences         Image: Control of the second	REAPER Preferences       Image: Reason in the second of the	4 If Python is not detected try restarting REAPER. Otherwise make sure you have the correct Python version installed (see pages 29 – 30). Turn the page to assign the <b>F9</b> keyboard shortcut to CAT.

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### C3 AUTOMATION TOOLS (CAT) SHORTCUT: F9

The F9 shortcut opens the C3 Automation Tools.

### ABOUT THIS SHORTCUT

The **F9** shortcut is used to open the C3 Automation Tools (CAT).

CAT contains many useful scripts that automate authoring tasks in REAPER. For example, CAT can help you reduce your MIDI charts from expert to easy.

CAT has close to 50 functions in total.

### OPEN THE ACTIONS WINDOW

Open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

Make sure that the **Section** drop down menu is set to **Main**:



# 2

#### LOAD NEW REASCRIPT

In the **Actions** window load the script for CAT:

 Click the ReaScript New/ load button

The **Load Script** window will open.

### **3** LOCATE THE SCRIPT FOR CAT

In the Load Script window:

- Browse to C:\CAT
- Select the CAT.py file
- Click the Open button

The **Load Script** window will close.

### KEYBOARD SHORTCUT

- In the Actions window:
- Select the Custom: CAT.py shortcut
- Click the Add button

The **Keyboard/MIDI/OSC Input** dialogue will open:

- Press: F9
- Click the **OK** button

The **Keyboard/MIDI/OSC Input** dialogue will close.

- In the Actions window:
- Click the Close button

#### For CAT to work **ReaScript** must be **enabled** and **Python** must be **detected** by REAPER. See pages 91 — 92 for details.

You will learn how to use CAT in chapter 21.

# SUSTAIN TO SINGLE NOTES SHORTCUT: CTRL + ALT + S

This C3 shortcut is optional. It converts a sustained note into many single MIDI notes.

### **ABOUT THIS** SHORTCUT

You can add this shortcut to your workflow to save time.

Let's say, for example, that you need to author a long run of sixteenth notes. You can:

- Author each note, one at a time, or
- Author a single sustained note and then divide it into single 1/16 notes

This shortcut divides selected sustain notes into single notes.

Note: Sustain notes divide according to your MIDI grid size. A 16th note MIDI grid will result in 16th notes. Check your grid size before using this shortcut.

### OPEN THE ACTIONS LIST

Open the **Actions** window:

Click Actions > Show action list

Shortcut: Press Shift + ?

In the **Section** drop down menu select MIDI Editor:



FILTER THE

#### In the **Actions** window:

ACTIONS LIST

- In the **Filter** field type: **split**
- In the filtered results:
- Select: Split notes on grid

# **KEYBOARD** SHORTCUT

- In the Actions window:
- Click the Add button

The Keyboard/MIDI/OSC Input dialogue will open:

- Press: Ctrl + Alt + S
- Click the **OK** button

The Keyboard/MIDI/OSC Input dialogue will close.

- In the **Actions** window:
- Click the **Close** button.

#### HOW TO USE THE SHORTCUT

In the MIDI Editor:

Draw a sustain note



- Select the sustain note
- Press Ctrl + Alt + S to split the sustain note:



The sustain note is split according to the size of the MIDI Editor grid.



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- The C3 Template is the default template for authoring Rock Band customs.
- Automate project backups so that you don't lose work if REAPER crashes.
- The project timebase is an important setting. It directly impacts tempo mapping in REAPER.
- Scrub and mouse behavior settings are needed for tempo mapping and vocal authoring.
- Use audio render presets to export audio from REAPER.
- REAPER Actions let you repeat simple or complex tasks with the press of a button.
- The C3 Automation Tools (CAT) need ReaScript and Python to function.

# INTRODUCTION TO REAPER

- REAPER user interface
- Rock Band note colors
- How to scrub audio

3

# Harmonix used REAPER to create songs for Rock Band.

In this section we introduce REAPER and the C3 Template. The topics that we cover include:

- The layout of the MIDI Editor and the C3 Template
- The Play cursor and how to scrub audio \*
- The Transport bar and media controls
- Resizing elements in REAPER
- Track controls
- Docking and undocking the MIDI Editor
- Customize MIDI note colors to match Rock Band colors \*
- Text Events and Text Event lists \*
- Draw and select notes in the MIDI Editor
- Copy and paste notes in the MIDI Editor
- REAPER view modes \*
- New Project tabs and Ctrl + Z REAPER bug \*

\* Some of these features are not intuitive. For example, how to scrub audio, or find the MIDI Editor hidden context menu. If you are already familiar with REAPER I recommend you focus on the topics marked with an asterisk.



# **REAPER USER INTERFACE**



#### TOOI BAR

The **Toolbar** contains buttons for frequently used functions:



Tip: Use the Metronome to check your tempo maps.



Toggle On/Off

Tip: Turn Snap to Grid off to position audio files in REAPER.

#### MENU BAR

The **menu bar** groups commands together. These commands help you load and save files, insert audio files, create actions, and so on.

#### PLAY CURSOR

The **play cursor** selects your position in the timeline. It is also used to scrub through audio (for tempo mapping and vocal authoring).

#### TIMELINE

The **timeline** helps you navigate your project. By default it shows measures/beats and minutes/ seconds.

Undo (Ctrl + Z)

Toggle On/Off

Grid lines (Alt + G)

#### TRACK PANEL

The Track Panel controls your audio and MIDI tracks. You will see all your tracks when you load the C3 Template.

#### TRANSPORT BAR

The Transport Bar controls playback and recording. It also shows the position of the play cursor. The slider controls the playback speed.

#### ARRANGE AREA

The **arrange area** shows your audio and MIDI tracks and lets you interact with them.

### THE C3 TEMPLATE



#### OVERVIEW

The C3 Template contains everything you need to make a custom song in REAPER.

The Track Panel includes:

- Master track
- Song Audio trackCount-in track
- Basic and pro instrument MIDI tracks
- Events track
- Venue track
- Beat track

You will use the **Master**, **Song Audio**, and **Count-in** tracks for tempo mapping.

The remaining tracks are all MIDI tracks. You will author your charts in the instrument MIDI tracks. The **Events**, **Venue**, and **Beat** track all contain additional game information.

#### MASTER TRACK

The **Master track** controls audio for the whole project. The blue line in the Master track shows your project tempo map.

#### SONG AUDIO

The **song audio** track is where you put your song audio file. You can use .wav or .mp3 files. I use a high quality .flac file from a CD whenever possible.

#### COUNT-IN TRACK

The count-in track contains six samples of the hi-hat. wav audio file. We arrange these samples to count-in the song for the player. The default count-in is: One, two, one, two, three, four.

called stick.wav is also part of the Custom Tools. You can use other count-in samples instead if you want to.

HI-HAT.WAV

hi-hat.wav is the default audio

sample for the count-in track.

You can find this sample in the

alternative drum stick sample

Custom Tools download. An

#### MIDI TRACKS

MIDI tracks contain the MIDI notes for each Rock Band instrument and difficulty.

Other game information charted in MIDI tracks includes:

- Solo markers
- Overdrive markers
- Character animations
- Vocal phrases and lyrics
- Lane markers
- Drum fills and Big Rock Endings

### MIDI EDITOR



#### MIDI EDITOR OVERVIEW

The **MIDI Editor** is where you chart the MIDI notes for each Rock Band instrument. The Editor includes:

- The Editor template and MIDI grid
- Playback controls
- Track tab
- Grid controls
- Text events panel

#### EDITOR TEMPLATE

The **MIDI Editor Template** shows the structure of each MIDI track. Each Rock Band instrument has a different template to follow. We will discuss these templates in the authoring chapters later in this book.

#### **GRID CONTROLS**

**Grid Controls** let you adjust the divisions in the MIDI Editor grid. You can choose different note sizes, for example 16th, or 32nd notes. You can also choose different grid types, such as straight notes or triplets. In the screenshot to the left you can see the PART DRUMS track open in the MIDI Editor.

The template lists the note names for the drum track. This includes note rows for Expert. Hard, Medium, and Easy drums.

Beneath the MIDI grid is a horizontal panel for text events. Text events have various functions depending on the MIDI track / instrument.

#### EDITOR TOOLBAR

The **Snap to Grid** button in this toolbar controls snapping in the MIDI Editor. Leave this button **enabled** for authoring in the MIDI Editor.



#### **TEXT EVENTS**

**Text Events** are displayed directly under the grid. They are moveable pointers with associated text. They provide additional game data.

**Tip: Lyric Events** look the same as text events. They are found only in vocal tracks.

Double-click on a MIDI track to open it in the MIDI Editor.

#### TRACK TAB

**Track Tabs** let you switch between open MIDI tracks.

**Tip:** Each MIDI Editor Tab has a hidden context menu. Right click a MIDI Editor Tab to view the context menu.

#### EDITOR GRID

The **MIDI Editor Grid** is where you will spend most of your time in REAPER. MIDI notes, markers, and Overdrive are all authored here.

In the MIDI grid your mouse icon will change to a pencil icon.

## THE PLAY CURSOR

#### The play cursor is used to select a point in the timeline / MIDI Editor.

···· MIDI Editor

To the right you can see the play cursor in both the timeline and the MIDI Editor.

The play cursor is the small red triangle with a thin red line beneath it.

The red line runs vertically through the timeline, MIDI tracks, and MIDI Editor. This makes the position of the play cursor easier to see.

Click in the MIDI Editor or Timeline to re-position the play cursor.

#### PLAY CURSOR POSITION

The timeline shows the play cursor position in:

- Measures, beats, and fractions of a beat
- Minutes, seconds, and milliseconds

#### PLAYBACK The MIDI Editor shows the play

cursor position in measures,

position in the Transport Bar

(see page 115).

beats, and fractions of a beat.

You can also see the play cursor

current play cursor position.



Playback begins from the

Timeline



Use the play cursor to scrub through audio. Scrubbing is used to tempo map and author vocal charts.

HOW TO SCRUB AUDIO

Move your mouse cursor over the play cursor and it will change to a **hand icon**: and

With the hand icon on the play cursor click and drag the mouse slowly left and right.

The hand icon will disappear as you drag the play cursor.

Use this action to scrub through your project audio. You can scrub through your audio to find kicks and snares when you tempo map. When you author vocals scrub to find vowel sounds in the vocal track audio.

#### JOG VS SCRUB

Jogging and scrubbing are used for different purposes. It is important not to mix them up:

- Jogging is when you quickly drag the play cursor to a new position in the timeline
- Scrubbing is when you slowly drag the play cursor to hear sounds in the audio

correct settings so that you can scrub audio in REAPER.

See pages 65 - 66to set scrubbing as a default behavior in REAPER.

Make sure that you use the

# **RESIZING ELEMENTS**

Resize elements to access track controls, view waveforms, and author long songs.

#### **OVFRVIFW**

There are a few elements that you might want to resize in REAPER. These include:

- The height of your tracks in the track panel
- The width of your track panel
- The height of the MIDI Editor, and
- The length of your MIDI tracks

Resizing your **track height** will do two things. It will reveal track controls or let you see the waveform in your audio track(s).

Adjust the track panel width according to your preference.

Adjusting the MIDI Editor height will let you see more, or less, of your charts.

Adjusting MIDI track length will let you author longer songs.

#### **TRACK HEIGHT**

To adjust track height follow these steps.

In the track panel:

 Move your mouse to the bottom of a track The cursor will change

to a resize arrow:  $\hat{1}$ 

 Click and drag the resize arrow down to adjust the track height

This will reveal the track control panel:

-5438	-18 -inf 1/O	MS
	→ 0.50dB	FXU
	l center	MONO

Increase the track size to see the waveform of audio files in more detail:



#### TRACK PANEL WIDTH

Adjust the track panel width as follows:

In the track panel:

 Move your mouse to the right edge of the track panel:

The cursor will change to a resize arrow: 👄

 Click and drag the resize arrow left or right to change the panel width

SONG AUE I/O -inf M S	1
	2
PART DRL 1/0 inf M S	3
PART BAS VO	4
O PART GUI 1/0 M S	5
O PART VOC 1/0 M S	6
	7
O DRYVOX1 1/0	8
	9
	10
	11
O DRYVOX3 1/0	12
	2
O PART R 1/0 M S	14
O PART R 1/0 M S	15
O PART R 1/0 M S	16
O PART R 1/0 M S	17



#### MIDI EDITOR HEIGHT

At the top of the MIDI Editor is a horizontal grey dividing line:

 Position your mouse anywhere on the dividing line

The cursor will change to a resize arrow:  $\hat{1}$ 

 Click and drag the resize arrow up or down to adjust the height of the MIDI Editor



### MIDI TRACK LENGTH

In the C3 Template the track length is set to 95 measures.

If your song is longer than this you will need to extend the length of your MIDI tracks.

- Press the End key to scroll to the end of your project
- Press Ctrl + A to select all tracks
- Position the mouse at the end of a selected track

The cursor will change to a resize indicator:

#### \$

 Click and drag your tracks so that they are longer than your audio track

#### HOT KEYS

Use these hot keys to adjust track height:

- Expand selected ! tracks
- Minimize track

In modern REAPER the MIDI Editor resize grabber is not visible. Position your mouse cursor under the Media **Controls** and above the MIDI Editor Toolbar to locate it.

#### TEXT EVENTS

When the text events area is small text events can often overlap. This makes them very difficult to read:



To fix this, resize the text events area to make it larger:

Rest the mouse over the grab-bar at the top-left of the text events area

The cursor will change to a resize arrow: Î

• Click and drag the grab-bar up to resize the area

The text events will become easier to read the more space that you give them:





# TRACK CONTROL PANEL

The Track Control Panel contains essential track controls.

To the right is the track control panel for the Master track and the PART DRUMS track.

Below is a summary of the track 4 controls that you will use the most often.

Meter to view track

Mute button. Mute

Solo button. Listen to

individual track(s) only.

individual tracks.

volume.

2

3



1

# MEDIA CONTROLS

The left side of the Transport Bar contains media controls.



Home button. Takes you to the

**Stop** button. Halts playback.

You can also use the **Spacebar** 

start of the project.

to stop playback.

To the left you can see media controls for playback and recording.

The **Home** and **End** buttons take you to the start and end of your project in a single click. You can also use the **Home** and **End** keys if you prefer.

Use the **Spacebar** to start and stop playback.

**End** button. Takes to you the end of the project.

**Record** enable button. Records input(s) to the selected track.

**Repeat** button. Toggles repeat playback on and off.

- 4 **Volume Slider**. Increase or decrease track volume.
- 5 FX button. View the RBN Preview window. Add effects to the track.

The power button toggles all effects on and off for the track. **Record** enable button. Record input(s) to the track.

6

2

3

Track Name. Do not change the C3 Template track names.



**Play** button. Plays media. Press

the **Spacebar** to start playback.

Pause button. Pauses playback.

# PLAY CURSOR POSITION

### **BPM, TIME SIGNATURE** & RATE

The middle section of the Transport Bar shows the position of the play cursor in your project.

The Transport Bar shows the position of the play cursor in two ways. First, by measure and then by time.



The right hand section of the Transport Bar shows tempo map information. The slider lets you adjust playback speed.



To the left you can see the current Beats Per Minute, time signature, and playback rate in the Transport Bar.

#### **MEASURE**

The measure counter shows cursor position in measures, beats, and fractions of beats.

The first number in the counter is the measure number. The default starting measure is 1.

The second number shows the beat within the measure. The number of beats depends on the time signature for that measure.

For example, a measure of 4/4 will have four beats in the measure (beats one, two three, and four).

The start of a measure always begins on the first beat. For example, the start of measure three is 3.1.00.

The last two digits show fractions of a beat.

For example, 3.1.50 would be halfway between beats one and two, in measure three.

#### TIME

The time counter shows the cursor position in minutes, seconds, and milliseconds.

The millisecond part of the counter can be useful when tempo mapping. (You will be able to measure how close beats are to the MIDI grid).

We can use the millisecond counter to check if we need extra tempo markers.

#### BEATS PER MINUTE

The Transport Bar shows the

The current BPM depends on the position of the play cursor in your project.

The default project BPM is 120.

#### TIME SIGNATURE

The Transport Bar shows the current Beats Per Minute (BPM). current time signature.

> The time signature shown depends on the position of the pay cursor in your project.

The default time signature is 4/4.

#### RATE

The rate slider shows the current playback speed.

The default rate is 1.0 (for normal playback).

Follow these steps to return the playback rate to normal (if you accidentally change it):

- Right click the Rate control
- Select Set to 1.0 from the context menu

INTRODUCTION TO REAPER 115

# SCROLL, ZOOM, AND NAVIGATE IN REAPER

Navigate the Track Panel and MIDI Editor in REAPER using the mouse and keyboard.

#### NAVIGATION **OVERVIEW**

Navigation in REAPER depends on your cursor position.

If your cursor is in the MIDI Editor then your scroll and zoom actions will apply to the MIDI Editor.

If your cursor is in the MIDI tracks area then your scroll and zoom actions will apply to the MIDI tracks.

For most navigation you can choose to use either the keyboard or the mouse.

**Tip**: To scroll up and down you can use the scrollbars at the edges of the REAPER window.

At the ends of the scroll-bars are small round buttons with plus (+) and minus (-) signs. You can use these buttons to zoom in and out.

### SCROLL UP AND DOWN

To scroll up and down through vour track list:

- Use the **mouse wheel**, or
- Use Alt + Up and Down arrow keys

#### SCROLL LEFT AND RIGHT

To scroll left and right through the timeline:

- Use Shift + mouse wheel. or
- Use Alt + Left and Right arrow keys

#### POSITION THE PLAY CURSOR

To position the play cursor in the Timeline / MIDI Editor:

Click in the timeline / MIDI Editor

### VERTICAL ZOOM IN AND OUT

To zoom in and out on all tracks or the MIDI Editor Template:

- Use Ctrl + mouse wheel, or
- Press the Page Up and Page Down keys

#### HORIZONTAL ZOOM IN AND OUT

To zoom in and out on the play cursor / timeilne:

- Use Alt + mouse wheel, or
- Use the **Plus** (+) and **Minus** (-) keys

### TIMELINE SELECTION

To make a selection in the timeline:

**Click** and **drag** the cursor in the timeline

#### ZOOM TO TIMELINE **SELECTION**

Click and drag to make a selection in the timeline, then:

Press Shift + Page Up

### MOVE PLAY CURSOR

start / end of the timeline:

Press Home and End kevs

### SYNC PROJECT SCROLLING

With certain settings your timeline and MIDI track scrolling will not be synchronized. Follow these steps to fix the issue:

- Open a MIDI track
- **Right-click** the track tab
- In menu click View > Piano roll timebase > Project synced

Your project timeline and MIDI will now scroll in sync. When you scrub audio your play cursor is now synced in the MIDI Editor.

**Note**: These steps assume that your MIDI Editor is docked.

**VIEW WHOLE** PROJECT

whole project:

TO START / END

To move the play cursor to the

#### MAXIMIZE SELECTED **TRACK(S) HEIGHT**

To maximize the height of selected track(s):

Press the Shift + 1 keys

Press **Shift** + **1** again to return tracks to their previous size.

### MINIMIZE ALL

To minimize the height of all

Press Shift + 2

tracks:

Incorrect sync settings make it very difficult to scrub audio and author vocal and instrument MIDI tracks.

timeline:

CANCEL TIMELINE

Press Esc

To zoom out and view your

### **SELECTION** To cancel a selection in the

### TRACKS

### DOCKING AND UN-DOCKING THE MIDI EDITOR

#### ... MIDI Editor Toolbar



..... MIDI Editor Tab

#### EDITOR DOCKED

In the screenshot above the MIDI Editor is docked. It is a part of the main REAPER window and can be re-sized up and down.

#### EDITOR MENU

When docked the **MIDI Editor Menu** is hidden.

To access the Editor menu **right click** on the **MIDI Editor Tab** at the bottom left of the screen.

#### UN-DOCK EDITOR

To undock the MIDI Editor click the **Dock Editor** button in the MIDI Editor toolbar:





#### EDITOR UN-DOCKED

When you undock the MIDI Editor it changes to a floating window that you can re-size.

This is useful if you have more than one computer monitor to work with.

#### EDITOR MENU

When undocked the **MIDI Editor Menu** is no longer hidden.

The MIDI Editor Menu is visible in the menu bar at the top left of the MIDI Editor window.

#### DOCK EDITOR

To dock the MIDI Editor, click the **Dock Editor** button in the MIDI Editor toolbar:



119 INTRODUCTION TO REAPER

### CUSTOMIZE NOTE COLORS (LEGACY REAPER)

We do not want to customize note colors for every custom song project.

The solution is to customize an empty C3 Template and then

save a new modified template. When you have modified the note colors for the template:

■ Click File, Save project as

 Save the file to C:\Reaper\ ProjectTemplates

Your note colors are now saved to your project template.

#### MIDI EDITOR DOCKED MIDI tracks do not show Rock Band colors by default. To customize the note colors: **Double-click** a MIDI track to open it Rename MIDI take. File Edit Export to new MIDI file.. If the MIDI Editor is **docked** (see Navigate Customize note names Load note names from file... page 119): Options Customize note colors Save note names to file.. View Rename current note Contents Clear all note names ■ Right click the MIDI Editor Actions Tab ext Event Customize menus/toolbar. Dock window Color: Pitch Close editor The MIDI Editor tab context menu will open. Click: File > Customize note colors > Load color map from file MIDI EDITOR UN-DOCKED 2 If the MIDI Editor is undocked (see page 120): Click File > Customize note File Edit Navigate Options View Contents Actions colors > Load color map Rename MIDI take.. from file Export to new MIDI file... Load note names from file... Customize note names > Customize note colors Save note names to file ... Rename current note Close editor Clear all note names DRUM FILL DRUM FIL DRUM FILL (use all 5)



# Mich Lais Mich Catholic Mich Lais Mich Catholic Mich Catholic

### The Load MIDI color map from file window will open:

Browse to: C:\REAPER\ Data\color\_maps

Select the appropriate color map for your MIDI track:

- rockband\_drums.png for the PART DRUMS track
- rockband\_guitarbass.png for the PART GUITAR or PART BASS tracks
- rockband\_vox-other.png for the PART KEYS and other MIDI tracks

In the Load MIDI color map from file window:

Click the **Open** button

The Load MIDI color map from file window will close.

Your MIDI notes are now displayed in Rock Band colors. These colors match the note names in the C3 Template.

### CUSTOMIZE NOTE COLORS (MODERN REAPER)

We do not want to customize note colors for every custom song project.

The solution is to customize an empty C3 Template and then

save a new modified template. When you have modified the note colors for the template:

- Click File, Save project as
- Save the file to C:\Reaper\ ProjectTemplates

Your note colors are now saved to your project template.

In modern REAPER we use an Action to load color maps:

- Double-click a MIDI track to open it
- In the REAPER menu click
   Actions > Show action list

Shortcut: Press Shift + ?

The Actions window will open:

 Click the Section drop down menu and select MIDI Editor from the list

Filter:		Clear	Options	Find shortcut	Section:	Main	`
Shortcut	Description Script: Defa Script: Defa Script: Vefa Action: Mor Action: Mor	ult_6.0_th ult_7.0_th Jua next action lify MIDI C lify MIDI C lify MIDI C lify MIDI C lify MIDI C mentarily se mentarily se	ieme_adjust ieme_adjust in C/mousewl C/mousewl C/mousewl C/mousewl C/mousewl ic/mousewl	A terlua terlua heel: +10% heel: -10% heel: 0.5x heel: 0.5x heel: 0.5x tion to next projection to next proje	ttab 1 ttab 2 ttab 3 ++=h 4	Main (alt Main (alt- Main (alt- M	recording) 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) 16) plorer of rt List Editor $b_{3}^{2}$
		-	Add		Key	map	Menu editor

- In the filter field type color map
- In the list of results select
   View: Load note color map from file
- Click the **Run** button







The **Load MIDI color map from** file window will open:

- Browse to: C:\REAPER\ Data\color\_maps
- Select the appropriate color map for your MIDI track:
- rockband\_drums.png for the PART DRUMS track
- rockband\_guitarbass.png for the PART GUITAR or PART BASS tracks
- rockband\_vox-other.png for the PART KEYS and other MIDI tracks

In the Load MIDI color map from file window:

Click the Open button

4

The Load MIDI color map from file window will close.

Your MIDI notes now match the note names in the C3 Template.

### TEXT EVENTS AND TEXT EVENTS LISTS

In Rock Band we use text events for many things. This includes:

- Animation
- Practise sections
- Venues
- Lyrics
- Create a text event as follows:
- Double-click in the text events panel (highlighted in green)

	1	1.3	2	2.3		3.3
rill Marker					T T	
trum Marker						
RE						
RE						
RE						
RE						
RE (use all 5)						
VERDRIVE						
OID Marker						
area HOPO On						
VIDEDT Over en						
VDEPT Plus						
VDERT Vellow						_
XPERT Red						
XPERT Green						
arce HOPO Off						
arce HOPO On						
ARD Orange						
ARD Blue						
ARD Yellow						
ARD Red						
ARD Green						
EDIUM Orange						
EDIUM Blue						
EDIUM Yellow						
Text Events	BART CUUT					
TONL LYCING	PART GUT	425				

The Edit Text Event window will open.

In the **Type** drop down menu you can see a list of types of text event. The important ones for authoring are:

- Text Event: For all text events that are not Track Names or Lyrics
- Track Name: For the Track Name text events at the start of each track. For example, PART GUITAR
- Lyrics: For lyrics in vocal tracks





Click the **Load** button in the **Add Text Events** window.

Browse to: C:\REAPER\Data\ Text\_Strings

The .txt files in this folder contain lists of text events for:

- Events
- Instruments
- Venues

4

Load the text events that you need for the track that you are working on.

Select text events from the imported list using the **Text** drop down menu.

**Tip:** Always use imported text events to reduce the potential for errors.

**Note:** Text events are not always created exactly where you need them. To reposition text events:

- Click and hold the green stem of the text event
- Drag the mouse left or right to move the text event

### DRAW AND MOVE NOTES IN THE MIDI EDITOR

### SELECT NOTES IN THE MIDI EDITOR



### SINGLE NOTES

To draw single notes **doubleclick** in the MIDI Editor grid.

The size of the notes drawn will depend on the size of the MIDI Editor grid.

In the screenshot above the individual notes are 1/32 notes.

### SUSTAINED NOTES

Sustained notes are the long notes in the screenshot.

**Click and drag** to the right in the MIDI Editor to draw a sustained note.

**Tip:** You can also drag the edge of a single note to turn it into a sustained note.

### MOVE NOTES

**Click and drag** notes to move them around the MIDI Editor.

**Tip:** You can also select notes and use the **arrows keys** to move them in the MIDI Editor.



SELECT MULTIPLE

NOTES IN A ROW





Click on a note to select it. Right click

**Right click** and draw a box to select a group of notes.

#### SELECT MULTIPLE NOTES IN A COLUMN



Select a single note, then press **Shift + click** on another note in the same row.

### SELECT ALL NOTES IN A ROW



**Right click** the row name to select all notes in that row.



Select a single note, then press **Shift + click** on another note in the same column.

#### CLEAR THE CURRENT SELECTION



Press the **Escape** key to clear the current selection.

### ADD OR REMOVE NOTE TO SELECTION



Press **Ctrl** + **click** to add or remove notes from the current selection.

#### SELECT ALL NOTES IN MIDI TRACK



Press **Ctrl** + **A** to select all notes in the MIDI track.

### BASIC INSTRUMENT DIFFICULTIES

#### The C3 Template shows instrument difficulties from Expert to Easy. Each difficulty has five main notes: Green, Red, Yellow, Blue, and Orange.



The C3 Template (above) shows difficulties and note colors. This layout applies to the PART GUITAR, PART BASS, PART DRUMS, and PART KEYS tracks. **Note**: Some parts of template have been removed to simplify this graphic.

This book uses visual shortcuts for each instrument difficulty: X for Expert, H for Hard, M for Medium, and E for Easy.

### COPY AND PASTE NOTES IN THE MIDI EDITOR

Select notes in the MIDI Editor and then use Ctrl + C and Ctrl + V to copy and paste.



Select and copy notes:

Re-posit

- Right click and draw a box to select notes
- Press Ctrl + C to copy the selected notes

Re-position the play cursor:

■ With **snap enabled** click to position the play cursor

2

**ði Q 🖆 📖** i

### 3

Paste notes:

Press Ctrl + V

**Note**: You cannot copy and paste between different instrument difficulties.

### DRAG NOTES BETWEEN DIFFICULTIES

Select notes and then press and hold the Ctrl key. Drag the selected notes to copy them to another difficulty.



1

Select the notes you want to copy to another difficulty:

 Right click and draw a box to select notes

2

The selected notes will be highlighted:

Press and hold the Ctrl key

3

Move the mouse over one of the selected notes, and then:

• Click and drag the selection to another difficulty

# REAPER VIEW MODES

REAPER has three different view modes. Press Alt + 2 to return to the default view.

Use these hotkeys to switch between REAPER views:

- Alt + 1 (Piano Roll)
- Alt + 2 (Named Notes)
- Alt + 3 (Events List)

Named notes is the default view in the C3 Template.

Note: The Events List view can be used to troubleshoot some Magma errors. Right click in Events View to bring up the context menu.



Roll Marker Z-Lane
DRUM FILL
DRUM FILL (use all (119)
(117)
NAMED NOTES

Index	Position	Length	Channel	Туре	Parameter	Value	
1 <<	1.1.00			Track name	PART DRUMS		
2	1.1.50		-	Text event	[mix 0 drums0]		
3	1.1.62		-	Text event	[mix 1 drums0]		
4	1.1.75		-	Text event	[mix 2 drums0]		
5	1.1.87		-	Text event	[mix 3 drums0]		
6	3.1.00	0.0.25	1	Note	C0 - KICK RF	96	
7	3.1.00	0.0.25	1	Note	C6 - EXPERT Kick	96	
8	3.1.50	0.0.25	1	Note	C0 - KICK RF	96	
9	3.1.50	0.0.25	1	Note	C6 - EXPERT Kick	96	
10	3.2.00	0.0.25	1	Note	C0 - KICK RF	96	

### C3 TEMPLATE: COUNT-IN AUDIO TIMEBASE

### NEW PROJECT TABS AND UNDO (CRTL + Z)

If you work with more than one project tab and then use undo (Ctrl + Z) REAPER 4.22 will crash.

Make count-in audio samples adjust to song BPM changes.

The C3 Template includes audio samples in the COUNTIN track. The position of the samples is set according to the default BPM, which is 120.

When the BPM for the countin changes the samples stay in their original position.

In this case the audio samples must be manually repositioned according to the new BPM.

Media Item Properties: 6 items selected\*

To avoid this behavior we change the item timebase for each audio sample as follows:

- Press and hold the Ctrl key
- Click on each audio sample in the COUNTIN track to select them. Release the Ctrl key
- Press the F2 key

The **Media Items Propeties** window will open. Make sure that the window caption says **6 items selected**.

- Change the Item timebase to Beats (position only)
- Click the **OK** button

Your count-in audio samples will now adjust to BPM changes in the first two measures.

ile	<u>E</u> dit	View	Insert	lte <u>m</u>	Track	<u>O</u> ptions	<u>A</u> ctions	
	New p	oroject					Ctrl+N	
	Open	project			Ctrl+O			
	Save p	project				Ctrl+S		
	Save	oroject	as		Ctrl+Alt+S			
	Projec	t temp	lates				>	
	Recen	it proje	ts				>	
	New p	project	ab	Ν		Ctrl+	Alt+N	
	Close	project		hs		C	Ctrl+F4	
	Close	all proj	ects					
	Save a	all proje	cts					
	Projec	t settin	gs			Alt	+Enter	
	Rende	er				Ctrl+	Alt+R	
	Show	render	queue					
	Save I	ive outp	out to di	sk (bou	nce)	Ctrl+	Alt+B	
	Conse	olidate/	Export tr	acks				
	Expor	t projec	t MIDI					
	Clean	current	project	directo	ry			
	Batch	file/ite	m conve	rter		Ctrl+S	Shift+F	
	Quit						Ctrl+Q	

To open more than one project tab in REAPER click:

■ File > New project tab

You will now see tabs for each project under the menu bar.

REAPER can crash if you use the undo function when more than one project tab is open.

When this happens you will lose all unsaved work.

Fade in: 0:00.000 Position: time O beats Length: 0:00.282 Fade out: 0:00.000 Snap offset: 0:00.000 Loop source Mute Beats (position only) Item timebase:  $\sim$ Lock Item mix behavior: Project default item mix behavior  $\sim$ No autofades Play all takes Active take: Take properties: 6 takes selected stick.wav Take name: Start in source: 0:00.000 Pitch adjust (semitones): 0.000000

Make this change in a new (un-used) project. Overwrite the existing C3 Template to make the change permanent:

File > Project templates > Save project as template Do not use the undo function (**Ctrl** + **Z**) after opening new project tabs in REAPER 4.22.

- Resize tracks to access REAPER FX.
- Resize MIDI tracks horizontally so that they match the length of your song audio.
- Un-dock the MIDI Editor to work across multiple displays.
- Load color profiles to show the Rock Band colors for each instrument.
- Load text event lists into the appropriate MIDI tracks. This will save you from having to type text events by hand.
- REAPER will crash if you use the undo function with multiple project tabs open.


- 4/4 Time signature
- Notes and measures
- Basic rock beats

### Some understanding of music is needed to begin authoring custom songs.

In this chapter we will focus on three topics:

- **Time signatures:** Time signatures tell you how to count the beats in a measure of music. We start the chapter with the 4/4 time signature. This is the most common time signature in music. You will learn what the downbeat is and how to count a measure of 4/4. At end of the chapter we look at other common time signatures.
- Measures and notes. Measures divide songs into small parts. Notes are divisions of measures into smaller units. We will look at common notes, dotted notes, rests, triplets, trills, and tremolo notes.
- The basic rock beat is very common in rock music.
   Understanding this simple beat will help you tempo map many basic rock songs.

This chapter does not teach you everything that you need to know about music. But it does prepare you for the next two chapters:

- A basic understanding of the first two topics will help you understand the MIDI Editor grid.
- Understanding time signatures and counting beats will help with tempo mapping.





### MEASURES

A time signature tells you how to count the rhythm, or beats, of a song. 4/4 is the most common time signature in music.



..... Type of beat note

Time signatures are written with one number above the other.

The upper number tells you how many beats there are in a measure.

The lower number tells you what type of notes the beat notes are.

The 4/4 time signature has **four beats per measure**.

The **type of beat note** is a **quarter note**.

This means that there are four quarter notes beats in a measure of 4/4.

> Common Beat Note Types: 2: Half Note 4: Quarter Note 8: Eighth Note

Measures are small sections of a song. The number of beats per measure depends on the time signature.



#### TIME SIGNATURE

Every song starts with a time signature (see measure 1 above).

It is common for many rock and popular songs to only have one time signature. This is typically the 4/4 time signature.

A new time signature is added only when the time signature changes (see measure 2).

#### **BAR LINES**

Each measure starts and ends with bar lines.

There are several different types of bar lines in music:

Single bar lines mark the start and end of measures

Double bar lines mark the start and ends of sections

End bar lines mark the end of a song

Start repeat lines mark the start of a repeated section

End repeat lines mark the end of a repeated section

### BEATS

In the three measures above there are ten quarter note beats in total.

The measure of 4/4 has four beats. The two 3/4 measures have three beats each.

# NOTE LENGTHS AND MUSIC NOTATION

Individual notes are divisions or multiples of measures. The most common notes range from whole notes to sixteenth notes.



### COMMON DOTTED NOTES

### COUNTING QUARTER NOTE BEATS

Dotted notes are notes with a dot next to them. The dot makes the note longer by adding half of its value.

NOTE	VALUE	BEATS	NAME
0.	0 + 0	4 + 2 = 6	Dotted Whole Note
0.	0 + .	2 + 1 = 3	Dotted Half Note
		$1 + \frac{1}{2} = 1\frac{1}{2}$	Dotted Quarter Note
$\rightarrow$	♪ <sub>+</sub> ♪	$1/_2 + 1/_8 = 3/_8$	Dotted Eighth Note

OVERVIEW	BAR LINES
Notes and rests can both be dotted.	A dotted note muthe measure.
A dotted note adds half of its value to itself.	Dotted notes can lines.
Above you can see a table with some common dotted notes. The table shows dotted notes, their musical values, and the	

### ust stay within

nnot cross bar

DOTTED NOTES Double-dotted notes have two

DOUBLE AND TRIPLE

small dots after the note.

Double-dotted notes add three guarters of their value to themselves.

Triple dotted notes are not very common. They add seven eighths of their value to themselves.

Emphasis on different beats is an important part of the feel of a song.



#### TEMPO

Tempo is measured in beats per minute or BPM.

Below is a list of tempos and their approximate bpm:

- Slow (66 76 bpm)
- Walking pace (76 108 bpm)
- Moderate (98 112 bpm)
- Fast (120 156 bpm)
- Very fast (156 176 bpm)
- Very, very fast (168 200 bpm)
- Extremely fast (200 + bpm)
- One, Two, Three, Four

emphasis:

**EMPHASIS** 

Emphasis on different beats

changes the feel of music:

Strong Beat

Weak Beat

as the downbeat.

Medium Beat

In 4/4 the first beat of the

The third beat often has an

measure is the downbeat (the

strongest beat in the measure).

emphasis too, but not as strong

This leaves the weakest beats of

the measure on two and four.

Count the measure with this

#### To the left is a measure of 4/4. It has four quarter notes beats.

Follow the dots and count:

One, Two, Three, Four

The speed at which you count depends on the tempo.

### EXAMPLE

A great example is the intro to "New Kid in School" by The Donnas. Torry Castellano plays guarter note kicks (with a few 8th note toms).

> The key to tempo mapping is to identify the downbeat at the start of the measure.

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number of beats they take.

### COUNTING EIGHTH NOTE **ROCK BEATS**

### COUNTING SIXTEENTH NOTE ROCK BEATS

A basic 4/4 rock beat features eighth notes with emphasis on beats two and four.



To the right is a measure of eighth notes. It shows the emphasis in a basic rock beat.

Count the measure like this:

• One and two and three and four and

### **EMPHASIS**

In a basic rock beat the emphasis is on the snare and hi-hat (beats two and four).

There is less emphasis on the one and three (kick and hi-hat).

This beat produces a rocking rhythm. It rocks from beats one to two, and then three to four.

The eighth note hi-hats help to drive this rhythm.

### EXAMPLE

A classic example of this beat in Rock Band is "Back in Black" by AC/DC.



#### **BASIC ROCK BEAT**





A sixteenth note rock beat features sixteenth notes with emphasis on beats two and four.





◄····· 4/4 Measure 

### SIXTEENTH NOTE ROCK BEAT







The measure to the left shows the emphasis in a sixteenth note rock beat.

Count the measure like this:

• One e and a, **Two** e and a, Three e and a, Four e and a

### **EMPHASIS**

This beat is the same as the eighth note rock beat except for the sixteenth note hi-hats.

It rocks from beats one to two. and then three to four, just like the eighth note beat.

The 16th note hi-hats provide a faster pulse to the rhythm.

### EXAMPLE

The first verse of "Crazy Train" by Ozzy Osbourne is a good example of this beat.



### TRIPLETS

### EIGHTH NOTE TRIPLETS

Triplets divide two regular beats into three equal parts.



•••••

To the right you can see two measures of 2/4.

There are two quarter notes beats to each measure.

Quarter note triplets divide two quarter note beats into three evenly spaced notes.

### NOTATION

All triplets have a number "3" next to them. Triplets can be written in a few different ways:

- With a slur (or arc) above or below
- With beamed notes and the number 3
- With brackets



All the examples above show triplet notes.

### COUNTING

◀……

When you count triplets choose the method that works best for you. For example:

2/4 Measure

- Trip ah let
- One Trip Let, Two Trip
   Let
- One ta ta, Two ta ta
- Ta ki -ta, Ta ki -ta

The first two options will help reinforce the idea that you are counting triplets.

Consider the last two options, or something similar, if you are counting fast triplets. "Trip - ah let" is not that easy to say fast.

### ADVANCED TRIPLETS

Triplets can have rests in them. Triplets can also have more than three notes.

In either case the total value of the notes and rests will be the same as a basic triplet.

> In the example above, grey shades show how to divide the measures.

Eighth note triplets are very common. They divide two eighth notes into three.



◄····· 4/4 Measure ···· ▶

To the left you can see two eighth note triplets on beats three and four.

### COUNTING

An eighth note triplet is three notes played in the space of two eighth notes.

Or, to put it another way, an eighth note triplet is a quarter note divided evenly into three.

Use the count track above the notes as a guide for counting.

Start by counting half a measure of 8th notes and then add in the eighth note triplets.

Refer to the grey shading to help you visualize the rhythms.

Notice how each note is evenly spaced. None of the rhythms should feel rushed. EXAMPLE

Check out "Far Beyond the Sun" by Yngwie Malmsteen. The intro features fast eighth note triplets that really grab your attention!

> A full measure of 8th note triplets is twelve notes in total:

One - Trip - let Two - Trip - let Three - Trip - let Four - Trip - let

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### THE 3/4 AND 6/8 TIME SIGNATURES

## THE 12/8 TIME SIGNATURE

note per beat "shuffle" feel.

A measure of 3/4 can fit in a measure of 6/8. So how are these two time signatures different?

### 3/4

3/4 is a very common time signature. It has **three beats** per measure with emphasis on the downbeat.

This gives 3/4 a "waltz" feel:

 One - Two - Three, One -Two - Three

#### 6/8

6/8 has six 8th notes per measure. With the 8th notes grouped in sets of three this gives us **two beats** per measure.

This gives a "pendulum" feel:

 One - Two - Three, Four -Five - Six

#### 3/4 SIMPLE TIME

3/4 is a simple time signature. The beats divide by two.

Group 8th notes in 3/4 like this:

### 

■ One - &, Two - &, Three - &





### 6/8 COMPOUND TIME

6/8 is a type of compound time signature. This means that the beats divide into three (instead of two):

### 

 One - Two -Three, Four -Five - Six

### EXAMPLES

Check out "Lucy in the Sky with Diamonds" by The Beatles as an example of 3/4 time.

For an example in 6/8 listen to "House of the Rising Sun" by The Animals.



◄····· 12/8 Measure ···· ▶



### "SHUFFLE" SOUND

Emphasis on every 8th note really brings out the shuffle sound of 12/8 time.

For Example "Lost In Yesterday" by Tame Impala.

### TEMPO

At slower tempos 12/8 can feel like two measures of 6/8.

For example, you could notate "Perfect Day" by Lou Reed in 12/8 or 6/8.

### 12/8 is another example of a compound time signature.

12/8

12/8 is a popular time signature with a three

With eighth notes grouped in sets of three, there are four beats per measure.

It has a "shuffle" feel with emphasis on each beat.

### 4/4 TRIPLETS

You can write 12/8 as eighth note triplets in a 4/4, but this is not recommended.

If you author 12/8 this way you will find that your grid lines will not look right in-game.

#### **EXAMPLES**

Listen to "The Way You Make Me Feel" by Michael Jackson for an example of 12/8 time.

Other examples include "Bury A Friend" by Billie Eilish, "Everybody Wants To Rule The World" by Tears for Fears, and "Dazed And Confused" by Led Zeppelin.

## THE 7/8 TIME SIGNATURE

## THE 7/4 TIME SIGNATURE

The 7/8 time signature has seven 8th notes. It typically has three main beats.

### 7/8

7/8 is a complex time signature. The number of beats does not divide equally into groups of two or three.

For example, the first 7/8 measure here is 2 + 2 + 3 beats.

You can count this in a couple of different ways:

• One - Two, Three - Four, Five - Six -Seven

One - Two, One - Two, One -Two - Three

Use whichever feels more natural to you.

### **EMPHASIS**

The emphasis in 7/8 depends on how your group the eighth notes together.

You can use any combination of 2 + 2 + 3 notes. For example:

> 3 + 2 + 22 + 3 + 22 + 2 + 3



7/8 Measure •••••• 

The 3 + 2 + 2 pattern is above.

Notice how it feels different to

count from the first pattern:

• One - Two - Three. Four -

• One - Two - Three , One -

Five, Six -Seven

Two. One - Two

#### EXAMPLE

Listen to "Natural Science" part II: "Hyperspace" by Rush.

Count the 7/8 section as follows:

• One - Two, One - Two, One -Two - Three



### 7/4 FEEL

7/4 has an uneven feel. It feels like two measures of 4/4 but with one beat missing at the end of the measure.

4/4 + 3/4If you wanted to you could write 7/4 as alternating measures of 4/4 and 3/4. Or 3/4 and 4/4.

Note: This means more for you to keep track of in REAPER.

Also 4/4 + 3/4 or 4/4 + 3/4 will look different in game than a single measure of 7/4.

### **EXAMPLES**

7/4

7/4, like 7/8 is a complex time

quarter notes per measure, the

7/4 will often have quarter notes

One - Two - Three - Four, Five

One - Two - Three, Four - Five -

signature. But, with seven

beat feels more even.

groups of three and four:

- Six -Seven

Six -Seven

Check out the verses of "Money" by Pink Floyd for a great example of 7/4 time.

"Solsbury Hill" by Peter Gabriel is another example. The intro features a 3 + 4 pattern that switches to a 4 + 3 pattern.

TRILLS

A trill is two notes that alternate quickly.



technique. This allows for a

trilled notes.

unique sound.

greater interval range between

Tapped trills are usually played

of the pick gives tapped trills a

very fast. The use of the edge

#### TAPPED TRILLS

tone apart.

Tapped trills are a special technique played on the guitar. The guitarist fingers the lower notes with their left hand. The right hand then hits the edge of the pick against the string to play the higher notes. The left and right hands can move away from each other with this

#### EXAMPLES

Check out "Crazy Train" by Ozzy Osbourne. Trills start about half way through the guitar solo.

For tapped trills listen to "Surfing with the Alien" by Joe Satriani. Almost half of the first guitar solo is tapped trills.

#### **UNMEASURED**

Unmeasured tremolo, or *trem*., is played as fast as possible.

Measured tremolo matches a precise rhythm.

Musical notation should say which kind of tremolo to play.

### NOTATION

A Tremolo note has three strokes through the note stem. When a note has no stem the strokes are above the note.

in Rock Band for guitar, bass and keys.

Trill markers are used

Tremolo markers are used for guitar and bass only.

Tremolo is the very fast repetition of notes or chords.



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### TREMOLO NOTES

- 4/4 is the most common time signature. It has four quarter note beats with emphasis on beats one and three.
- Identifying the downbeat at the start of each measure is key to tempo mapping.
- Eighth and sixteenth note rock beats put emphasis on beats two and four.
- Triplets divide two regular beats into three equal parts.
- 3/4 has three quarter note beats. The emphasis is on the downbeat.
- 6/8 has six eighth notes. The emphasis is on beats one and four.
- 12/8 has twelve eighth notes, grouped in sets of three. The emphasis is usually on beats one, two, three, and four.
- 7/8 has seven eighth notes. There are three beats to the measure with groups of two and three notes.
- 7/4 has seven quarter notes. They are often grouped into sets of three and four notes.

### THE MIDI EDITOR GRID

Straight notes

- Triplets and swing notes
- Note pitch and velocity

Use the MIDI Editor grid to author straight, triplet, and swing notes in your custom song charts.

In this chapter we focus on the main features of the MIDI Editor grid. You will learn about:

- **Grid types**: the different grid types that you can use to author notes and rhythms
- Grid size: the different sizes of grids you can use, and the best size for most situations
- Note size: the different note sizes available, and when to use a size other than the grid size
- Note color: the color of MIDI notes and other information associated with MIDI notes. We will focus on note velocity and how to use it for trill and tremolo markers.

At the end of this chapter, you will know how to use the MIDI Editor grid to draw common musical notes.



# INTRODUCTION TO THE MIDI GRID

The default time signature in the C3 Template is 4/4. The default grid size is thirty-second notes.





MIDI Editor Timeline ……:

#### GRID SIZE

The **grid size** drop down menu lets you change the size of the MIDI Editor grid. The default size is **32nd notes**.

This is a good grid size to work with most of the time. With this grid size you can work with 16th notes and have a gap between each note. This gap makes MIDI charts easier to read. Blue notes in particular are hard to tell apart when they are drawn next to each other. You can work with smaller or larger grid sizes as needed.

**Tip**: You can type note values into the grid size drop down menu. For example, type **1/20** for **quintuplet** notes.

### TIMELINE

The timeline displays measures, beats, and fractions of a beat. For example, 3.4 is measure three, beat four.

#### GRID TYPE

The **grid type** menu lets you choose different MIDI grids.

The default grid is **straight** notes. This is for normal, regularly spaced notes. It is the grid type that you will likely use most of the time.

The second grid is the **triplet** grid. Switch to this grid when you are charting triplet notes.

The **dotted** grid gives you a grid of dotted note values. It is not a grid that is commonly, if ever, used to make customs.

The last grid type is the **swing** grid. Use this grid to chart a swing rhythm - a rhythm that is not completely straight.

### COLOR

This menu lets you view MIDI notes by their different properties. The default setting is **pitch** which displays note colors. You will only rarely need to change this setting.

### NOTE SIZE

The note size drop down lets you choose a note size to draw.

For single (unsustained) notes do not choose a note size larger than a 16th note.

The default setting is **grid**. This setting draws notes that relate to the grid size.

Below you can see a 16th note drum pattern on the default 32nd note grid. If the grid size was 16th notes then these notes would be touching each other. This would make the chart harder to read.



For drums, guitar, and bass start with a **1/32** grid with the note size set to **Grid**.

### THE 32ND NOTE GRID AND TIMELINE

Use the 32nd note grid to author most notes.



The MIDI Editor timeline shows measures, beats, and fractions of a beat.

As you zoom in and out the MIDI Editor timeline and grid will expand and shrink.

To see the 32nd note grid, zoom in until you can see half note beats in the timeline. For example, 3.1.50 is a half note beat. It is halfway between beats 3.1 and 3.2.

To the right you can see how to draw some common notes in relation to the timeline.

Use the MIDI Editor timeline to help you position notes correctly.

**Note**: The white cut out notes show the gap(s) between notes.

**Tip**: Remember this is <u>a 32nd</u> note grid. Two 32nd notes make a 16th note gap.



up a whole beat. (A 1/16th note gap is added before the next note).

8th notes are drawn half a beat apart.



32nd notes are drawn an 8th of a beat apart. Use 64th notes with a 64th note gap.

# THE STRAIGHT GRID

The straight grid is the grid that you will use most of the time.

Measure 3 Beat One Beat Three Beat Four Beat Two To the right are some common notes on a straight 4/4 grid. 3.1.50 3.3.50 3.1 3.2 3.2.50 3.3 3.4 3.4.50 Notes up to 16th notes are on the 32nd note grid. 32nd notes are on the 64th note grid. 0 The whole, half, and quarter Whole notes notes here are sustained notes. There is a 16th note gap between the end of the sustain 0 Half notes and the start of the next note. Eighth notes have three 32nd notes between them. Quarter notes Sixteenth notes have one 32nd note between them. Eighth notes The 32nd notes are 64th notes with a gap of one 64th note between them. Sixteenth notes **Note**: The white cut out notes show the gaps between notes. N Thirty-second notes Tip: Two 32nd notes make a 16th note gap.

> Notice that MIDI notes do not need to be drawn the same size as their note name.

Unless a note is sustained it should never be drawn larger than a 16th note. Space between notes in the same row makes them easier to read.

## THE TRIPLET GRID

Use the triplet grid to author triplet notes. Eighth and sixteenth note triplets are the most common.



### THE SWING GRID

Use the swing grid to author songs that have a swing beat.

Measure 3 Beat One Beat Three Beat Four Beat Two SWING GRID: NO SWING The straight and triplet grids are fixed grids. You cannot move or change the gridlines. 3.1.00 3.2.00 3.3.00 3.4.00 This is not the case with the swing grid. With the swing grid you can move offbeat notes out of their straight positions. To do this you use the strength slider at the bottom of the MIDI Editor window: SWING GRID: 50% SWING You can see this in the example to the right. In the bottom half of the graphic the **strength slider** has been set to 50%. This has swung the off beat grid half way to the right. You use the slider so that the swing grid matches the swing



When you select the swing grid the strength slider appears at the bottom of the MIDI Editor.



rhythm in your audio track.

### THE SWING GRID: IN DEPTH

Set the swing grid to author swing notes. Use the quantize button to move selected notes with the swing grid.

3

Strength:

On the right is an 8th note beat with an 8th note swing grid.

At the moment the rhythm is **straight.** The time between beats and notes is the same.

Notice that the swing grid looks a little different than a regular straight grid:

- The swing grid has grey ball markers on the offbeat notes:
- At the bottom of the MIDI Editor there is a swing strength slider:

SWING STRENGTH

Move the strength slider to adjust the swing grid to the left and right.

Tip: You can also enter values in the text box between -100 and 100%. A value of zero resets the swing grid to a straight grid.

### SWING BEATS

You can find 8th note swing beats in traditional jazz.

In other genres of music the swing is mostly applied to 16th note rhythms.

The slider moves the swing grid

This allows you to **swing** notes

out of their straight rhythms.

lines to the left and right.

The dark **grey arrows** show the range of movement for swing notes in the MIDI Editor.

%

0

3.4

By default the swing grid does not move any notes on the grid.

### AUTHORING

8th Note Swing Grid

3.3

3.2

To author swing notes move the swing grid to match the swing notes in your song.

Turn on **Snap** in the MIDI Editor and draw swing notes on the swing grid to match the music.







Quantize Ev	vents	Ŧ×
Settings:	Use grid $\checkmark$	Bypass
Quantize:	Selected notes $\checkmark$ Position	~
Strength:		100 %
Fix over	faps Commit OK	Cancel

### MOVE WITH GRID

If you have many notes that you want to move with the swing grid use this option.

To the left, the swing grid has been set to 50%.

Notice that only some of the **off beat** notes have been moved with the swing grid.

To move notes with the swing grid first select them. Then click the **Quantize** button in the MIDI Editor toolbar.

In the **Quantize Events** window use the following settings:

- Settings: Use grid
- Quantize: Selected notes and Position
- Strength: 100%

Do not close the Quantize Events window. Now use the **Strength** slider to change the position of the selected notes.

To move all notes (instead of selected notes) set **Quantize** to **All notes**.

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### THE COLOR DROP DOWN MENU: PITCH

The color drop down menu provides MIDI note information using color.



### PITCH

Pitch is the default option in the color drop down menu. It shows the note colors for instruments in the MIDI editor.

This is the setting that you will use most of the time.

### VELOCITY

All notes in the MIDI Editor have a velocity assigned to them. The default value is 96.

When you view notes by their velocity, their color will change.

**Note**: You only need to change note velocity in special situations.

### CHANGE VELOCITY

Follow these two steps to change the velocity of note(s):

- Select note(s) and then right click them
- Navigate through the Note velocity context menu to set a new value



Velocity 96

### NOTE VELOCITY

Trill and tremolo markers need a velocity between 41 - 50 to work on Expert and Hard.

Expert only trill and tremolo markers have a velocity of 96.

The graphic to the left shows the same trill viewed by Velocity.

The trill notes have a velocity of 96. But, as you can see, the trill marker has a different velocity.

The velocity of the trill marker is set to 50 so that it works on the Expert and Hard difficulties.

To set the trill marker to only work on Expert change the velocity back to 96.

Do not use a note

velocity of 40 or lower.

If you do Magma will

report a note spacing

your project.

error when you compile

Velocity is used on trill and tremolo markers.

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н

COLOR: VELOCITY

THE COLOR DROP DOWN MENU: VELOCITY





Your tempo map keeps your MIDI notes in time with the song audio.

In this chapter you will learn:

- The differences between different tempo mapping methods
- The elements that make up a tempo map
- Tempo map and beat track limitations
- How to import audio
- How to scrub audio and use a separated drum waveform
- How to tempo map the count-in and first song measure
- How to render your song for audio separation
- How to change the time signature

We start with the Q and T method found in the official RBN/ C3 documentation. We end the chapter with a brief look at the Scroll and Timeline tempo mapping methods.

To make tempo mapping easier I recommend that you use separated drum tracks. It is not difficult to do, and this chapter includes the first steps!



Always tempo map to the drum track if there is one.



10.2.00 0:14.321 0:14.036 0:15.070 11.1.00 0:15.070 0:15.445

11.2.00

### INTRODUCTION TO TEMPO MAPPING

An accurate tempo map is the most important part of your custom song.

#### OVERVIEW

In the last few chapters we've covered a lot of ground. We talked about time signatures and counted musical time. We also talked about the MIDI grid and common note values. In the next few chapters we build on this knowledge to learn how to tempo map.

Tempo mapping is a repetitive process that marks the rhythm of a song. Its purpose is make sure that your MIDI grid lines up with the beats in your song.

I recommend that you start with a song that has a simple drumbeat. This is because you will likely have a downbeat at the start of each measure. This has a few advantages:

- The downbeat will be regular and predictable
- You will most likely be tempo mapping kicks \*
- You can place one tempo marker per measure

If you follow this advice you should find that your first song is not too hard to tempo map.

Having said that you should be aware that some genres of music can be harder to tempo map than others.

Electronically produced songs, for example, should be easy to tempo map. They typically have a consistent tempo and a downbeat at the start of each measure.

Other songs will need more work to create an accurate tempo map. This applies to bands that record with, and without, a click track.

Take punk rock for example. Part of its character is simple beats with a more chaotic performance. The resulting variations in tempo can make it harder to tempo map. Compare this to progressive rock. Here you can expect tighter time-keeping but that does not mean a perfect performance. The tempo may still vary from measure to measure. On top of that you may have to deal with complex rhythms, tempo changes, and odd time signatures. You may not have a downbeat at the start of each measure either.

There are many things that can make tempo mapping more (or less) challenging. So pick your first song accordingly!

> \* Downbeats in simple drum patterns are usually kicks or hi-hats.

### AUDIO QUALITY

You should use the highest quality audio that you can for your custom songs.

For most people this means ripping music from a CD or using an .mp3 file.

To rip music from CD you can use Windows Media Player. It outputs audio to the .flac and .wav file formats.

I use .flac files because they are good quality and take up far less space than .wav files.

If .mp3 is your only option make sure that you use the highest quality that you can:

- 320 kbps highest quality
- 256 kbps high quality
- 128 kps low quality

Do not use music from potentially low quality sources such as YouTube music videos.

### SEPARATED AUDIO AND TRANSIENTS

Separated audio is highly recommended for tempo mapping. It will give you clear transients to work with.

Transients are short bursts of energy that you hear at the start of a sound. You can see this burst in the example waveform on this page.

Clear transients like this are easier to tempo map:

- Place a tempo marker at the start of the transient, or
- Adjust the MIDI grid so that it lines up with the start of the transient, and place a tempo marker

Common transients that you will encounter include:

- Kick drumSnare hit
- Pick attack on guitar strings

**Note:** You should always focus on the drums when tempo mapping. If you do not have a drum track to tempo map you can use transients from other prominent instruments.

In the next topic we will discuss different tempo mapping methods. You will see that there are several methods that you can use to tempo map.



**∢∕∕} -**∿⊱

### TEMPO MAPPING METHODS

There are several tempo mapping methods to choose from.

#### THE Q AND T METHOD

This is the method outlined in the Rock Band Network (RBN) documentation. It is the main focus of this chapter:

- Q is used to tempo map measures
- T is used to tempo map a measure and change time signature

#### Pros and Cons:

- Good for songs with a steady downbeat at the start of each measure
- Difficult to fix mistakes
- Not compatible with the timeline method

### ADVANCED TEMPO MAPPING

AUTHOR RECOMMENDED

With this method you place **project markers** and tempo map between them:

- Press M to place markers
- Press Shift + Q to tempo map between markers

#### Pros and Cons:

- Tempo maps beats or downbeats
- Good for songs that slow down or speed up
- Easy to fix mistakes
- Good for simple or complex songs
- A custom action is required

This is a flexible method. Beats can be tempo mapped with a temporary time signature such as 1/4 or even 1/8.

### THE SCROLL TEMPO MAP METHOD

With scroll tempo mapping you stretch or shrink the grid to match the audio waveform:

- Use the mouse wheel to stretch or shrink the grid
- Place tempo markers with Q and T or place Markers and tempo map with Alt + Q

#### Pros and Cons:

- Quick visual method
- Can map between a marker and the play cursor
- A custom action is required
- Separated audio is required

This is a flexible and intuitive method. It maps in a forward direction so that you can see where tempo markers need to be placed (pages 221 — 222).

### THE TIMELINE METHOD

This method uses the tempo envelope to stretch and shrink the grid to match the audio:

- Adjust the tempo envelope to stretch or shrink the grid
- Shift click in the timeline to create a tempo marker

#### Pros and Cons:

- Quick visual method
- Erases Q and T method tempo maps
- Restricted to one time signature
- Separated audio required
- The downside of this method is that the vertical size of the Master track needs to be very large. This allows for fine control over the size of the MIDI grid when adjusting the timeline. See pages 223 – 224.



### FINDING BEATS AND DOWNBEATS

There are two ways of finding beats and downbeats in your audio track(s):

- Tempo mapping the audio waveform, or
- Scrubbing the audio

Tempo map transients in one of the following ways:

- Tab to transient (recommended)
- Click to position the play cursor on the transient
- Use the scroll method to align the MIDI grid with transient(s)
- Use the timeline method to align the MIDI grid with transient(s)

To scrub, drag the play cursor slowly back and forth through the audio. Listen for beats or downbeats. This can take a bit of practise until you gain confidence. Refer to the **How To Scrub Audio focus page** if you need to. See pages 195 — 196.

Tempo mapping to the waveform **requires stems or separated audio**. This gives you a clean waveform to work with and transients to tempo map.

Scrub audio
 Map waveform
 Grid to waveform
 Timeline & grid to

## TEMPO MAP OVERVIEW



Hi-hat audio samples are the default song count-in.

s are theThe first two measure are setn.aside for the count-in.



The song audio starts at measure three.

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# TEMPO MAP LIMITS



### TEMPO MAPPING STEPS

You can complete a tempo map in five steps.

### ΤΕΜΡΟ ΜΑΡ **OVERVIEW**

Follow these steps to set up your tempo map.

Your goals are:

- A count-in for players
- A matching tempo for the count-in and first song measure
- Regular tempo markers (so that the MIDI and audio are in sync)

### SET YOUR SONG BPM

The first step is to use an online BPM finder to find the general BPM for your song. For example:

https://songbpm.com

Edit the first tempo marker (at the start of your project) and set the BPM for your song.

Set Project Timebase

Press Alt + Enter

Set **Timebase** to

to Time:

Time

Click OK

#### **IMPORT & POSITION** SONG AUDIO

Import your song audio into the SONG AUDIO track. Then fine tune the position of your audio:

- **Scrub** the start of the song to find the downbeat
- Turn Snap off
- Reposition the song audio so that the downbeat is at measure 3.1 \*

\* High tempo songs may require a three or four measure count-in.

This will delay your audio and count-in by a measure or two (see page 202, step 4).

### TEMPO MAP THE STARTING MEASURES

Tempo map the count-in measures:

 Place tempo markers at measures 2.1 and 3.1

Tempo map the first song measure:

**Scrub** through the audio to find the **next downbeat** and place a tempo marker

Compare the first song measure BPM to the count-in BPM. If the BPMs do not match:

- Change the project Timebase to Beats (position only)
- Copy the BPM from measure 3.1 to the tempo markers at measures 1.1 and 2.1
- Reposition the song audio so that the first downbeat is at measure 3.1

#### FIX THE COUNT-IN SAMPLES

Make sure that the count-in samples are in their correct positions:

- Turn Snap on
- Move samples to measures 1.1, 1.3, 2.1, 2.2, 2.3, and 2.4

To make count-in audio

samples automatically

changes see page 133.

adjust to song BMP

Place a new tempo marker on the **downbeat** at the start of each new measure

TEMPO MAP THE

continue tempo mapping:

Tempo map the rest of the

back to **Time** 

song:

**REST OF THE SONG** 

Reset the Project Timebase to

Change the project Timebase

In most cases one tempo marker per measure is enough.

TEMPO MAPPING 189

### **IMPORT AUDIO**

Follow these steps to import your custom song audio.

Load the C3 Template:

- Click File > Project Templates > C3 Custom RB3 Template
- Click the **SONG AUDIO** track

The SONG AUDIO track will be highlighted in white.



Move the play cursor to the start of the timeline:

2

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- **Click** in the **timeline**
- Press the **Home** key

Half of the play cursor will be visible at the start of the timeline.

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O PART	BASS	1/0	M	Ms	4			
	GUITAR	1/0	M		5			



Drag and drop your audio file into REAPER:

- Open Windows Explorer
- **Browse** to your audio file
- Drag and drop your audio file into the SONG AUDIO track

Make sure that the start of the audio file is at measure 3.1.

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Resize the SONG AUDIO track to see the waveform of your song:

- Position your mouse at the bottom of the SONG AUDIO track
- Click and drag the resize **arrow** down to adjust the track height

# SET BPM AND POSITION AUDIO

1

2

Find the BPM for your song at a site like: **https://songbpm.com**.

 Search for your song and find the BPM

In REAPER edit the time signature marker at measure 1.1:

 Double click the time signature marker

Tip: The time signature marker is the white box with the letter T inside it.

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O SONG	AUDIO	1/0	-inf	MS	1			
O COUNT	IN	1/0	-inf	MS	2			
O PART I	DRUMS	1/0	-inf	MS	3			
O PART E	BASS	1/0	M	MS	4			
		1/0	M		5			

The Edit Time Signature Marker
window will open:

- Type your song BPM into the BPM field
- Click OK

[The default BPM is 120].

**Note**: The default Time Signature is 4/4. If you need to set a different time signature:

- Check the Set Time
   Signature checkbox
- Adjust the Set Time
   Signature text boxes values

🔊 Edit Tin	ne Signature Marker	$\times$
BPM:	120	
Position:	1.1.00	
	Gradually transition tempo to next marke	er
	Set time signature: 4 / 4	
	OK Cancel	



Move your song audio:

• Turn off snap in the main toolbar



- Click and drag your audio track
- Move your song audio to the start of measure 3.1

 W Customs Book - Tempo Map [modified] - REAPER v4.22 (Licensed for personal/small business use)

 File
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 [Remove loop/time selection]
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Find the downbeat and reposition your song audio:

4

- Click and drag the play cursor to scrub the song audio
- Find the first downbeat at the start of the song
- Click and drag your song audio so that the first downbeat is at measure 3.1

Review the next two topics before you start to tempo map. You will learn how to scrub audio and tempo map a separated audio waveform.

# HOW TO SCRUB AUDIO

You can scrub through your audio to find the downbeat. Use this method if you do not have Al generated stems.

When you scrub audio you hear a very short loop of sound. The sound lasts 0.06 of a second before it repeats.

The loop starts 30 ms before the position of the play cursor. It ends 30 ms after the position of the play cursor. This is shown in the graphic with blue shading either side of the play cursor.

To scrub through audio click and drag the play cursor.

Your mouse cursor will change to a hand icon. Slowly move the play cursor left and right.

Search for the **downbeat at the start of the measure**.

When you tempo map, always give priority to drums. Search for the moment where the kick pedal hits the kick drum. Or when the drum stick hits the snare or hi-hat:

 The kick drum hit has a rapid beating sound with a low pitch

- The snare has a higher pitched, precise hit
- Hi-hats can be more difficult to pick out (depending on the mix)
- Crash cymbals are often paired with kicks.

Most of the time you may be able to tempo map using just kicks. Sometimes you may need to tempo map snares.

For example, the song on the right starts with quarter note kicks. The orange dotted lines show the downbeats.

> See pages 65 — 66 to configure scrub settings in REAPER.



A PROFILING & ANA DRAF BAR

### TAB TO TRANSIENT VS WAVE-FORM PEAKS VS SCRUB

What is the best way to tempo map your song when using AI generated stems?

This topic assumes that you are using AI drum stems. With that out of the way, our general rule of thumb is to tempo map the downbeats. This means that we place one tempo marker at the start of each measure. (We can always add extra tempo markers later if we need to).

Most often we are going to be tempo mapping kicks on each downbeat, and there are a few ways to do this.

If you read the RBN Docs, they will tell you to use the **tab to** transient function in REAPER. This function moves the playhead from one transient to the next. When you get to the downbeat you create a new tempo marker.

Our goal here is to tempo map the attack of the beat. This is that moment when the drum beater, or stick, hits the drum.

Note: There is a difference between when the drum is hit and when the hit is at its loudest. The loudest part of the waveform is the peak (the tallest part). We do not want to tempo map the peak of the waveform.

In this topic we compare the tab to transient method against a couple of other options:

- **scrub** the downbeat audo to find the hit
- tempo map the **peak** (loudest part of the waveform)

We will see which option is the most consistent for tempo mapping the attack of the beat.

Note: The zoomed in screenshots are not zoomed to the same level.



Kick is tempo mapped colse to first transient peak.



Zoomed in view. The tab to transient and scrub are all the within 4ms of the DLC tempo marker. The peak is +16ms.





first transient peak.



Zoomed in view. The tab to transient and DLC tempo marker are the same. My audio scrub is +3 ms. My peak tempo marker is + 8ms.

Zoomed in view. The scrub marker is +5ms and the peak is +14ms. The tab to transient marker is +6ms after the DLC tempo marker.

As you can see, the peak tempo mapping method is always late. (It takes time for the hit to reach its loudest volume.) The degree to which it is late depends on the waveform.

My audio scrubbing was closer to the mark, but still variable. compared to the hit of the beat.

The Tab to transient markers are in the ideal spot in each of these examples. I recommend that you use the tab to transient function with AI drum stems to tempo map.

For consistent and accurate results use the tab to transient tempo mapping method.

### TEMPO MAPPING FLAMS

### HOW TO USE THE TAB TO TRANSIENT METHOD

downbeats with AI drum stems.

Use tab to transient to tempo map beats or

### The tab to transient method is not always the right choice when tempo mapping flams.

A flam is a combination of two strokes with the sticks:

- A grace note followed by a main note.
- The drums sticks should not hit at the same time.
- The two hits must be close enough that they almost sound like a single hit.

Below is an example waveform for a snare flam:



Flams can be tempo mapped as follows:

- On the first hit, or the main hit
- Between the two hits

How you tempo map a flam depends on which note the drummer intends to be the main beat.

Tempo marker

(Grace note)

Bar line

For example, flam [1] is a hit at

lines up with the rest of the hits

the end of a roll. The first hit

Flam [2] shows a bar line

between hits. This flam is

on the main hit.

between tempo markers at the

Flam [3] shows a flam mapped

start and end of the measure.

in the roll.

Tempo marker (Main note)

### **Tab to transient** is a default action in REAPER.

To use tab to transient:

 Click your drum stem audio track \*



\* Make sure that you click the audio track and not the track control panel on the left. (If you do not select the audio track, the action will not work).

 Position the playhead in the silence at the start of the audio waveform.



#### Press the Tab key.



The playhead will move to the first transient. (We will assume that it is a kick for this example).

Place a tempo marker.



- Keep pressing the Tab key until you reach the next downbeat.
- Place the next tempo marker.

**Note**: The vertical red line represents the play head. The vertical orange lines represent tempo markers.

#### You can use this method with the Q and T tempo map method or the advanced tempo mapping method. I recommend the later.

If the drum track is simple, you can tab to the next downbeat transient quite quickly.

If the drum part is more complicated it can be tedious to press tab many times to get to the next downbeat. In this case you can click ahead in the audio track and then press tab to reach the downbeat.

## COUNT-IN OVERVIEW

When a song does not have a count-in, you need to add one.

A standard count-in is **two** measures long.

It is counted in the typical style:

 One ... , Two ... , One, Two, Three, Four

The **hi-hat samples** included with the C3 Template are commonly used for the countin. You can use other samples if you would like.



The count-in tempo should match the tempo of the first song measure.

This helps players know when to expect the first hit of the song in the game track.

Notice that in this screenshot the count-in and first song measure have the same tempo.







Some songs may include a partial count-in of their own.

For example, if the drummer plays a short one beat fill before the song starts. In this case the count-in would be:

 One ... , Two ... , One, Two, Three

The "Four" would be the fill leading into the song.

To the left is a full count-in with a half beat fill. Choose the count-in that works best for your situation.

- In game it takes **three seconds** to show and remove a player's gamertag. This means that faster songs need a longer count-in:
- > 160 BPM use three measures for the count-in
- > 210 BPM may need a four measure count-in

**Note:** There should **never** be any notes earlier than **2.5 seconds** in any song.

The screenshot to the left shows examples of 120, 160, and 210 BPM count-ins.

### TEMPO MAP THE FIRST THREE MEASURES

The next step is to tempo map the count-in measures and the first song measure.

First, tempo map measure one:

Enable Snap



- Click at measure 2.1 in the timeline to position the play cursor
- Press the Q key



Next, tempo map measure two:

- Click at measure 3.1 in the timeline to position the play cursor
- Press the Q key
- Press the Esc key to deselect measure two.





Tempo map measure three:

Turn Snap off



- Scrub through your song audio and locate the first downbeat
- Press the Q key

- Check the first song measure with the metronome:
- Enable the **metronome**
- Press the Spacebar to start and stop playback

The clicks of the metronome should match the beats of the first song measure.

### CHECK COUNT-IN VS FIRST MEASURE BPM

Compare the BPM at measure 3.1 to the count-in:

- Count-in 160 BPM
- Measure 3.1 152.831 BPM

Let's fix it so that they both have the same tempo.

**Note:** You can get away with small differences in BPM. Just make sure that the difference between the two BPMs is not noticable.



Copy the BPM from the first song measure:

 Double click the tempo marker at measure 3.1

The **Edit Time Signature Marker** window will open:

- Select the BPM
- Press Ctrl + C

Close the Edit Time Signature Marker window:

Click OK





Set the Project Timebase to **Beats (position only)**:

Press Alt + Enter

The **Project Settings** window will open.

- In the Timebase for items/ envelopes/markers drop down:
- Select Beats (position only)
- Click OK



Edit the count-in tempo markers:

- Double click the measure 2.1 tempo marker
- Select the BPM
- Press Ctrl + V
- Click OK
- Repeat the above actions for the measure 1.1 time signature marker also

Your first three tempo markers now have the same BPM.

### SONG AUDIO / COUNT-IN SAMPLES

Fine tune the position of your song audio again:

- Click and drag the play cursor to find the first downbeat
- Click and drag your song audio so that the first downbeat is at measure 3.1



Turn **Snap on** and change the project **timebase** back to **Time**:

2



Press Alt + Enter

The **Project Settings** window will open.

In the Timebase for items/ envelopes/markers drop down:

- Select Time
- Click OK

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Click and drag the audio samples to the following points on the timeline:

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1.3

2.1

2.2

2.3

**2.4** 

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Your count-in and first song measure should now be perfectly in sync!

> You can now render your audio track for music separation.

This will allow you to tempo map to a separated drum track.
# PREPARE TO RENDER AUDIO (OPTIONAL)

In REAPER we "render" audio to export it. In the Render options you can choose to render the:

- **Entire Project**, or a
- Time Selection

If you render your entire project, you can end up with exported audio that is too long.

For example, here the PART DRUMS track is extended to 2 minutes and 52 seconds.

This means that our rendered audio file will be 2 minutes and 52 seconds long.

The problem is that the song ends at 2 minutes and 32 seconds. Our rendered audio will be twenty seconds too long.

The song length displayed ingame will be very different than the actual song length.

**Note**: To review the [music\_ end] and [end] text events see pages 637 — 638.







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To fix this issue:

 Make sure that all your tracks all end together promptly after the [end] event

The rendered audio is now 2 minutes and 36 seconds long.

**Note**: It is always good practice to end your tracks correctly.

To render audio that is the correct length:

 Make a selection in the timeline from the start to the [end] event

Turn th your so <b>Time S</b> of <b>Enti</b>	ne page to render ong audio. Render <b>delection</b> instead <b>re Project:</b>
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Render:	Master mix 🗸

Render bounds

Time selection

209

Start: 0:0

# RENDER AUDIO FOR AUDIO SEPARATION (OPTIONAL)

**Do not** render audio until you have tempo mapped the count-in and first song measure.

This ensures that your separated audio files line up with your custom song audio.

Open the **Render to file** window:

Click File > Render

Shortcut: Ctrl + Alt + R

The **Render to file** window will open.

Choose the **Render Song Audio** Preset:

Click the Presets button

In the pop-up menu click:

 All Settings > Render Song Audio

**Note**: To create this preset, see pages 67 — 68.







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Confirm your save settings and render your audio file: \*

- \* To render a selection: Click the **Render bounds** drop down menu and select **Time Selection**
- Set the output directory
- Set the file name
- Click the **Render 1 file** button

The Render window will open and process your audio:

Click the **Close** button

Turn to chapter 8 to learn how to separate tracks from your rendered audio file.

# IMPORT SEPARATED TRACKS INTO REAPER (OPTIONAL)

Create new tracks for your separated audio. (New tracks appear under the currently selected track):

 Select your SONG AUDIO track

Create new tracks:

Press Ctrl + T

Repeat the last step until you have a new track for each separated audio track.



Move the play cursor to the start of the timeline:

- Click in the timeline
- Press the Home key

Half of the play cursor will be visible at the start of the timeline.





 Image: Solid AUDIO
 Image:

Drag and drop your separated audio files into REAPER:

- Open Windows Explorer
- Browse to your separated audio files [C:\Demucs]
- Drag and drop your audio files one at a time into the empty tracks
- Make sure that the start of each audio file is at **measure 1.1**.

Your separated audio tracks now line up perfectly with the start of your SONG AUDIO track.

> Your separated drum track is now ready for tempo mapping!

# SOLO THE DRUM TRACK

If you are using separated audio, organize your tracks:

 Resize your SONG AUDIO track to make it smaller

Solo your separated drum track:

 Click the yellow S button in the track controls

Make the drum audio track larger:

 Resize your separated drum track so that you can clearly see the waveform

You should be able to see the rhythm of the song in the separated drum track.

For example, to the right you can see an enlarged section of the waveform:

■ Kick, snare, kick

You should be able to identify **kicks** and **snares** in your own separated drum waveform.









Set a comfortable zoom level for tempo mapping. About three or four full measures on screen works well.

- Press the Tab key to advance the play cursor one measure at a time
- Tempo map one measure at a time

Note: Check that waveform transients between tempo markers are in sync. Add additional tempo markers if they are needed.

A few things to note:

- For non-electronic music expect some tempo variation between measures
- Some songs may have faster and slower sections
- Drum fills are often a little faster than the rest of the song. (See the blue measure on the left)

Turn the page to review the **tempo mapping process.** 

# TEMPO MAP THE REST OF THE SONG

Tempo mapping is a repetitive process. You repeat a few actions over and over, until your tempo map is complete:

- Find the downbeat
- Press the Q key
- Repeat the above steps

Let's break each step down.



Choose one method below:

- A). Scrub through your audio to find the downbeat at the start of each measure:
- Click and drag the play cursor through your audio
- Position the play cursor on the downbeat
- B). Tab to transient method: \*
- Click **Tab** until the playhead reaches the next downbeat
- \* Requires separated audio or stems.







Tempo map the measure:

Press the Q key

The measure is **highlighted** and there is a **new tempo marker** at the **end of the measure** 

The **play cursor** returns to the **start** of the tempo mapped measure.

- To advance the **play cursor** towards the **next downbeat**:
- Press the Shift + Tab key two times

The play cursor will advance to the next measure on the grid. **Note**: The distance moved depends on the tempo of the previous tempo marker:

- Tempo map one measure at a time
- Regularly check your tempo map with the metronome

### TEMPO MAPPING

219

Press Shift + Tab key two times

the next downbeat:

Move the **play cursor** to look for

Notice that the play cursor has advanced three beats (one 3/4 measure). This depends on the BPM of the previous tempo marker, and the previous time signature in the timeline.

# CHANGE TIME SIGNATURE

Follow these steps if you need to change time signature.

In this example we will change the time signature to 3/4:

Find the **downbeat** 

In the example on the right the tempo is constant. There are three quarter note divisions between the last tempo marker and the play cursor.



Create a new tempo marker:

Press the T key

The **Edit Time Signature** dialogue will open:

- Change the time signature to 3/4
- Make sure that Bars is set to 1
- Click the **OK** button







# THE SCROLL TEMPO MAP METHOD

The scroll tempo map method works forward from the last tempo marker. You use the scroll wheel on your mouse to make the MIDI grid larger or smaller. To begin:

- **Double-click** on a MIDI track to open it
- Make your audio track larger so that you have a good view of the waveform

In this example the PART DRUMS track is open. The audio is a separated drum track.

Position your mouse pointer:

 Put your mouse pointer in the BPM box area in the Transport Bar

To adjust the MIDI grid in large increments:

- Press and hold the **Alt** key
- Roll your mouse scroll wheel back and forth

For smaller adjustments:

 Press and hold the Ctrl key instead





8	- <b>M</b> MA- <b>M</b> MA	M	••••••••••••••••••••••••••••••••••••••	Mm.	•
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	169 111	411.1.50	412	412.1.50	413



Move the scroll wheel and align the MIDI grid to the transients in your audio.

### Tempo map according to your time signature:

 Use the Q or T shortcuts to tempo map measure by measure

It should be clear when the MIDI grid and transients no longer match.

Custom action name: Scroll Tempo Mapping Markers: Insert marker at current position Markers: Go to previous marker/project start Time selection: Set start point Markers: Go to next marker/project end Time selection: Set end point Markers: Create measure from time selection (new time signature)...

Time selection: Remove time selection and loop point selection

You can use the advanced tempo map method with the scroll method. But this requires a custom action. Instructions are on pages 83 — 84.

We cover advanced tempo mapping in the next chapter.

221 TEMPO MAPPING

#### TEMPO MAPPING

223

TEMPO MAPPING 224

# THE TIMELINE METHOD

This tempo map method is a bit of an **all-or-nothing process**.

You cannot go back to the **Q** and **T** method if you start using this method.

This is because using **Q** or **T** erases tempo markers that you have placed in the envelope.

Resize your Master track

Make it as big as you can but leave room for your audio track.

Start from an existing tempo marker.

This can be the tempo marker you placed at **measure 3.1** or a **later tempo marker**.

 Click and drag the timeline envelope to move it up and down

The timeline grid will move left and right.

 Move the timeline envelope so that the grid matches the peaks in your audio waveform









Turn **Snap on**:



In the waveform to the left the first four beats (after the tempo marker) line up with the grid.

The fifth beat in the waveform is a little early.

In this situation you would create a new tempo marker in the envelope at beat four:

 Press and hold the Shift key and click the timeline envelope

A new tempo marker is created.

Adjust the timeline for the next tempo marker.

The **benefit of this method** is that you are **not constrained to one tempo marker per measure**.

You can place as many, or as few, tempo markers in the envelope as you need.

 Regularly check your tempo map with the metronome.

- Always tempo map the drum part (if it exists).
- Scrub mixed audio to find beats and downbeats.
- Use stems or separated drum tracks to tempo map by waveform.
- Timeline tempo markers show the BPM and time signature.
- The lowest BPM in Rock Band is 40. The highest BPM is 300.
- Do not author very short time signatures such as 1/4 or 3/8.
- Leave enough time for the count-in. It takes three seconds to show and remove the player's gamertag in-game.
- There should never be any notes earlier than 2.5 seconds.
- Make sure that the BPM for the count-in and first song measure match.
- Always tempo map according to the time signature.
- Use CAT to create the beat track when you finish tempo mapping.

# ADVANCED TEMPO MAPPING

Temporary time signatures

7

- Project markers and tempo markers
- Tempo mapping by beat

The advanced tempo mapping method lets you tempo map by beat. You can also easily fix mistakes if you need to.

This chapter builds on the previous chapter. We assume that you already know how to tempo map the count-in and first song measure.

This method is flexible and can be used for simple or complex songs. If you set up the REAPER actions on pages 79 - 82 then you are already good to go!

In this chapter you will learn:

- How to use a temporary (working) time signature
- The difference between project markers and tempo markers
- How to place project markers
- How to tempo map between project markers
- When to place more, or less, project markers
- How to replace or add tempo markers
- How to remove project markers

At the end of this chapter you will have the knowledge that you need to tempo map any song!



Always tempo map to the drum track if there is one.



# ADVANCED TEMPO MAPPING OVERVIEW

#### 123.54 1/4

The **time signature** has been changed to **1/4** (the **working time signature** for this project).

**123.54** 1/4

m

m

3.1.00

Kick

0:03.875

2

This method uses project markers to mark the position of beats and downbeats. With this method you place markers and then tempo map between them.

You can place project markers and tempo map them one pair at a time if you like. Or you can place many markers and then tempo map the group.

This method lets you use a temporary time signature to tempo map beats instead of measures. For example, the temporary time signature at measure 3.1 is 1/4.

You can use this method for any song, but it is especially helpful in these situations:

- When there are no notes on the downbeat
- When the band does not play to a click track
- When the song speeds up or slows down

3

**125.105** 

3.3.00

Snare

0:04.845

**Project markers**: Are used to mark the position of beats and downbeats in the timeline.

[2]

## 4

Hi-hat

4.1.00

m

m

0:05.815

-MA

m

**Project markers** are numbered in the order that you place them.



you can see that there is no 4 5 downbeat. The snare and hi-hat on either side have been tempo (T)127.801 **①**1: mapped instead. 5.1 4.3.00 **Note**: Take care when using 0:06.780 0:0 this method. You will need to verify the time signature and bar values as you tempo map between project markers: For example, to tempo map between measures 3.1 and 3.3 MAAN m you would use these values: m m ■ Time Signature: 1/4 Bars: 2

Ride

If you make a mistake, you can delete tempo markers and project markers and map those measures again.

If you look at measure 4.1,

To complete the tempo map:

 Replace temporary time signature(s) with the correct time signature(s)

231 ADVANCED TEMPO MAPPING

ADVANCED TEMPO MAPPING 232

# ADVANCED TEMPO MAPPING STEPS

Place project markers on downbeats or beats. Use Shift + Q to tempo map between markers.

#### ADVANCED TEMPO MAP SETUP

In the previous chapter we setup our tempo map with the Q and T method. We tempo mapped:

- The count-in, and
- First song measure

You can use the advanced tempo map method to do this if you prefer. To do this place markers, and tempo map between them.

Once you have the count-in, and first song measure set up, follow these steps.

# 1

SET YOUR WORKING TIME SIGNATURE

Edit the tempo marker at the start of your song and set your working time signature:

- Double click on the first song tempo marker
- Change the time signature to 1/4
- Click OK

These steps assume a 4/4 time signature for your song.

#### Adjust your working time signature if you need to.

# 2

PLACE MARKERS USING THE M KEY

Work through your audio and place project markers on beats / downbeats:

- Position the play cursor on downbeats and / or beats \*
- Press the M key
- Repeat these steps measure by measure

\* Use the tab to transient method with AI drum stems (p. 200) or scrub your audio for the downbeat (p. 195).

# З

BETWEEN MARKERS

When you have placed two or more project markers tempo map between them.

Turn **Snap on** and **click** on your **first marker**:

Press the **Shift** + **Q** keys

The **Edit Time Signature** dialogue will open:

- Change the time signature to your working time signature
- Count how many **beats** there are in **the timeline selection**
- Change the number of bars to the number of beats in the selection
- Click OK

# 4

WORK FASTER WITH MANY MARKERS

You can place project markers one at a time and tempo map between them if you would like.

To work faster you can place many markers. Then "spam" through the Edit Time Signature dialogue step:

- Press the Shift + Q Keys
- Press the Enter key

You can repeat these two actions very quickly.

> **Note**: Do not spam this action without care. If the tempo map suddenly goes out of sync you will need to tempo map some measure(s) again.

You may need to also change your **working time signature** if the time signature changes. For example, if your time signature changes from 4/4 to 7/8.

> Pay attention to your tempo envelope as you tempo map.

Sudden changes may indicate that something has gone wrong.

# SET A TEMPORARY WORKING TIME SIGNATURE

Change the **time signature** at the start of your song:

 Double click first song tempo marker



The **Edit Time Signature** dialogue will open.

- Change the **time signature** to **1/4**
- Check the Set time signature checkbox
- Click OK

Note: If your time signature is based on eighth notes change the time signature to 1/8.





Notice that the **timeline** now shows each **beat** as being **equal to one measure**.

# PLACE PROJECT MARKERS

0149.791 04.1.00 2:28.800

Place project markers for your tempo map:

- Use tab to transient method or Scrub audio for beats / downbeats
- Press **M** to place a marker
- Use Shift + Tab to move the play cursor to the next beat if you are scrubbing audio.

Otherwise press **Tab** to advance the playhead to the next downbeat (tab to transient method).

Place as many (or as few project markers) as you need to **tempo map** your song **accurately**.

Here one marker every four beats works well.

Regularly check your tempo map with the metronome.

Add more markers if your tempo map looks or sounds out of sync.



949 T) 149.83

<u>95.1.00</u> 2:30.403 95.3.00

S Edit Time Signature

ОК

Time signature: 1 / 4

Bars: 4

Tempo: 149.830 BPM

Cancel

96.1.00



In this example tempo markers were needed on each quarter note beat. This is because the song slows down during this measure.

> Do not place more than one marker per beat. It is wasted effort on your part if you do.

In this final example there are two working time signature changes:

- 1/8, followed by
- 1/4

This allowed the snares in this section to be tempo mapped.

As you can see, with advanced tempo mapping you can **place tempo markers exactly where you need them to be**.

# TEMPO MAP BETWEEN PROJECT MARKERS

2

5.1.00

🕥 Edit Time Signature

Tempor

OK

150.606 BPM

Cancel

4

With your project markers placed, the next step is to tempo map between them:

Turn Snap on:



 Click on the first tempo marker in the timeline.

Make sure you have at least one project marker to the right of the play cursor.



7.1.00

4

Tempo map between markers:

Press Shift + Q

The **Edit Time Signature** dialogue will open:

Adjust the **time signature** and **bars** values:

- Set the **time signature** to **1/4**
- Set the bars value

Set the **bars value** to the number of 1/4 note beats in your selection. Here the value is **4** 

Click OK





Tempo map between the remaining project markers.

There are **no time signature changes** and **no significant tempo changes**. This means that it is **safe to spam** the **Shift + Q** action through these markers:

- Press Shift + Q
- Press Enter

Tempo and time signature changes cause problem areas if you spam Shift + Q through them. When this happens the tempo and timeline will suddenly look wrong.

For example, here you can see a **problem area** later in the song.

REAPER does not know if the current selection should be one or two beats.

Notice that the **tempo** in the **Edit Time Signature** dialogue is much **lower than it should be**.

To fix the issue **change** the **time signature / bars values**:

In this example the **bars value** should be set to **2** 

# REPLACE OR ADD A TEMPO MARKER

Sometimes you may need to fix a misplaced tempo marker. In this example we will fix an incorrect tempo marker in a measure of 7/8.

Here the **misplaced tempo marker** is placed on the wrong kick. Let's fix it.

Remove the misplaced markers:Press and hold the Alt key:

 Click the tempo marker and project marker to remove them both

Set a **temporary working time signature** at the start of the measure:

 Double click the tempo marker at the start of the measure

The **Edit Time Signature Marker** dialogue will open:

- Set the working time signature for the measure
- Check the Set time signature checkbox
- Click OK









To fix the tempo map **add a new project marker** and then tempo map the measure:

- **Scrub** the **audio** for the beat
- Press **M** to place a marker

Turn Snap on:



- Tempo map both sections of the measure using Shift + Q
- Enter the correct time signature and bars values

Reset the working time signature so that the measure has the correct time signature:

 Double click the tempo marker at the start of the measure

The Edit Time Signature Marker dialogue will open:

- Set the correct time signature
- Click OK

In this case the correct time signature is 7/8.

# REMOVE WORKING TIME SIGNATURES

When you have completed your tempo map you will have one or more **working time signatures**.

They need to be edited so that you can **add the correct time signature(s)** back into your project.





It is **easy to miss** a **working time signature marker**. This can happen if:

- Tempo markers are close together, and
- The zoom level on the Timeline makes tempo markers overlap

In the screenshot you can see how a working time signature marker is hidden.

Zoom in more to reveal time signature information hidden in the Timeline.

Search through your project for working time signature markers:

 Double click each working time signature tempo marker

In the **Edit Time Signature** dialogue:

Uncheck the Set Time
 Signature checkbox



Turn the page to add the correct time signature(s) to your project.

# ADD TIME SIGNATURES

2

After you remove your temporary time signatures your project will revert to 4/4.

This is because 4/4 is the default time signature.

If your whole song is in 4/4 you do not need to add any other time signatures to the project.



.608, 2/4

Gradually transition tempo to next mark

OK Cancel

Set time signature: 7 / 8

S Edit Time Signature Marker

BPM: 98.367

Position: 6.1.00

3.367, 7/8

00

Add time signature changes to songs that have time signatures other than 4/4.

In this example the **2/4** and **7/8 time signatures** have been added. To do this:

 Double click each tempo marker where the time signature changes

In the **Edit Time Signature** dialogue:

- Check the Set time signature checkbox
- Enter the correct time signature





You must **always** make time signature changes at the start of a new measure. Time signature changes made anywhere else will break your charts.

For example, to the left you can see a song that starts with a 4/4 time signature at measure 3.1.

In the next step we are going to add a new time signature in the middle of the first 4/4 measure.

Pay attention to what happens to the second half of the first measure of the song.

You can see that the start of measure 4.1 is now at measure 3.3. The second half of the first measure has disappeared.

If you look closely you can see this corruption in the MIDI chart. You can see how squished together the measure numbers and MIDI notes are. In fact all the notes after measure 3.3 are half a measure out of sync with the song audio.

Mistakes like this can be hard to spot and will ruin your chart until you correct them.

# REMOVE PROJECT MARKERS (OPTIONAL)

2

When you **finish your tempo map** you will have **a lot of red project markers** in your project.

They can be visually distracting and make your project feel a little cluttered.

You can safely remove these markers when your tempo map is complete.

,				
1916 en alten el en	n man'ny manany ao	ere <sup>l</sup> (loceloum, li	area far dahar (pila	Maline and a second second second

To remove markers first open the **Region Manager**:

- Press Ctrl + Shift + Alt + R
- Check the Markers checkbox

You will see the list of project markers for your project.

<u>1.1.00</u> 0:00.000	20.1.00 0:30.40	0.54.408	52.4.00 1:22.808	<u>66.1.00</u> 1.44.002		137 <u>1100</u> 12:1177.6011	100.1.00 2:38.403
			Region	s (			
			Markers	s 📔 i			
drums.wav F	legion Manage	r I		7	푸	×	
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				- Hender	Markers		
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	# Nd						
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	M1 M2 M2		4.1.00 5.1.00	•	•		
in juit in	M1 M2 M3 M4		4.1.00 5.1.00 6.1.00 7.1.00	•	•		
<b>Í HALLÍNÍ</b> H	M1 M2 M3 M4 M5		4.1.00 5.1.00 6.1.00 7.1.00 8.1.00	• • • •	• • • •		
<b>i (, , <u>)</u>, ), ), ), )</b> , (, , , , , , , , , , , , , , , , , ,	M1 M2 M3 M4 M5		4.1.00 5.1.00 6.1.00 7.1.00 8.1.00	•	·		



0:00.000	0:30.403	0:54.408	1:22.808	1:44.002	2:17.601	2:38.403	
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Select the project markers that you want to remove:

- Press Ctrl + A to select all markers
- To make a **custom selection**:
- Click the first marker to remove
- Press and hold the Shift key
- Click the last marker to remove
- To remove selected markers:
- Press the **Delete** key

The selected markers will be removed from your project. This makes your project nicer to work with.

**Note:** If you later need to correct parts of the tempo map you can add markers to a section and tempo map it again.

# ADVANCED TEMPO MAPPING EXAMPLE

This example uses the **tab to transient** method. You can **scrub** you audio for the downbeat if you do not have AI drum stems.

#### OVERVIEW

In this example we are going to tempo map the kicks in three measures of 3/4.

The first and last kicks are both on the downbeat. Kicks two and three are not on the downbeat.

The kick pattern is numbered in the waveform below. As you can see kick number one has been tempo mapped. None of the other kicks line up on the MIDI Editor grid.

#### KICK ONE

The first thing we need to do is set the working time signature.

The current time signature is 3/4. To tempo map this section we need to edit the time signature and change it to 1/4:

### Double-click the time signature marker



The **Edit Time Signature** window opens:

 Check the Set time signature checkbox and change the time signature to 1/4

🕥 Edit Tir	ne Signature I	Marker	
BPM:	117.367	]	
Position:	17.1.00	]	
	Gradually to Set time sig	ransition tempo t gnature: 1	o next marke
		ОК	Cancel



#### Click the OK button

The time signature is set to 1/4:



Notice that each measure is now a quarter beat long:



#### KICK TWO

Now we are ready to tempo map the second kick:

 Press **Tab** to advance the playhead to the next beat

■ Press **M** to place a marker

Tempo map between the two markers. With snap enabled:

- Click at the start of measure
   17 (where the first marker is)
- Press Shift + Q

- REAPER highlights the area between the two project markers. The **Edit Time Signature** window opens. (See main image below):
- Check that the Time signature and bars are correct

In this case the time signature is **1/4** for **2** bars:

Click the **OK** button



# ADVANED TEMPO MAPPING EXAMPLE (CONTINUED)

#### KICK THREE

Repeat the process for kick number three:

- Press **Tab** until you find the start of the third kick
- Press **M** to place a marker

Tempo map between the two project markers:

- Click at the start of measure
   19 (the second red marker)
- Press Shift + Q

REAPER highlights the area between the two markers.

The **Edit Time Signature** window opens.

REAPER picks up the time signature from the previous measures. It also calculates that we need 3 (quarter note) bars between our two markers. This is based on the BPM of the last tempo marker:



These settings are correct:

Click the OK button



#### KICK FOUR

Repeat the process again for kick number four:

- Press Tab until you find the start of the fourth kick
- Press **M** to place a marker

Tempo map between the two project markers:

- Click at the start of measure 22 (the third red marker)
- Press Shift + Q

REAPER highlights the area between the two markers.

The **Edit Time Signature** window opens.

This time REAPER calculates that we need 4 measures of 1/4:

■ Click the **OK** button

To finish this example let's remove the working time signature:  Double-click on the tempo marker at measure 17

- Change the **time signature** from 1/4 to **3/4**
- Click the **OK** button

We can now clearly see that kicks one and four are on the downbeat:

Kicks two and three are on the three beat:



- Set a working time signature to tempo map beats instead of measures.
- Scrub your audio to find beats or downbeats. In separated audio or stems place markers at the start of transients.
- Use the M key to place project markers. Place project markers on beats or downbeats.
- Press Shift + Q to tempo map between project markers.
- When your tempo map is complete remove working time signatures.
- Add time signatures back into your tempo map as needed.
- Only make time signature changes at the start of a measure.
- Wrongly placed time signature changes will ruin your tempo map and instrument charts.
- You can remove the red project markers when your tempo map is complete.



- Pros and cons of separated audio
- Software install

8

Audio separation

# AUDIO SEPARATION

#### Audio separation software divides a song into separate tracks.

Audio separation tools single out instruments and vocals from an audio file. Some tools produce tracks for guitar, bass, drums, vocals and keys.

The results that you get from these tools is variable. A lot depends on the mix of the song and the tool that you use. In this chapter you will learn:

- The differences between mixed audio, stems, and separated audio
- How separated drum tracks help you tempo map
- The pros and cons of separated audio
- How to install and use separation tools

The tools covered in this chapter include:

- Universal Vocals Remover GUI
- Guitar Hero GUI for Demucs
- Demucs (command line with Miniconda)
- Spleeter (command line with Miniconda)

A rendered audio file from REAPER.

Audio separation software or (2) web-service.

Separated audio files. Most 3 separation models produce drums, bass, vocals and other tracks. Some models can also produce piano and guitar.







Drums.wav



Other.wav

(Guitar)



Bass.wav



Vocals.wav



Piano.wav \*

\* Not all tools or models.

# MIXED AND SEPARATED AUDIO VS STEMS

Stems are used in music production to create the final song mix. Separated audio is a bridge between mixed audio and stems.

#### MUSIC PRODUCTION OVERVIEW

The songs you listen to on streaming services, CDs, or the radio are mixed audio.

They start out as individual recordings called multi-tracks. The number of tracks needed depends on the song. There can be 20 to 100 (or more) tracks in total. These tracks are used for recording, editing and mixing.

Stems are mixes of many individual tracks. For example, a drum stem might be a mix of all the individual drum tracks. Stems often include extra effects such as equalization, compression or reverb. The number of stems typically ranges from 4 to 20.

Stems are often used to create the final mix of a song. This mix is then mastered to prepare a song for distribution.

#### STEMS VS MIXED AUDIO

Stems are what Harmonix uses to author songs for Rock Band. They are the best audio source to author from because each instrument is isolated. If you have stems to author from there are a few caveats:

- Stems must contain all the audio from the final mix
- Stems should sound exactly like the final mix of the song

Custom songs are mostly authored from mixed audio sources. This makes authoring more challenging.

It takes practice to focus on individual instruments when you can hear the rest of the band. It is also difficult to author an instrument that you cannot always clearly hear.

#### SEPARATED AUDIO TRACKS

Audio separation can help address some of these issues with mixed audio, but it is not perfect yet.

You may experience bleed between tracks or tracks that lack detail. (Bleed is when sounds from different instruments blend together).

As music separation matures these issues become less and less obvious. Many authors now make use of separated audio when they author custom songs.

> Visit rhythmgaming world.com for more info about stems:

Click Tools & Docs > C3/RBN Authoring Docs

Then click the **Audio Setup** link.

# AUDIO SEPARATION SOFTWARE

There are many tools available for audio separation. You can use a Graphical User Interface, the command line, or a web service.

#### CHOICES FOR AUDIO SEPARATION

**Demucs** is currently the best model for audio separation. It offers very good separation into four tracks (vocals, drums, bass, and other). Demucs also promises a six instrument model. This model adds guitar and piano but still needs some improvement.

Ultimate Vocal Recorder is my current software of choice. It includes demucs and can download other models. It runs very well on my M1 Mac.

UVR also offers **Ensemble Mode**. This mode uses many models at once and averages out the results to give you the best from each model.

Download UVR from: ultimatevocalremover.com

**Note:** Processing times will be long if you do not have a compatible video card for GPU processing. **Stemroller** is another popular option. I have seen it recommended regularly in the Clone Hero community. I have not personally tested this software though.

You can download Stemroller from: <a href="http://www.stemroller.com">www.stemroller.com</a>

**GH Hero Demucs** was previously recommended in this book. It offered individual drum separation with Demucs. It no longer supported and has been removed from this chapter.

**Spleeter** was previously included in this chapter and has also been removed. Spleeter has been very slow to update. As a result the community has moved onto Demucs.

#### ONLINE WEB SERVICES

At the time of writing mvsep. com offers the best range of models online. This includes:

- Demucs4 HT
- DrumSep (4–6 drum tracks: kick , snare, cymbals, toms, ride, and crash)
- MVSep Bass (BS Roformer) This model can help with hard to hear bass tracks

Mvsep has unregistered, registered, and premium plans.

Web service users should note that many sites prohibit uploading copyrighted audio.

# AUDIO SEPARATION PROS AND CONS

The results that you get from music separation software can be variable.

The results that you get from music separation software depend on the mix of the song and the tools that you use.

**Bleed** between tracks and lack of detail can be an issue. You may even experience hallucinated notes. These issues can lead to you under or overcharting parts:

- Kick drum bleed into the bass track might cause you to over-chart the bass
- Poor detail in the bass track may lead under-charting
- Lack of detail in vocal notes may cause you to underchart note lengths

Despite these potential issues there are some real benefits:

- A clean waveform to tempo map from (drums)
- A vocal track for lip-sync animation \*
- Buried sounds may be heard more easily

• Authoring is simpler with separated audio

My current recommendations are as follows:

Start off using **demucs**. It does a great job, especially if you only need drums, bass, vocals and other tracks. For demucs you can use:

- Ultimate Vocal Remover
- Demucs command line (via Miniconda)

If you do not want to

use separated audio

you do have other

from mixed audio.

options. In the next

chapter you will learn

how to use REAPER FX

to help pick out details

If you need individual drum tracks, use mvsep.

#### If you need better isolated vocals use UVR.

I try not to rely solely on separated audio for charting. Bleed from other tracks and lack of detail can still be an issue. But, as the technology improves there are less reasons to be wary of it.

\* You will need to check lip sync animations in game. Perfect results are not guaranteed.

If you chart from separated audio you should always check your charts against the full audio mix.

#### BLEED



Vocals and guitar can

bleed into each other.

#### POOR DETAIL OR **EXTRA NOTES**





Kicks can bleed into Bass tracks can lack detail. the bass track.

Guitar and drum bleed

can occassionally create hallucinated bass notes.

### VOCAL NOTE TIMING



Kicks and snares can interfere with note timing in vocal tracks



Spleeter / demucs can work well for piano.

> Keys are less likely to be separated well.

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# FULL MIX AUDIO VS SEPARATED DRUMS

Mixed audio waveforms can be very busy to look at. Separated drum tracks reveal a waveform that is much easier to work with.

#### MIXED AUDIO



Above you can see two waveforms. The first is the full mix audio from a song. Below it is the separated drum track. The dotted orange lines show the start of each measure. The mixed audio is busy to look at and it is hard to see where individual measures begin and end. In contrast the separated drum track clearly reveals the rhythm of the song. Notice that the distance between measures is mostly the same. This means that the tempo is fairly constant. The longer measure is where the tempo slows down. With a little practise it is possible to identify kicks and snare hits in the waveform. This is very helpful when tempo mapping a song. I highly recommend using separated drum tracks for tempo mapping. They are easier to navigate and use than mixed audio tracks.

# INSTALL UNIVERSAL VOCAL REMOVER

Universal Vocal remover (UVR) has an installer for Windows.

Note: The installer works on Windows 10 or higher:

- UVR is not guaranteed to run on Windows 7 or lower
- UVR may not run on Intel Pentium or Celeron CPUs
- You must install UVR to the C:\ drive. Installation on a secondary drive will cause application instability.





The installer is 1.57GB. It includes the UVR GUI, Python, PyTorch, and other required dependencies.

**Note:** Your browser may try to prevent you from downloading UVR. In this case you need to confirm that you want to keep the downloaded file.





# UNIVERSAL VOCAL REMOVER USER INTERFACE

# UNIVERSAL VOCAL REMOVER STEP BY STEP

basic UVR functions.

Ultimate Vocal Remover is not only used for vocal separation. It can separate up to six different instruments, including vocals.

#### THE UVR USER INTERFACE

The UVR user interface changes when you make certain choices. For example, the highlighted areas can change when you choose a **process method**. The user interface is not static.

This means that it can take a little longer to understand how to use UVR.

On top of this UVR has some advanced features. One such feature is the ability to download extra models for audio separation.

If you download these models you will see that your drop down menu choices also change.

With all that said, UVR is not difficult to use once you get used to it.

Select Input		
Select Output		8
CHOOSE PROCESS METHOD MDX-Net	BATCH SIZE Default ~ GPU Conversion Primary Stem Only Secondary Stem Only Sample Mode (30s)	WAV OFLAC MP3 VOLUME COMPENSATION Auto   SELECT SAVED SETTINGS Choose Option
عر	Start Processing	
Ultimate Vocal Remover v5.5	.1 [2023-09-22 09:00:28]	

#### UVR DOWNLOAD CENTER

Click the wrench icon in UVR to open the **Settings** window:



Next click the **Download Center** button (top right).

You will see a list of different frameworks. To download a model first select a framework. Click a framework radio button. Next, click the drop-down menu for that framework.

Select a model and then click the download icon:

### ⊻

Note 1: Workflow diagrams highlight the recommended models to use on pages 271 — 272.

**Note 2**: Recommended models will change over time. Review pages 273 - 274 to learn how to track new models.

#### SELECT INPUT AUDIO

Select an audio source:

- Click the Select Input button
- Browse to your source audio
- Select your audio file
- Click the **Open** button

#### SELECT AN OUTPUT PATH

Select an output:

- Click the Select Outut button
- Browse to your output folder
- Click the Select Folder button

#### SELECT OUTPUT FILE TYPE

Select an output file format. Click one of the following radio buttons:

3

WAV

Download new separation models and review

1

2

- FLAC
- MP3

I recommend .FLAC.

#### GPU CONVERSION 4 CHECKBOX

If your PC has an Nvidia graphics card then check the **GPU Conversion** checkbox. This will greatly improve processing time.

Expect much slower results without GPU conversion.

Turn the page to continue.

# UNIVERSAL VOCAL REMOVER STEP BY STEP (CONTINUED)

Select a process method, the number of stems, and output quality.

# SELECT PROCESS 5 / METHOD

#### Choose a method:

- VR Architecture
- MDX-Net
- Demucs
- Ensemble Mode
- Audio Tools

When you select a method other parts of the user interface will change. Refer to option 5A for **Demucs**. See options 5B, C, and D for **Ensemble Mode**.

Note: Demucs often provides good separation for drums, bass, vocals and other tracks. If a demucs track does not separate well, try using Ensemble Mode.

#### DEMUCS CHOOSE A STEMS

If you chose **Demucs** in step 5 then you can choose from the following options:

#### All Stems

Vocals

- Other
- BassDrums
- Guitar \*
- Piano \*

\* Install the 6 Stem demucs model for these options.

All Stems is my default choice.



Choose from the following if you selected **Ensemble Mode** in step 5:

- Vocals / Instrumental
- Other / No Other
- Drums / No Drums
- Bass / No Bass
- 4 Stem Ensemble

Stem pairs produce two audio tracks. For example, **Vocals/ Instrumental** generates a vocal track and an instrumental track. If you want a vocals only track:

 Click the Vocals Only checbox

For vocals, bass, drums and other audio tracks use the **4 Stem Ensemble** option.

# ENSEMBLE MODE C

The **Ensemble Mode Algorithm** lets you specify output quality.

For stem pairs the default is:

Max Spec / Min Spec

If you chose **Vocals/ Instrumental** in step 5B this will give you:

- High quality vocal track
- Low quality instrumental track

If you want both stem pairs to be high qaulity choose:

Max Spec / Max Spec

If you are using the **4 Stem Ensemble** option choose:

Max Step

This will give you the best result.

#### ENSEMBLE MODE D MODELS

vocal tracks.

**Ensemble Mode** will list many models to choose from. The list that you see will depend on:

- The choices that you made in the previous steps
- The models that you have already downloaded
- To select model(s):
- Click the model (the model will become highlighted)

You can find the current recommended models and workflows on the next page.

Note: Methods and models are regularly updated and developed. Use the mvsep quality checker to keep up with the most recent recommendations (see pages 273 - 274).

#### UVR TIPS AND TRICKS

Use Ensemble mode to produce high quality

**Sample Mode** will let you produce a 30 second sample. I recommended this for:

6

- Long songs
- Users without a GPU

Use this mode to preview the results for various methods and models. To use this mode:

 Check the Sample Mode (30s) checkbox

> When you are done click the **Start Processing** button to separate your audio!

To import your audio tracks into REAPER see pages 213 — 214.

# UNIVERSAL VOCAL REMOVER WORKFLOWS

Workflows are laid out to mimic the position of elements in UVR. Download models from the UVR download center.

	DEMUCS DRUM,	, BASS, VOCALS, AND OTHER WORKFLOW
Process Method:	Choose Stems:	Segment:
Demucs	<ul> <li>All Stems</li> </ul>	Default
Choose Demucs Model:	Checkboxes:	
■ V4   htdemucs	<ul> <li>GPU Conversion</li> </ul>	
	<ul> <li>Primary Stem Only</li> </ul>	

	DEMUCS 6 STEM V	NORKFLOW (INCLUDES PIANO AND GUITAR)
Process Method:	Choose Stems:	Segment:
Demucs	<ul> <li>All Stems</li> </ul>	<ul> <li>Default</li> </ul>
Choose Demucs Model:	Checkboxes:	
■ V4   htdemucs_S6	<ul> <li>GPU Conversion</li> </ul>	
	<ul> <li>Primary Stem Only</li> </ul>	

#### EMSEMBLE MODE VOCAL TRACK WORKFLOW Process Method: Main Stem Pair: Segment: Ensemble Mode Vocals / Instrumental Max Spec / Min Spec Checkboxes: Available Models: VR Arc: 7\_HP2-UVR GPU Conversion MDX-Net: UVR-MEX-NET Inst 3 Vocals Only MDX-Net: UVR-MDX-NET Inst HQ1 V4 | htdemucs ENSEMBLE MODE DRUM, BASS, VOCALS, AND OTHER WORKFLOW

Process Method:	Main Stem Pair:	Segment:
Ensemble Mode	■ 4 Stem Ensemble	<ul> <li>Max Spec</li> </ul>
	Checkboxes:	Available Models:
	<ul> <li>GPU Conversion</li> </ul>	<ul> <li>V4   htdemucs</li> </ul>
		V4   htdemucs_6s

# WHAT ARE THE BEST MODELS TO USE?

The mysep quality checker tracks how well different models split tracks into stems.

#### **MVSEP QUALITY** CHECKER

The mvsep quality checker is a tool that assesses how well different models create stems.

Users can test models against two different datasets:

- Synthetic dataset (Vocals / Instrument)
- Multisong dataset (Songs from different genres to test vocals, bass, drums and other stems)

MVSEP calculates the average SDR for uploaded test results:

**SDR** stands for Signal-to-Distortion Ration

The higher the SDR score is, the better the output from the audio separation model.

For details visit: mvsep.com/en/ quality\_checker

At the bottom of the mysep quality checker page are a couple of links: Algorithm comparison

**MVSEP RECOMMENDED MODELS** 

- mvsep.com/quality
- Algorithms mvsep.com/algorithms

The comparison page has general recommendations for:

- Vocals / Instrumental
- Bass / drums

It also lists popular models with their SDR scores for:

A low or little and			MVSE	P QUALITY	COMPARISON
Algorithm	SDR DOSS	SDR arums	JUN OTHER	JUN VOCUIS	(inverted vocals)
spleeter (2 stems)				6.8647	13.3231
spleeter (4 stems)	4.8200	6.3390	4.5362	6.7021	13.1434
spleeter (5 stems)	4.6376	6.1300	3.8689	6.5027	12.9646

#### Bass Drums

- Other
  - Vocals

The algorithms page is a great resource for looking into how various models perform.

Note: Mysep premium ensemble models are not available in UVR.

#### **MVSEP LEADERBOARDS**

Mvsep leaderboards rank models for the **Synthetic** and Multi-song datasets.

The Synththetic leaderboard has three options:

- Full List
- Single Models
- Ensemble Models

The Multi-song leaderboard has the following options:

- Bass Drums
- Other

Vocals

- Instrumental

To view the models used for each ranked entry:

 Hover your mouse over the question mark in the **Info** column

Follow these two leaderboards to keep track of the latest and best models.

					MVSEP LE	ADERBOARD
Rating	ID	Team and Algo name	Info	Ense		
1	4964	MVSep Epsophile of 4 models (2022.00.18) Weighted ensemble of MDX23C 8K FFT + MDX23C 12K FFT + Demucs Vocals 2023 + UVR MDX Voc-FT	2	+	12.4244	12.1277
2	4922	MDX23 Date added: 2023-09-18	P .	-	12.3567	12.0604
3	4670	MVSep Ensemble of 4 models (2023.08.06)	?	+	12.2528	11.9564
4	4665	MDX23C, 8K FFT (2023.08.06, MVSep.com)	?	-	12.0731	11.7773
5	4454	MDX23C, Grow 128, Hop 1024 (2023.07.13, MVSep.com)	?	-	11.7530	11.4572
6	1449	MDX-Net: 292, 496, 406, 427, Kim Vocal 1, Kim Inst + Demucs ft	?	+	11.6419	11.3653
7	1445	MDX-Net: 292, 496, 406, 427, Kim Vocal 1, Kim Inst + Demucs mmi	?	+	11.6316	11.3723
8	207	MDX-Net: UVR-MDX-NET Inst 3 + UVR-MDX-NET Inst Main + Kim_vocal_1 + Demucs: v4   htdemucs_ft - Shifts: 2 - Ensemble Algorithm: Avg/Avg	?	+	11.6177	11.2667
9	255	MDX-Net: UVR-MDX-NET Inst 3 + UVR-MDX-NET Inst Main + Kim_vocal_1 + Demucs: v4   htdemucs_ft - Shifts: 2 - Ens. Algo.: Avg/Avg Denoise: Off	?	+	11.6090	11.2588

# INSTALL MINICONDA

Install Miniconda to use Demucs from the command line.

Miniconda requires Windows 8 (64 bit) or newer.



# **INSTALL DEMUCS**

Install Demucs in the Miniconda environment.

Open Miniconda:

Click Start

Type miniconda into the search box

In the search results:

 Click Anaconda Prompt (miniconda3)



The Anaconda Prompt will open. Type the following command at the prompt to install ffmpeg:

- conda install -c condaforge ffmpeg
- Press the **Enter** key

When prompted confirm the installation:

- Press the Y key
- Press the Enter key





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17 item

File

Panes

Install demucs and PySoundFile with this command:

python.exe -m pip install -U demucs PySoundFile

Press the Enter key

Demucs will install.

**Note:** If you need to **upgrade demucs** in the future run the following command:

> python.exe -m pip install -U demucs

Create a new folder for separated audio files:

Open File Explorer

4

– 🗆 🗙

E.

8==

REAPER

2

- Browse to your C:\ drive
- Press Ctrl + Shift + N to create a new folder
- Type Demucs as the folder name
- Press the Enter Key

7 AUDIO SEPARATION

# AUDIO SEPARATION WITH DEMUCS (COMMAND LINE)

Open Miniconda and change the working directory:

- Click Start
- Type **miniconda** into the search box
- Click Anaconda Prompt (miniconda3)

At the Miniconda prompt type:

cd c:\demucs

Press the Enter key

For GPU acceleration type:

demucs

Do not press Enter

Drag and drop your rendered audio file to generate the filename and path:

- Open File Explorer
- Drag and drop your rendered audio file(s) into the miniconda window
- Click back inside the miniconda window
- Press the Enter Key







Demucs will process and separate your audio file(s).

Without GPU acceleration this may take some time. It can take up to four times the duration of the song (depending on your computer hardware).

Browse to your separated audio:

- Open File Explorer
- Browse to the following directory:

C:\Demucs\separated\mdx\_ extra\_q\[song name]

 Move your separated audio folder(s) to C:\Demucs.

Import your separated audio tracks into your REAPER project (see pages 213 — 214).
- Tempo map the start of your song before you render audio for music separation. This ensures that your separated audio is in sync with the song audio.
- Separated drum tracks have a clear, readable waveform.
  This helps to make tempo mapping easier.
- Separated audio can suffer from bleed and lack of detail.
- Take care not to over or under-chart when using separated audio files.
- Always check your charts against the full song mix when you author from separated audio.
- Separated vocals can be used for in-game lip sync animations. Check your lip sync animations in-game.



### THE FX WINDOW

### Plugins and FX are an essential part of authoring.

In chapter 1 we installed the C3 Template and the RBN Preview. This means that many useful plugins and FX are setup and ready to go!

For example, the RBN Preview is setup for your drum, guitar, bass, and keys tracks. There are also plugins in your vocal tracks that let you hear the MIDI notes that you author.

We will look at all these plugins, so that you know why they are there, and what they do. We will also look at some REAPER plugins that can help you author songs.

The list of plugins discussed is:

- RBN Preview
- Bassmanager
- ReaPitch
- Center Canceller
- ReaEQ
- ReaSynth and JS: IX/MIDI Tool II
- W1 Limiter

#### Add and remove plugins in the FX window.



# **RBN PREVIEW WINDOW**

Use the Rock Band Network (RBN) Preview window to preview instrument charts.



#### **RBN PREVIEW OVERVIEW**

The Rock Band Network (RBN) Preview window lets you review the following charts in REAPER:

- Guitar
- Bass
  - Basic and Pro drums
- Keys

.

Note: The instrument MIDI track must be open for the RBN preview to work.

The RBN preview does not highlight:

- Solos
- Strum markers
- - Keys

#### PREVIEW SKILL LEVEL

Click the current **skill** to cycle between all skills:

your preview is in sync.

Use the Time Offset value to make sure that

- Expert
- Hard
- Medium

**INSTRUMENT /** 

Click the current instrument

(mode) to toggle between

Easy

MODE

instruments:

Guitar / Bass

Pro Drums

- Trill markers
- STD Drums

#### TIME OFFSET & HOPO THRESHOLD

Use the Time Offset to sync the audio and visual elements in the preview window.

The offset should match the value found at the top right of your REAPER window:



For example, my Time Offset value is -43.

The HOPO Threshold alters when HOPOs are shown in your preview window. It is not something that you typically need to change. The default value is 170.

To change the Time Offset or HOPO Threshold:

- Click and hold the mouse on the current value
- Drag the mouse up or down to raise or lower the value

### JS: LITEON/BASSMANAGER

Bassmanager is an audio plugin that is used to boost bass levels.

This plugin was popular before music separation software became available.

Add the Bassmanager plugin to your **mixed audio** track. It boosts the bass level to make bass authoring easier.

Use the following settings:

Frequency (Hz) 90.0

9.46

0.0

- Boost (dB)
- Drive (%)
  0.0
  Muffle (%)
  15.8
- Output (dB)

This plugin is still useful when a separated bass track has very low detail. (See also **ReaPitch** on the following page).

FX Edit Options		
VST: W1 Limiter (George Yohng)		
UST: BeaPtch (Cockos)	at	✓ + Param 2 in 2 out
JS: LOSER/CenterCanceler	BassManager (plugin for boosting bass)	Edit
JS: LOSER/StereoField	Processing Stereo	
U VST: ReaEQ (COCKOS)	Spread Wide	
	Frequency (Hz)	90.0
1 Alexandre	Boost (dB)	9.46
	Drive (%)	0.0
-12-	Muffle (%)	15.8
	Output (dB)	0.0
-18-	Hipass (Hz) Off	
	Limiter On	
	Oversample (x2) Diff	
-24-		
-30-		
-42-		
-49-		

ReaPitch alters the pitch of audio tracks. With mixed audio tracks this plugin is often used with Bassmanager.

If it is hard to distinguish bass pitches with Bassmanager add the ReaPitch plugin. Then, shift the audio up one or two octaves in ReaPitch.

This will make the movement between bass pitches easier to assess.

**Tip**: Use ReaPitch by itself to help bring the kick drum out of the mix.

REAPITCH FX: Track 1 "SONG AUDIO" FX Edit Options VST: W1 Limiter (George Yohng) JS: Liteon/bassmanager VST: ReaPitch (Cockos) No preset ✓ + Param 2 in 2 out UI () ReaPitch Wet: Dry 🗹 Enabled 🛛 🗌 Solo active shifter Shift (full range): 0.00 semitones Shift (cents) cents Shift (semito semitones Shift (octa octaves Formant shift (full): 0.00 semitones Formant shift: cents Formant shift semitones Volume: +0.0 -( i )- 0.0 +0.0 -inf Add shifter Delete shifter Reset all Autocorrect master playrate changes Pitch Shift Mode Algorithm: Project Default Add Remove Stereo Note: formant adjustment not supported with all modes 0.1%/0.5% CPU 8192/9216 spls

### REAPITCH

# REAEQ

### CENTER/CANCELER

ReaEQ lets you focus in on a smaller range of audio frequencies.

All Pass

Notch

Band Pass

Band (alt)

Band (alt 2)

ReaEQ is a flexible plugin for **mixed audio**. ReaEQ can boost or cut a range of audio frequencies.

You can manually adjust frequencies by dragging nodes up, down, left, and right:



Presets are also available in the Type drop down menu:

- Low Shelf
- High Shelf
- Band
- Low Pass
- High Pass



Use the **Low Pass** preset to isolate bass frequencies. The **Band Pass** preset can be good for the kick drum.

Experiment adjusting the frequency nodes to get the results that you are looking for.

To reset your settings click the **Reset defaults** button.

Center/Canceler lets you focus on different parts of the stereo field.



Move the slider from left to right as you listen to your audio. You will notice that the audio focus will change as you do this.

Experiment with the slider to bring different parts of the song into focus.



### REASYNTH

ReaSynth adds audio cues or note pitches to

# REASYNTH AND JS: IX/MIDI TOOL II

Vocal MIDI tracks use JS: IX/MIDI Tool II to restrict the range of MIDI notes played.

ReaSynth is a very useful tool for authoring. It adds audio cues to your MIDI notes. This allows you to listen to note movement and timing as you listen to your song audio.

your MIDI notes.

In instrument tracks, ReaSynth can give each gem color a single pitch, or sound. This gives you a five tone representation of your chart. When used with the Preview window this lets you:

 View your chart and hear MIDI note cues together

I find this a very useful way to review my charts. I listen for note timing and missed or over-charted notes. I also check that ReaSynth notes mirror the movement of pitch in the song.

ReaSynth has four presets:

- Guitar / bass pitched
- Short percussion high
- Short percussion
- Vocal synth

For instrument MIDI tracks I recommend using the **short** percussion preset:

- It blends well with the song audio
- Sustained MIDI notes have a short duration
- The pitch range is easy to pick out

Add Remove

0.0%/0.0% CPU 0/0 spl

The guitar / bass pitched preset lacks subtlety. It is a bit overwhelming.

The short percussion high preset is too high in the mix for me. It does not blend well with the song audio.

Tip: Use the volume slider to adjust the volume of ReaSynth notes to your preference.

REASYNTH FX: Track 11 "PART GUITAR" FX Edit Options VSTi: ReaSynth (Cockos) VSTi: RBN Preview (RBN) 2 out 🛛 🕔 🗹 short percussio + Param Volume: -7.35 dB -1200 cent 0.0 ms 6 -63.68 dB Sustain: 0.00 0.10 Pulse width: 0.00 0.20 Triangle mix: 0.00 Extra sine mix: Extra sine tune: -19 cent

Vocal MIDI tracks have two plugins enabled by default:

- ReaSynth
- JS: IX/MIDI\_Tool II

In ReaSynth choose the **vocal** synth preset. This lets you hear the musical pitch of each MIDI note authored.

Listen to your vocal MIDI notes. Make sure that they match the original vocal performance.

Note: There are notes in the vocal chart that you do not want to hear:

- Overdrive
- Phrase Marker
- Not Displayed Percussion
- Displayed Percussion
- Lyric Shift
- Range Shift

Hearing any of these notes on top of your vocal MIDI notes is not good. This is especially true of longer notes like Overdrive or

settings that exclude MIDI notes

This is where JS: IX/MIDI\_Tool II comes in. This plugin has outside of the 5 octave vocal note range.

Phrase Markers.

Add Remove

0.0%/0.0% CPU 0/0 spls

JS: IX/MIDI TOOL II FX: Track 10 "PART VOCALS" FX Edit Options JS: IX/MIDI\_Tool II VSTi: ReaSynth (Cockos) No preset ✓ + Param MIDI ) 🕡 🔽 Modified MIDI modification gizmo Input Channel Any Note Min 85.0 Note Max 127.0 Input Velocity Min 🔲 🗕 - 0.0

The default settings are below:

Velocity Scaling(%) 100

Output Velocity Max 127

Note Min 85

Note Max 127

Pitch Reset Yes



### ENABLE AND DISABLE REASYNTH

Enable ReaSynth to listen back to your instrument and vocal MIDI notes.

To enable ReaSynth follow the steps below:

- Expand your MIDI instrument or vocal track if needed
- Click the track FX button



The FX track window will open:

 Check the VSTI: ReaSynth (Cockos) checkbox

FX Edit Options VSTi: ReaSynth (Cockos) VSTi: RBN Preview (RBN)

For **MIDI instrument** tracks:

 Select short percussion from the drop down menu

For vocal MIDI tracks:

 Select vocal synth from the drop down menu

ReaSynth is now enabled and active (assuming that you do not have any tracks soloed).



ReaSynth can be disabled and enabled in a number of ways.

 Un-check the VSTI: ReaSynth (Cockos) checkbox to disable ReaSynth

VSTi: ReaSynth (Cockos)

 Click the power button next to the FX button to disable all FX for a track: If you have an audio track soloed this adds another layer to manage:

- Solo the ReaSynth track to hear it if one or more audio tracks are soloed
- Turn off the Solo feature to mute FX / ReaSynth

You have to manage these three functions in concert with each other to control ReaSynth.

The C3 Template adds the **W1** Limiter to the SONG AUDIO track. The Limiter has two main purposes for Rock Band:

- Match the loudness of your custom to the average loudness of the Rock Band 3 on-disc songs
- Hear the quiet parts of the song above the in-game crowd noise

A limiter works as follows. It reduces audio peaks that cross a defined **threshold**. This reduces the difference between the loudest and quietest sounds. Gain is then added to bring the track volume back up. Typical settings for Rock Band customs are:

- Ceiling -0.0
- Threshold -3.7 to -8.9 \*
- \* The average volume of the final mix should be around -6.4dBFS.

The **Ceiling** sets the maximum volume for the track.

your custom. The limiter will also even out loud and quiet parts in your custom song.

Use the W1 Limiter to control the loudness of

W1 LIMITER



Experiment with the **Threshold** slider to find a good balance between loud and quiet parts.

A quieter song will need a higher threshold value. With experience you may be able to look at the audio waveform and gauge the Threshold needed.

Note: A Threshold setting of more than -7 may add too much gain to the audio. In this case use volume controls to increase the volume first. The **Release slider** controls how quickly the limiter lets go of the audio. Keep the default setting if you are not experienced in using a limiter.

This method works for single track audio or mulitracks.

To install the W1 Limiter see pages 39 — 40.

For an alternative method for **single track audio only** see pages 773 — 774.

- Use the RBN Preview window to preview your charts in REAPER. Adjust the Time Offset to sync your preview.
- Use BassManager, ReaPitch, ReaEQ, and Center/Canceler with mixed audio. These plugins can help bring out parts of the song that are hard to hear.
- Use ReaSynth to hear the pitch and rhythm of your instrument and vocal MIDI notes.
- Use the W1 Limiter to match the loudness of the Rock Band
  3 on disc songs.
- Use the W1 Limiter to balance loud and quiet parts of your custom song.

### IMPORTED MIDI

- Rocksmith conversions
- Guitar Pro MIDI

10

Fix a long or short count-in

### ROCKSMITH

#### An imported MIDI can save you a lot of time and effort.

Charting a Rock Band song by ear can be a difficult and time consuming process. Fortunately there are often other resources that we can refer to, and make use of.

In this chapter we focus on Rocksmith Customs and Guitar Pro files. Both can be excellent resources and references.

You may find that a Rocksmith conversion is easier to work with. This is because it provides a 5-lane guitar part to work from. This part will typically need some work to make it consistent and playable.

Guitar Pro MIDI files require you to translate MIDI notes to 5-lane Rock Band parts yourself. This may take some extra work on your part, but the structure of the parts should be clear.

In either case the most important consideration is the accuracy of the MIDI. You can preview Rocksmith customs in Onyx. Guitar Pro previews are available on the websites that host them.

In the final section of the chapter we look at importing the MIDI from an existing custom into REAPER.

#### DOWNLOADING CUSTOMS

- Create a Customs Forge account
- Click the Ignition4 Search link:

#### https://ignition4. customsforge.com/

Note: For PC you should download Rocksmith files with the p.psarc file extension. m.psarc files are for Mac.

> Turn the page to see how to convert Rocksmith customs into 5-lane charts.

foundation for guitar and bass charts.

Rocksmith customs can give you a good

#### **ROCK BAND 3 AND ROCKSMITH CUSTOM** CONVERSIONS

#### https://customsforge.com/

• A Rocksmith custom might be one instrument only Some notes and sections might be missing

■ You will need to check the tempo map for accuracy (and fix it if needed)

Rocksmith songs are like Rock

parts. They chart the strings and

notes played for guitar and bass

Band 3 Pro guitar and bass

and include a tempo map.

Before converting Rocksmith

customs for Rock Band, be

aware of the following:

The chart may be inaccurate

Note: The Rocksmith to Rock Band conversion is from tablature to 5-lane chart(s). A perfect Rocksmith chart and tempo map will not produce a perfect Rock Band chart. You will need to check that the

#### converted charts meet the Rock Band authoring standards:

- Does the chart feel right to play?
- Is the tempo map accurate?
- Is the chord motion correct?
- Is the note motion correct?
- Is the most prominent part charted?
- Are notes quantized to the MIDI grid?

This is not a complete list of things to check. The amount of work needed to meet Rock Band standards will vary. A good Rocksmith conversion will provide you with a solid foundation to build from.

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### CONVERT AND IMPORT ROCKSMITH CUSTOMS

Download a Rocksmith custom with the .p .psarc file extension. Next, use Onyx to convert the Rocksmith custom:

- Open Onyx
- Click the Load a song button
- Browse to your Downloads folder and select a Rocksmith custom file
- Click the **Open** button

The song will open in Onyx.

Load song			
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ $\checkmark$ Downloads	~ C Search	n Downloads	Q
Organize 👻 New folder		□ - □	
Downleads  Documents  Pictures  Pictures  Pictures  RockSmith  Song_p.psarc  Music  Videos  KCloud Drive #  Dropbox (Mz.#   This PC			
File name:			~

To preview the Rocksmith chart click the **Preview** tab. To view 5-lane chart previews:

- Click the Select Tracks drop-down menu
- Select the Autochart instrument options
- Click the **Play** button
- To convert the chart:
- Click the CH/PS tab
- Click the Create CH/PS song folder button





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¥ # ** **	Ď	 ₽§				1/160, 1/4 7 <u>1.1.00</u> 0:00.000	2.1.00 0:01.000	<u>3.1.00</u> 0:02.000	4.1.00 0:03.000	[]][1][1][2][280 []][2][2 []        5.1.00        0:04.000
SONG AUDIO	1/0	−inf	M	8	1					
O COUNTIN	I/O	-inf	м	8	2					
PART GUITAR - note	1/0	+inf	м	S	3					
PART BASS - notes	1/0	-inf	м	8	4					
PART RHYTHM - not	1/0	-inf	м	8	5					
PART REAL GUITA	1/0	-inf	м	8	6					
PART REAL GUITA	1/0	-inf	м	8	7					
PART REAL BASS -	1/0	-inf	м	8	8					
PART VOCALS - note	1/0	-inf	м	8	9					
EVENTS - notes	1/0	-inf	м	8	10					
BEAT - notes	1/0	-inf	м	8	11	_				
PART DRUMS	1/0	-inf	м	8	12		_	_	_	
PART BASS	1/0	M	Μ	8	13					
PART GUITAR	1/0	M	Μ	8	14					
PART VOCALS	1/0	M	Μ	8	15					
O HARM1	1/0	M	Μ	8	16					
DRYVOX1	1/0	M	Μ	8	17	_				
O HARM2	1/0	M	M	8	18					

- Open REAPER
- Launch Windows Explorer and then open the folder created by Onyx
- Drag the MIDI file into the C3 Template
- Note the number of source tracks shown in the MIDI file import options window. Click the Cancel button
- Select the COUNTIN track
- Press Ctrl + T to create enough empty tracks for the MIDI file
- Import the Rocksmith MIDI into REAPER:
- Click in the project Timeline
- Press the Home button
- Drag the MIDI file into the first empty track that you created
- The **MIDI file import options** window will open:
- Click the OK button

We can now start to organize our Rocksmith MIDI tracks and check for any issues.

### WORKING WITH ROCKSMITH CUSTOM MIDI TRACKS

Make sure that your RockSmith conversion meets Rock Band standards.

#### ROCKSMITH MIDI OVERVIEW

In the previous topic we imported our 5-lane Rocksmith guitar tracks. This gives us:

- A tempo map
- The song audio
- One or more 5-lane guitar parts \*

\* You may have more imported tracks than you need. There may also be some tracks that you can delete. To organize your tracks see pages 311 — 312.

With your project workspace organized we can move on to the following topics:

- Tempo map review
- Count-in
- 5-lane conversion review

#### TEMPO MAP REVIEW

Review the tempo map and count-in:

 Check that the song BPM is correct

You may find that the BPM is not correct. For example, the BPM might be double what it should be. This will impact character animations and the reductions produced by CAT. In this case you have the following options:

- Adjust the BEAT track so that it reflects the correct song BPM
- Create a new tempo map at the correct BPM

The choice that you make may depend on how good the tempo map is:

 Turn on the metronome and listen to the song The metronome and beats of the song should be in sync. If you are not sure you can visually inspect the tempo map:

- Use demucs to separate the song audio into individual tracks (see chapter 8)
- Import the separated drum track into REAPER (pages 213 — 214)
- Make sure that the peaks in the drum track line up with the MIDI grid. A gap of <20 ms is tolerable. 30 ms is a significant gap.

I recommend using the advanced tempo map method to fix tempo maps. By placing markers and tempo mapping between them you can leave the rest of the tempo map intact.

#### ROCK BAND COUNT-IN

It is unlikely that the countin will match the Rock Band standard (pages 201 - 202).

You may need to change the count-in tempo and adjust the length of the count-in. We will cover how to do this in the next topic (pages 307 — 308).

#### 5-LANE CONVERSION

The Onyx conversion often does a good job of mapping pro guitar notes to 5-lane gems.

The conversion is not always perfect though. In my limited experience I have noticed the following:

- Repeated riffs are not always charted the same
- Chords are not always charted to the same gems

#### Chords are not always consistent relative to their pitch

 Single note runs of gems are often well placed

Simple songs will experience these issues less than more complex ones. In either case an Onyx conversion can still save you a lot of time and effort.



### FIX A LONG OR SHORT COUNT-IN

2

There are a couple of ways to fix a long or short count-in. A simple method is below.

In this example the count-in is one measure at 60 BPM. The first song measure is 280 BPM.

Let's fix this issue:

- Double click the tempo marker at measure 3.1
- Select the BPM
- Press Ctrl + C
- Click OK

060 1.1.00 0:00.000	1.2.00 0:01.000	1.3.00 0:02.000	1.4.00 0:03.000	12.12.12.12280 2.1.00 0:04.000	.374 (12.1)280 <u>3.1.00</u> 0:04.857	)( <u>1</u> )2.( <u>1</u> );   <u>4.1.0(</u>  0:05.7
	lotes.mid					
				1 1 11	1 1 1	1 1 7

#### Delete the count-in measures:

Enable the Grid and Snapping:



- Click and drag in the timeline and select the count-in measures
- Right click in the Timeline.
  Select Remove contents
  of selection (moving items later) from the context menu

(T)60		Ti2 Ti2 Ti280 374	ינדן געד מאכען גע
7 <u>1.1.00</u> 0:00.000	1.2.00 0:01.000	1.3.00      1.4.00      2.1.00      3.1.4        0.02.000      0.03.000      2.1.00      0.04.000      0.04.000	00 857 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		Remove selection	ESC
		Zoom selection	Ctrl+Page Up
		Set selection to items	
		Extend selection to next transient in items	
PART GUITAR - n	otes.mid	Insert marker	Shift+M
		Create region from selection	Shift+R
·		Insert time signature marker	Shift+C
		Remove all markers from time selection	
		Set project tempo from time selection (detect tempo)	
		Set project tempo from time selection (new time signature)	
		Set project tempo from time selection (detect tempo, align items)	
		Create measure from time selection (detect tempo)	Alt+Shift+C
		Create measure from time selection (new time signature)	
		Crop project to selection	
_		Insert empty space in selection	Ctrl+Insert
		Remove contents of selection (moving later items)	





Add new measures for the count-in:

3

- Press the Home key to make sure that the Play cursor is at the start of the project
- At the start of the Timeline select the number of measures you want to insert for the count-in. For this BPM select 4 measures
- Right click in the Timeline and select Insert empty space in selection from the context menu

Tempo map the count-in:

- Create markers at measures
  1.1.00 and 5.1.00 with the M
  key. Press the Home key
- Press Shift + Q to tempo map measures 1 to 4

If the count-in and first song measure BPM do not match review pages 205 — 208.

Turn the page to continue.

### FIX A LONG OR SHORT COUNT-IN (CONTINUED)

Extend MIDI tracks back to the start of the project:

- Select your MIDI tracks
- Position the mouse cursor at the start of the MIDI tracks

The mouse cursor will turn into a resize arrow:

 Click and drag to extend the MIDI tracks back to the start of the project



Reposition track names for all MIDI tracks:

- Open each track
- Move track name text events back to measure 1.1

Make sure that you position track names correctly. Otherwise you will get Magma errors when you compile your custom song.



b 🚮 🖏 b 🎾	⊊ X) D ∎i			□ □200 374 <u>11.00</u> <u>2.100</u> <u>3.100</u> <u>4.1.00</u>
-42 -40	-18 -12 -\$ -in	f 1/0 M S 0.50dB F X U	MASTER	
	HOSTER 1/0	-inf M S	1	PART GUITAR - notes mid
PART GUITAR - notes  PART BASS - notes  PART RHYTHM - notes		-inf M S -inf M S	3 4 5	
PART REAL GUITAR - n		-inf M S center FX U -inf M S	6 1	PART REAL_GUITAR -notes.md
PART REAL BASS - note	es MRSTER VO	-inf M S center FX U	8	PART REAL_BASS notes.mid

Extend your song audio track if you need to.

Removing the original count-in changes the visual start point of the song audio:

 Drag the start of the song audio track to the start of the project to reveal the whole waveform

### ORGANIZE CONVERTED ROCKSMITH MIDI TRACKS

In this example there are many converted MIDI tracks in our project. Keep the following imported tracks:

- PART GUITAR notes
- PART BASS notes
- PART RHYTHM notes

6.00.000      6.01.000      6.02.000      6.02.000      6.03.000      6.04.00        6.00.000      6.01.000      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.03.000      6.04.00        6.00.001      10      6.02.000      6.02.000      6.02.000        6.00.001      10      6.02.000      6.02.000      6.02.000        6.00.001      10      6.02.000      6.02.000      6.02.000        6.00.001      10      6.000      6.02.000      6.02.000      6.02.000        6.00.001      6.01      6.00      6.02.000      6.00      6.00      6.00        6.00.001      6.00      6.01      6.00      6.00      6.00      6.00        6.001      6.01						<b>1</b> 60, 1/4 <u>1.1.00</u>	2.1.00	<u>▼3.1.00</u>	4.1.00	T2.T2T2 <u>5.1.00</u>
G SONG AUDIO    UO						0:00.000	0:01.000	0:02.000	0:03.000	0:04.000
© COUNTIN    VO    -212    M S    2      © PART GUITAR-node    VO	SONG AUDIO	1/0	-0.8	MS	1					
© PART GUITAR -onde 100 mm 1 M 1 3    3      © PART BASS-rocke 100 mm 1 M 1 4    4      © PART BASS-rocke 100 mm 1 M 1 5    5      © PART REAL GUITAL 100 mm 1 M 1 5    5      © PART REAL GUITAL 100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    5      © PART REAL BASS-100 mm 1 M 1 5    10      © BERT -ordes 100 mm 1 M 1 5    10      © PART REALS 100 mm 1 M 1 5    10      © PART REAL BASS 100 mm 1 M 1 5    10      © PART REAL BASS 100 mm 1 M 1 5    10      © PART REAL BASS 100 mm 1 M 1 5    10      © PART REAL BASS 100 mm 1 M 1 5    10      © PART RUTAR 100 mm 1 M 1 5    10      © PART GUITAR 100 mm 1 M 1 5    10      © PART RUTAR 100 mm 1 M 1 5    10      © PART RUTAR 100 mm 1 M 1 5    10	O COUNTIN	1/0	-21.2	MS	2					
@ PART BASS-rodes    VD    wf    M    S      @ PART RAYTHM-mot, lvo    wf    M    S      @ PART RAL, GUTAN    VD    wf    M    S      @ PART RAL, SASS-    VD    wf    M    S      @ EAT-rodes    VD    wf    M    S      @ PART RASS    VD    Wf    M    S	PART GUITAR - note	1/0	-inf	MS	3					
PART RAYCHM and IVD      Inf      M S      5        PART RAW GUTAN      Inf      M S      6        PART RAW GUTAN      Inf      M S      7        PART RAW GUTAN      Inf      M S      10        PART DRUNS      Inf      M S      10        PART DRUNS      Inf      M S      12        PART DRUNS      Inf      M S      12        PART DRUNS      Inf      M S      13        PART GUTAR      Inf      Inf      Inf	PART BASS - notes	1/0	-inf	MS	4					
• PART REAL GUITA! 100      • • • • • • • • • • • • • • •	PART RHYTHM - not	1/0	-inf	MS	5					
© PART REAL GUITAL 100      inf      M S      7        © PART REAL BASS- 100      inf      M S      8        © PART VOCALS-node      10      inf      M S      10        © BENTS-node      100      inf      M S      10      inf        © BENTS-node      100      inf      M S      11      inf      inf        © BENTS-nodes      100      inf      M S      12      inf      inf        © PART DRUNS      10      inf      M S      12      inf      inf        © PART GUITAR      10      inf      M S      13      inf      inf        © PART GUITAR      inf      inf      inf      inf      inf      inf	PART REAL GUITAF	1/0	-inf	MS	6					
PART REAL BASS 100      Inf      M S      8        PART REAL BASS 100      Inf      M S      5        PART VOCALS-rade 100      Inf      M S      10        © EAET-rades      10      Inf      M S      11        © PART DRUMS      10      Inf      M S      12        © PART BASS      10      Inf      M S      12        © PART BASS      10      Inf      M S      12        © PART BASS      10      Inf      M S      12	PART REAL GUITAF	1/0	-inf	MS	7					
PART MOCALS - note:      NO      Image: Mode Service Se	PART REAL BASS -	1/0	-inf	MS	8					-
© EVENTS - notes      VO	PART VOCALS - note	1/0	-inf	MS	9					-
© BEAT-roles      VO       M S      11        © PART DRUMS      VO       M S      12        © PART DRUMS      VO       M S      12        © PART GUITAR            © PART GUITAR	EVENTS - notes	1/0	-inf	MS	10					
©      PART DRUMS      VO      VI      IS      12        ©      PART GUTAR      VO      VI      IS      13        ©      PART GUTAR      VO      VI      IS      14	BEAT - notes	1/0	-inf	MS	11					
PART BASS  VO  VO  13    PART GUITAR  VO  VO  PART GUITAR	PART DRUMS	1/0	-inf	MS	12					-
PART GUITAR VO PART GUITAR	PART BASS	1/0	M	MS	13			-		
Conter FX U	O PART GUITAR	1/0	M	MS	14					
		- (	center	FXU	14					
	QUADAS	1/0			16					

### Delete the following imported MIDI tracks:

- PART VOCALS notes
- PART REAL GUITAR notes
- PART REAL BASS notes
- EVENTS notes \*
- BEAT notes \*

\* We will use the EVENTS and BEAT tracks that are already included in the C3 Template.

	<i>.</i>				<b>1/4</b>				12.121
					<u>1.1.00</u> 0:00.000	2.1.00 0:01.000	<u>3.1.00</u> 0:02.000	<u>4.1.00</u> 0:03.000	<u>5.1.00</u> 0:04.000
SONG AUDIO	1/0	-0.8	MS	1					
O COUNTIN	1/0	-21.2	MS	2					
PART GUITAR - note	1/0	-inf	MS	3					
PART BASS - notes	1/0	+inf	MS	4					
PART RHYTHM - not	١/O	-inf	MS	5					
PART REAL GUITAF	1/0	-inf	MS	6					-
PART REAL GUITAF	1/0	-inf	MS	7					
O PART REAL BASS -	1/0	-inf	MS	8					
PART VOCALS - note	1/0	-inf	MS	9					
EVENTS - notes	1/0	-inf	MS	10	-			_	
BEAT - notes	1/0	-inf	MS	11			_		
PART DRUMS	1/0	-ini	MS	12					
PART BASS	1/0	M	M S	13					
PART GUITAR	1/0	M	MS	14					
		center	FXU						





Copy the converted MIDI notes:

- Select the whole MIDI or a selection as needed
- Press Ctrl + A to select the whole MIDI
- Press Ctrl + C to copy your selection

Paste the converted MIDI into the correct instrument track in the C3 Template:

- Press Ctrl + V to paste the MIDI notes \*
  - \* Make sure that the play cursor is in the correct position before you paste your notes

When you have completed your custom you can delete the imported MIDI tracks.

# **GUITAR PRO FILES**

Guitar Pro files can be helpful when charting guitar and bass.

#### DOWNLOAD **GUITAR PRO FILES**

Guitar Pro files typically contain Pro guitar and bass parts. You can download them from websites such as ultimateguitar.com and gprotab.net.

Note 1: On Ultimate Guitar the download button is at the very bottom of Guitar Pro tab pages.

Note 2: You cannot download official Pro tabs from Ultimate Guitar unless you are a member.

#### Preview guitar pro files to make sure that they are accurate before you use them.

### CONVERT GUITAR PRO FILES TO MIDI WITH TUXGUITAR

- Open Guitar Pro downloads in TuxGuitar:
- Click **File** and then select Open
- Browse to your Downloads folder and select your Guitar Pro file. Click **Open**

Make a note of the number of Guitar Pro tracks. For example, In the example below there are six tracks.

Click

N°

2

3

4

5 -

6

-

- Click File and then select Export
- Select Export Midi from the context menu
- In the **Options** window click the **OK** button
- Click the **Save** button to save your MIDI file in your Downloads folder

Piano 1

		TUXGUITAR TRACK LIST
S-M	Name	Instrument
	Distortion Guitar	Distortion Gui
-	Acoustic Guitar	Steel String G
-	Solo Guitar	Overdrive Gui
-	Bass Guitar	Fingered Bass
-	Drums	Piano 1

### IMPORT TUX GUITAR MIDI FILES INTO REAPER

Earlier in the chapter we imported a Rocksmith MIDI file into REAPER. The steps to import a MIDI from Tux Guitar are much the same.

In Reaper create the number of empty tracks that you need for the exported MIDI file. Then drag and drop the MIDI at the start of the first empty track.

For detailed instructions refer to page 304. You will only need to modify those steps a little.

### Create empty tracks in REAPER for MIDI import.

🖻 🚰 🖏 📲 🏷 🐼

N 🗱 📪 🏩 📄 🍑

1/0

1/0

1/0

1/0

1/0

Drag and drop MIDI file 2 into empty tracks.

OK Cancel



3		Org MIC	aniz )I tr	ze y ack	our s.	im	port	ted	
Q	1)118								1118, 2
	<u>1.1.00</u> 0:00.00		1.3.00 0:01.0		<u>2.1.0</u> 0:02.0	<u>0</u> )33	2.3.0 0:03.0	0 )50	3.1.00 0:04.06
				(					
		_	_						
		-	_	_					

IMPORTED MIDI 313

### WORKING WITH GUITAR PRO MIDI FILES

Guitar Pro MIDI files contain pitched MIDI notes. They are not the same as a Rocksmith 5-lane conversion.

#### **GUITAR PRO MIDI** IN REAPER

Guitar Pro MIDI tracks are different from Rocksmith conversions in a couple of ways:

- The tempo map might be set to a single BPM
- You need to translate notes into 5-lanes for Rock Band

It is unlikely that the MIDI BPM will perfectly match the song BPM. You may need to tempo map the whole song from start to finish.

If the MIDI is accurate you will be able to see the relationships between the notes. This will help you plan out chords or different sections of the song.

Tip: Open the Guitar Pro MIDI on your second monitor (if you have one). You can then work on the PART GUITAR track on your main monitor.

### WORKING WITH GUITAR PRO MIDI



Above, you can see a MIDI that has been tempo mapped. The pitch and rythm of the notes match the song audio. Below, is the authored 5-lane part.

Tip: Enable ReaSynth in your Guitar Pro MIDI track to hear the imported MIDI notes. See page 293 to configure ReaSynth.





#### **GUITAR PRO MIDI BROKEN CHORDS**



The MIDI (above) is for an acoustic guitar part. The broken chord arpeggios are hard to read. This is because all the notes ring in to each other. The blending of these notes makes it a challenge to author the rhythm of this part.

In this case you have a couple of options:

- Refer to the MIDI only for note pitches
- Scrub the audio for the rhythm
- Refer to the Guitar Pro tab for the rhythm

Select the combination that works best for you.

315 IMPORTED MIDI

# REPEAT MIDI SECTIONS

# MIDI NOTE LENGTH AND BPM

Guitar Pro MIDI files often contain repeated sections. This means that later sections will not line up with the song audio.

When a Guitar Pro MIDI has repeat section(s) it will be shorter in length than the song audio. This means that most of the imported MIDI can be out of sync with the audio. In the graphic below you can see that the song Intro is twice as long as the Guitar Pro Intro.

Note: These bar lines show repeat sections:



To work around this issue, identify and move sections of notes to their correct position in the song.

**Tip:** Repeat section bar lines are only displayed in Guitar Pro previews (not in the MIDI). When you tempo map an imported MIDI you may find that it is double or half of the song BPM. For example:

 Eighth notes become quarter notes when you reduce the BPM by half





This change happens as you tempo map.

To fix this you can alter the note position properties for the imported MIDI notes:

- Press Ctrl + A to select all the imported MIDI notes
- Press Ctrl + F2 to open the Multiple Note Properties window

Enter **one** of the following in the **Position** and **Length** fields:

What to do when the MIDI BPM is double or half

 \*2 Eighth notes will become quarter notes

the song BPM?

 /2 Eighth notes will become sixteenth notes

Click the **OK** button to complete the operation.

 Multiple Note Properties
 Image: Content of the second secon



The note length and position of your MIDI notes is either doubled or halved. This change includes the starting position of your notes. For example if you had a standard count-in and your notes started at measure 3.1:

- \*2 Your notes now start at measure 4.1
- /2 your notes now start at measure 2.1

In either case you need to move your notes back to measure 3.1:

- Press Ctrl + A to select all the MIDI notes
- Click and drag the notes back to measure 3.1

This process is an easy fix for imported MIDI files with the wrong BPM.

### IMPORT MIDI FROM CUSTOM SONG

2

Follow these steps to import the MIDI file from an existing custom:

- Download a Rock Band 3 custom from <u>https://</u> <u>rhythmverse.co</u>
- Open File Explorer
- Browse to your Downloads folder



Open the custom song with Nautilus:

- Open Nautilus
- Drag and drop your downloaded custom from
   File Explorer into the
   Nautilus window

A new window for your custom song will open.







Export the song audio\* and MIDI file:

Click the **Contents** tab

3

Expand the listed song folders:

 Click songs > [custom song name]

The lower panel lists the .mid and .mogg files:

- Select both files
- Right-cilck the selected files and choose Extract selected files from the menu
- Click the Save button

Open REAPER and delete MIDI items:

- Right-click and draw a selection around all MIDI items in the C3 Template
- Press the Delete key

This will remove all MIDI items, but leave the MIDI tracks intact. This ensures that there will not be any duplicate MIDI items in your REAPER project.

Turn the page to continue to the next step.

### IMPORT MIDI FROM CUSTOM SONG (CONTINUED)

Import custom MIDI items into REAPER:

 Drag and drop the .mid file into the PART DRUMS track at measure 1.1.00

The **MIDI file import options** window will open:

- Confirm that the tempo map merge is at measure 11.00
- Click **OK** to confirm



Import custom song audio into REAPER:

 Drag and drop the .mogg file into the SONG AUDIO track at measure 1.1.00 \*

Mono audio tracks are added to your project:

- Zoom in to view the audio waveform
- Select and delete all the empty audio tracks (highlighted in yellow)
- \* **Note**: Encrypted .mogg audio files will not play in REAPER.





Your custom song MIDI import is complete, but some of your MIDI items are in the wrong MIDI tracks.

Start at the bottom and open MIDI items one at a time. Look at the MIDI item name in the MIDI item tab:



- Move each MIDI item to the correct track
- Make sure each MIDI item starts at measure 1.1.00

For a full band custom you will have the following MIDI items:

- PART DRUMS
- PART BASS
- PART GUITAR
- PART VOCALS
- VENUE
- EVENTS
- BEAT

Make sure that each item is in the correct MIDI track!

- Use Rocksmith customs and Guitar Pro files to help you author guitar and bass charts.
- Use Onyx to convert Rocksmith files to 5-lane MIDI tracks.
- Use TuxGuitar to convert Guitar Pro files to MIDI.
- Make sure that imported MIDI tempo maps are accurate.
- Adjust the count-in to Rock Band standards if needed.
- Author guitar and bass parts one section at a time.
- Make sure that you author your guitar and bass parts to Rock Band standards.
- Import existing custom song .mid files to the start of measure one.
- Import existing custom song .mogg files to the start of measure one.
- Organize imported custom song MIDI items so that they are in the correct MIDI tracks.
- Encrypted .mogg files will not play in REAPER. In this case provide your own song audio.



- Expert, Hard, Medium, and Easy
- Drum animations

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• Common authoring mistakes

### In this chapter, we will look at how to author drums for Rock Band.

This includes some broad concepts, as well as some specific rules for drums:

- Use specific gems for particular parts of the kit
- Maintain note consistency
- How to author toms, flams, hi-hats, crashes, and kicks
- How to author single and double kick songs
- How to author "disco beats" and drum rolls
- Authoring rules for each difficulty
- Drum animations
- Player character animations
- Drum mix events
- Common authoring mistakes
- Drum fills and Overdrive



Drum fills and Overdrive are covered in chapter 17 along with other instrument markers (see page 589).



### GETTING STARTED WITH EXPERT DRUMS

Listen to your drum audio and review the drum template before you start.

#### BASIC DRUMS LAYOUT

The gem layout for basic drums is as follows:



Kick

To change the PART DRUMS template to Rock Band colors see pages 121 — 122.

#### EXPERT DRUMS OVERVIEW

Drums are authored on the **PART DRUMS** track. Use MIDI notes 96 (C6) to 100 (E6) for Expert gems.

These notes are shown in the graphic to the right.

To author drum parts, follow these steps:

- Start with Expert and chart the rhythms of the actual drum performance
- Adjust the gems to match the Rock Band kit

**Note:** Adjusting the gems to fit the stock kit is important. You can find guidance and examples on how to do this throughout this chapter.

#### EXPERT DRUMS TEMPLATE

PART DRUMS

Roll Marker 2-Lane Roll Marker 1-Lane ----Drum Fill Drum Fill Drum Fill Drum Fill Drum Fill ----Overdrive

Pro Green Tom Pro Blue Tom Pro Yellow Tom

Solo Marker

Expert Green Expert Blue Expert Yellow Expert Red Expert Kick

#### LEFT AND RIGHT HAND STICKING

Sticking refers to the hand that the drummer is using. We assume that the drummer is right-handed.

We use these abbreviations for sticking:

- L (left hand)
- R (right hand)

#### REAPER FX: REASYNTH

ReaSynth is a plugin that lets you hear short percussion sounds for your MIDI charts.

You can use these sounds to verify your MIDI notes against the song audio.

See page 293 for more details.

### AUDIO SOURCES AND AUTHORING

There are a couple of ways to approach drum authoring:

- Author the full kit measure by measure
- Author parts of the kit one at a time:
  - Kicks
  - Snare
  - Hi-hat and cymbals
  - Toms

Many authors prefer authoring parts of the kit separately.

If you have drum stems, listen to them before you start authoring. This will help you become familiar with how different parts of the kit sound:

Solo and listen to each track

Then listen to how things sound together. For example:

- How does the kick sound with the cymbals?
- How does the floor tom differ from the kick?

Getting familiar with how things sound will help you to author more efficiently.

### PRO DRUMS

# PRO DRUMS: DOUBLE BASS

Pro drums have additional features to author.

How to author 2x kick parts for Pro drums.

#### PRO CYMBALS ADD-ON

Pro drums added cymbals to the basic drums layout:



You can play these cymbals on the cymbal attachments for the Rock Band kit or on a compatible e-kit.

> On PART DRUMS, Yellow, Blue, and Green gems appear as cymbals in the game track.

You use special markers to change these notes into tom gems (see page 337).

#### DOUBLE BASS PEDAL

Pro drums also support an extra kick pedal. You can use it for:

- Double bass (kick) parts
- Hi-hat cymbal pedal

We will look at how to author double bass parts as we work through this chapter.

Double bass parts are referred to as (2x) drum parts.



Pro Drums: Yellow, Blue, and Green Cymbals



Pro Drums: Yellow, Blue, and Green Toms **Note**: If you release a (2x) kick pedal version you should also release a single kick version.

#### DOUBLE BASS OVERVIEW

In the C3 Template you can author two drum tracks:

- PART DRUMS: for drums with a single kick pedal
- PART DRUMS\_2X: for Pro drums with a double bass (2x) pedal

The differences between the completed tracks is small:

- PART DRUMS\_2X: Double kicks in the Expert chart only
- PART DRUMS: Single pedal kicks in the Expert chart

Hard, Medium, and Easy are the same in both tracks and are single kick only.

#### 2X AUTHORING PROCESS

The 2x authoring process is straight-forward. Start with the PART DRUMS track:

- Author the Expert part, but include the double bass
- Reduce each difficulty, but for a single kick pedal

When the PART DRUMS track is complete, duplicate it:

- Rename the duplicate track PART DRUMS\_2X
- Change the text event at the start of the duplicate track from PART DRUMS to PART DRUMS 2X
- In the PART DRUMS track:
- Reduce the kicks so that they can be played with one foot on the stock kit

### There are a couple of different ways to reduce kicks:

- Choose what the right foot is doing as the playable part, or
- Find a pattern that just the right foot can play

You can use the **Reduce 2x bass pedal** function in CAT to help you get started.

Be aware that a real kick pedal has mechanisms that allow for a fast, constant stream of hits. The stock Rock Band kit does not have these mechanisms.

This means that **too many kicks in a row can lead to fatigue on the stock kit**. Take this, and the tempo of the song into account as you author.

A step-by-step guide to create the PART DRUMS\_2X track is on the next page.

# PART DRUMS\_2X TRACK

Complete your PART DRUMS chart. This includes:

- Expert (with double bass parts authored)
- Hard, Medium, and Easy (with kicks authored for only one foot)

Duplicate the PART DRUMS track as follows:

- **Right-click** the PART DRUMS track in the Track Panel
- Select Duplicate tracks from the menu

Rename the duplicate track to **PART DRUMS\_2X**:

- Click the name field in the duplicated drum track
- Rename the track PART DRUMS\_2X
- Press the Enter key



		1124.727 71.1.00 0:00.000	0 81 <u>1.3.00</u> 0:00.962
PART DRUMS_2X VO		PART DRUMS_2X - Dark Are the V	/eils 6 No Markers.mid
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	9		
	16		



reate BEAT track Create animations events Create drums animations Create pro keys animations Remove invalid markers 2 🖆 💷 🖻 Edit by MBT Fix sustains Fix trills/rolls Polish notes Reduce chords Lower frets complexity Add missing solo/OD to pro Clean up notes' length arker 2-Lane / arker 1-Lane Reduce pro keys note density based on 5-lane Remove kicks Leave single snare hits Flip disco beats Unflip disco beats Reduce 2x bass peda FILL (use all 5) ORIVE (115) /ocals Add slides Add space between tubes Remove illegal punctuation Capitalize first lyric in phrases Check/fix capitalization Hide lyrics Change notes to non-pitched Create phrase markers Trim phrase markers Compact harmonies reen Tom lue Tom ellow Tom (109) Fix text events Add overdrive phrases Delete empty phrases Compact phrases Change notes to pitched Export lyrics Show lyrics Create sing-a-long notes (107 (106 arker (10) Automatic reductions (5-lane) Automatic reductions (drums) Automatic animations Vocals clean up General clean up T Green T Blue Pro Guitar/Ba Generate Root Not Generate Fret Hand Positions Copy OD/Solo Markers from 5-lane Reduce from 5-lane 비 = 너 이 C<sup>3</sup> Automation Tools

Change the track name in the text event at the start of the MIDI track.

Open the duplicate track:

- Double-click the PART DRUMS\_2X MIDI track
- Double-click the PART DRUMS text event and change the track name to PART DRUMS\_2X
- Click the **OK** button

In the **PART DRUMS** track reduce the **Expert** kicks:

- Press F9 to open CAT
- Click the Reduce 2x bass pedal button

This window will open:

	74 Reduce d	ouble pe	- 🗆	×
Expert Reduce all Reduce selected	Expert 😐	Reduce all	Reduce sele	cted

- Click the Reduce all button
- Review the Expert chart for playability with one foot

### MIDI GRID

### NOTE CONSISTENCY

Adjust the MIDI grid to match the part that you are authoring.

#### It is not always best to force note consistency.





#### GRID SIZE FOR DRUMS

A 16th or 32nd note grid is usually a good choice for authoring drums.

Turn **Snap** on in the MIDI Editor for quantized authoring.

Switch to a triplet grid as needed by the song.

### USING THE SWING GRID

Some songs (usually the funkier ones) have a slight swing to the groove. To compensate for this:

- Try using a 50% or 66% 16th note swing grid
- This will visually encourage the player to mimic the swing.

**Note**: Too much swing can make the gem pattern harder to read.

See also pages 171 — 174.

### OVERVIEW AND GUIDELINES

When we author drums we translate the pads and cymbals played to the Rock Band kit.

With some songs this can be a direct translation. But this is not always the case. You should take care not to force things too much. It doesn't always make for a playable song.

For example, imagine a song that has a ride cymbal section followed by a drum fill on the second rack tom. (See screenshot below).



Basic Drums: Ride and Kick into Blue Tom Fill



In this case you should consider putting the toms on Yellow. This is so that they feel different to play than the ride cymbal. (See screenshot below).

**Note: Hi-hats and cymbals** have a more distinctive sound and more important role in most



An exception to this rule is when a tom fill uses Yellow, Blue, and Green gems.

In this case the last Green tom is normally followed by a crash on the Green gem. This prevents the player from having to cross hands to hit a cymbal on the Blue gem.



Basic Drums: Ride and K into Yellow Tom Fill



Green Fill into Green Crash

### AUTHORING TOMS

### TOM FILLS AND STICKING

When you author Yellow, Blue, and Green expert gems they default to cymbals:

- Hi-hat
- Ride
- Crash

If you want an Expert gem to be a tom you have to pair it with a Pro tom gem of the same color. For example, an Expert Yellow note and a Yellow Pro Tom note together make a Yellow tom.

You can author these two notes individually. Or you can copy Yellow, Blue, and Green Expert gems up to the Pro tom rows.

**Note**: If your Expert gems and Pro Tom notes are not aligned your Expert gems will still appear as cymbals.

- To fix out of sync notes:
- Select the Expert and Pro Tom notes
- Press the Q key

Quantize E	vents			₽×
Settings:	Use grid	~		Bypass
Quantize:	Selected not	es 🗸	Position	$\sim$
Strength:				100 %
Fix ove	daps	Commit	ОК	Cancel

Press the OK button





To the left you can see a drum chart with Yellow, Blue, and Green Pro Tom notes. The chart preview is above.

Notice that the first Green gem in the chart does not have a Green tom marker. It appears as a crash in the preview.

Similarly, the notes paired with tom markers all appear as toms.

Pro Tom notes apply to Yellow, Blue, and Green gems authored in each difficulty. Sometimes you need to make changes to drum charts so that they are satisfying to play on the Rock Band kit.

A good example of this is when the player has to cross their hands to play a part.

This can be difficult to do, even if you are going from Green to Blue, or from Blue to Yellow.

Now, imagine you are playing a

song where the drummer plays a roll on a kit with six toms.

You have to make changes to play this on the stock kit that only has three toms. We have to wrap the gems around the kit to play the fill.

In this case it helps to start the wrap with the left hand, so that players' hands do not cross. You can see this in the "Wrapping Tom Fill Gems" graphic below. The downside here is that the gems are briefly out of sync with the tom pitches.

Note: Making changes to toms like this is less noticeable at higher tempos. At lower tempos you will notice these changes more, but you can also cross hands more easily. So, at lower tempos you can author the section exactly as it is played.



7 DRUM AUTHORING

### FLAMS

### DISCO BEATS, OR THE "16 BEAT"

Flip disco beat notes to play them on the stock

A flam is two single strokes played slightly apart on the same drum.

Drummers play flams to thicken the sound of a note. Flams are made up of two strokes:

- A grace note, and
- A primary note

The grace note is a softer note, while the primary note is louder. The drummer holds the stick of the primary note higher than the stick of the grace note.

The primary note hits the drum just after the grace note.

In Rock Band we play flams as a single unison hit with both hands. For example, we author



a snare flam as a hit on the Red and Yellow gems. This shows the player that they must use both hands at the same time.

Note: The Yellow gem does not mute or unmute the snare stream if you are using stems as vour audio source.

To the left you can see the opening notes of "You Really Got Me" by The Kinks.

The iconic opening snare flam is on the Red and Yellow gems, with a Yellow Pro tom marker.

#### TOM FLAMS

We author tom flams as a two stick unison hit on tom gems:

- Yellow and Blue toms, or
- Blue and Green toms

#### WHAT IS A DISCO **BFAT?**

A disco beat features 16th notes on the hi-hat. "Run to the Hills" by Iron Maiden is a good example. The drummer plays:

- 16th note hi-hats with alternate sticking (RLRL)
- Snare with the right hand (on beats two and four)
- Kick on the downbeat

This pattern and sticking is not a problem on Pro drums:

- The hi-hat is higher than the snare and to the left
- The right hand can hit the snare without crossing hands

This is not the case on the stock Rock Band kit.

#### THE STOCK ROCK BAND KIT

Rock Band kit.

On the stock kit the disco beat pattern is difficult to play:

- The hi-hat (Yellow) is on the right, and
- The right hand can only hit the snare (Red) by crossing hands

This pad placement makes the beat much harder to play on the stock kit.







"DISCO FLIP"

The solution is to "flip" the

gems on the Rock Band kit:

the snares on Yellow

Play the hi-hats on Red and

We control this flip with drum

**Note:** Always listen carefully to

some cases, the drummer can

play 16th notes without using

not flip the disco beat notes.

alternate hands. In this case do

see if the drummer is hitting

a hi-hat with the snare. In

**OVFRVIFW** 

mix text events.

Basic Drums: "Run to the Hills" Flipped Disco Beat

## HOW TO AUTHOR DISCO BEATS

Customs without multitracks use two text events to flip disco beat hi-hats and snares.

To the right you can see a disco beat on Pro and Basic drums.

The hi-hat and snare gems have the sticking included inside each note.

The Pro drums chart is flipped to Basic drums using these two text events:

- [mix 3 drums0d] Turns disco flip on
- [mix 3 drums0] Turns disco flip off

Place these text events before, and after, the gems you want to flip. Then, use CAT to flip the disco beat gems:

- Press **F9** to open CAT
- Click the **Flip disco beats** button

[Continued on facing page].

### Step 1

Author your chart for Pro drums. When complete, reduce the chart for each difficulty.

#### Step 2

#### Add the disco flip text events to Expert. Run CAT and flip the Expert hi-hats and snares.

#### Step 3

Expert Pro drums can now play unflipped flipped gems. Basic drums will play the flipped gems.

PRO DRUMS (NOT FLIPPED)





**Select** the notes to flip in your MIDI track

Click the **Flip selected** button

Your disco beat notes are now flipped. The beat will now play correctly on Pro and Basic drums.

For more details about disco flip text events and multitracks see pages 373 — 375.



the snare falls on the beat with the righthand. If the snare falls on the up-beat and/or left-hand then do not flip the gems.

**Note:** Make sure that

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# DISCO BEAT NOTE WEIGHTING

How does Rock Band resolve scoring and note weighting for disco flipped notes?



### HI-HAT AND CRASH **CYMBALS**

There are some common exceptions for hi-hat and crash authoring.

#### **OPEN HI-HATS ON BIUF**

Open hi-hats can be authored on Blue when:

- There is a clear distinction between the open and closed hats, and
- There aren't other Blue toms or cymbal gems in the section

This works great for bands like Rush whose drumming is very tight and methodical. It does

not work so well for drummers who gradually open and close the hi-hat during a section of the song:

Do not chart open hi-hats on Blue in this case

This is especially true if other Blue toms or cymbals are being played. In this case keep all hihats, open or closed, on Yellow.

OPEN HI-HATS ON BLUE: "SUBDIVISIONS" BY RUSH

Open Hi-Hat

#### **CRASH CYMBAL** AUTHORING

You can author crash cymbals on Green, Blue, or Yellow, depending on the situation.

For example, a drummer might:

- Ride the crash cymbal during a chorus, and
- Hit another cymbal to accent the start of each measure

In this case, we can author a series of Green gems, with the accent crash on Blue. (See screenshot below):



### Blue Accent Cymbal

#### **HI-HATS ON BLUE** / GREEN

Authoring hi-hats on Blue or Green is not a very common occurrence. You can however author hi-hats on Green if:

- The right-hand rides on the hi-hat, and
- The left-hand is playing at least two different toms or percussion gems

You can see this in "Don't Stop Believin'" by Journey. Putting the hi-hat on Green frees the left hand to play the left three pads.

Similarly, you can author the ride on Green if you need to free up the other pads for the left hand to play.

Finally, **hi-hat on Blue** is also an option, if you need to free up other pads for the left hand. For example, "Feeling This" by Blink-182.





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Closed Hi-Hat

### HI-HAT AND CRASH CYMBALS (CONTINUED)

Alternating Yellow and Blue gems for closed and open hi-hats is not always the best choice.

Author double crashes on Yellow and Green.

#### OPEN HI-HATS ON UPBEATS

Drummers often open and close the hi-hat pedal to accent the hi-hat. For example, a drummer might accent eighth note hihats as follows:

- Closing the hi-hat on the downbeat, and
- Opening the hi-hat on the upbeat

This sounds great and gives the beat a syncopated feel. This feel is difficult to reproduce because Rock Band does not have a hihat pedal. We could author this rhythm as follows:

- Alternating Yellow and Blue gems, or
- Straight 8th notes, all on Yellow

**Note:** These two options *may* leave the player feeling detached from the rhythm.

A **better way to author this** kind of beat is with:

 Yellow or Blue gems only on the upbeats Interpreting this rule is a judgement call. For example, in "Centerfold" Harmonix authored alternating Yellow and Blue gems.

You can also find this same choice in slower songs like "Feeling That Way" by Journey.

"Heart of Glass" by Blondie provides a good contrast. This part does not have any hi-hats on the downbeat. But it does have closed and open hi-hats on the upbeats. This gives the song a great syncopated feel.

Use the method that feels best for your song.





#### DOUBLE CRASH HITS

Drummers often hit two cymbals at once for extra emphasis. To mirror this on the Rock Band kit:

 Author a double crash on Yellow and Green



Double Crash (with Kick) on Yellow and Green Cymbals

### HI-HAT AND CRASH CYMBALS (CONTINUED)

Left foot hi-hat pedal hits are not usually charted.

#### LEFT FOOT HI-HAT PEDAL

Rock Band drum kits do not have a pedal for the hi-hat. For this reason we usually do not chart left foot hi-hat pedal hits. Playing these hits with the right hand feels un-natural. The only exception is when:

 The drummer keeps time with their left foot and does not play anything else

You can see two examples from custom songs to the right:

- Ghost "See No Evil"
- Left foot hi-hat pedal is not charted
- Led Zeppelin "Whole Lotta Love" (Post chorus)
- Left foot hi-hat pedal is charted

**Note**: Author the left foot hi-hat animation in either case.





### AUTHOR TO THE FULL MIX

Do not author parts that are not audible in the full audio mix.

#### UN-ACCENTED DRUM HITS

Solo drum tracks may often have details that are not heard in the full band mix.

You should take care when authoring these details:

- They may not translate well when played with the rest of the band
- A common example of this is when the drummer plays:
- Quiet off-beat eighth note cymbals, with
- More heavily emphasized downbeats

- Playing these extra eighth notes in-game can:
- Detract from an intended quarter note groove

Similarly you may hear accents and details in the kick or snare tracks that are not heard in the full mix. In this case, author the groove as heard in the full mix:

 The player should not feel as if they are playing unnecessary notes / gems

### DRUM ROLLS

There are two kinds of drum rolls in Rock Band, the standard roll and the special roll.

#### DRUM ROLL BASICS

A drum roll is a series of rapid beats used to produce a sustained sound on the kit.

The most common rolls are:

- Single stroke rolls: RLRL
- Double stroke rolls: RRLL
- Buzz roll: RLRL

Single stroke rolls use fast alternate sticking.

Double stroke rolls use stick rebound to produce fast rolls.

Buzz rolls use single strokes with control of the rebound to produce the "buzz" sound.

### ROLL LANES AND MARKERS

Drum roll lanes help players play very fast parts on the Rock Band kit. There are two kinds of roll lanes:

Standard rolls use the marker on note 126 (F#8):

Roll Marker 1-Lane

Special (two lane) rolls use the marker on note 127 (G8):

Roll Marker 2-Lane

Special rolls are for cymbal swells (for rolls played between two pads).



Pro Drums: Cymbal Swell on Yellow and Green A roll marker is a single MIDI note that covers the whole roll (except for the last note). \* Make sure that:

- The roll marker starts on the first note of the roll
- The roll marker does not overlap the last roll note
- \* Many authors use a different method for roll markers. See pages 353 — 354.

Rolls work on both Pro and Basic drums.

> Many people find that two note rolls are too strict and hard to combo. **Consider authoring swells to a single lane** (usually on the Green cymbal).

#### AUTHORING RULES

Use roll markers on **single toms**, **snares**, and **cymbals** when:

 The part is too fast for the stock Rock Band kit

When authoring rolls, follow these rules:

- Use drum roll markers when rolls / swells are too hard to play on the stock kit
- Do not author a fill over a drum roll
- For extremely fast parts author 32nd notes inside a roll lane
- Try to avoid authoring long rolls that span many pads \*

\* For example, a quick descending tom roll. This does not look good in-game

Roll markers are best used on very fast or out of time rolls.

#### EXAMPLE ROLLS AND SWELLS

Some examples of songs with drum rolls are:

- "Subdivisions" by Rush:
  Drum roll and cymbal swell
- "Beast and the Harlot" by Avenged Sevenfold: Cymbal swell
- "Train Kept a Rollin'" by Aerosmith: Should use a cymbal swell
- "Innuendo" by Queen: Buzz roll





#### HARD DIFFICULTY ROLLS

By default roll markers only work on Expert.

To make them work on both Expert and Hard, you need to change their note velocity to a number between 41 and 50.

To change the velocity of a MIDI note see pages 175 — 176.

**Remember**: The default velocity of MIDI notes in REAPER is 96.



Pro Drums: Roll / Swell on Green Cymbal Only
Official method: Chart drum roll markers that do not cover the last note of the roll.

Unofficial method: Chart roll markers that reach just beyond the last roll note. Many custom song authors use this method.

Take a look at the roll marker in								16TH NOTE TRIPLET	SNARE ROLL	The unofficial method covers
the image to the right.										the whole roll with the roll
You can see that the roll marker		30.2 •	30.3 •	30.4	31	31.2	31.3	31.4		marker. This makes the scoring for the whole roll less strict.
and first roll note both start together.	Roll Marker 2-Lane	• •	0 0 0	•			Note Properties	₽×		Extend the roll marker a little
The roll marker ends where the	Roll Marker 1-Lane	0 0	•	F	OLL MARKER		<u>N</u> ote: 126 F	#8 ~		beyond the last roll note to give the player a little extra leeway.
last roll note begins.		0 0	•	•		•	Velocity: 96	(1-127)		Follow these steps:
This is the official way to chart a	Drum Fill	•	•	•		•	Position: 30.4.0	00		Tottow these steps.
roll marker - so that the marker does not cover the last note of	Drum Fill	0 0 0	0 0 0	0 0 0		•	Length: 0.2.08	3		<ul> <li>End the roll marker at the end of the last roll note</li> </ul>
the rott.	Drum Fill	0 0	0	•		0		v alemana in any field		<ul> <li>Select the roll marker and</li> </ul>
The drawback with this method is that the last note of the roll	Drum Fill	•	•	0 0 0		•	Use +102 to add	1 octave and 2 semitones.		press <b>Ctrl + F2</b> to open the <b>Note Properties</b> window
is scored more strictly. And this makes the roll harder to	Drum Fill (Use all 5)	•	•	0 0 0		•	ОК	Cancel Apply		■ In the <b>Length</b> field adjust
complete. If you would like to avoid this issue, use the		• •	0 0	0 0		•	• •	0 0 0		the length of the roll marker *
unofficial method, detailed on the facing page.	Expert Green	•	•	0 0 0		•		•		<ul> <li>Click OK to close the Note</li> </ul>
	Expert Blue	•	0	•		•		•		Properties window
	Expert Yellow	•	0 0 0			0 0 0	•	•		* You can extend the roll marker fractions of a 32nd note beyond
	Expert Red	•	•	- 1111				•		the last roll note. If you extend it a whole 32nd note you will
	Expert Orange	0 0 0	0 0 0	0 0 0		•		0 0		get an error in Magma when you compile your song.

Roll marker



# HARD DIFFICULTY

Hard difficulty introduces the skills needed to become an expert player.

### HARD DRUMS OVERVIEW

Hard gems are authored on notes 84 (C5) to 88 (E5):



н

The Hard difficulty introduces Expert skills, but with many of the details removed.

Reduce your Expert chart:

- Press F9 to open CAT
- Click the Automatic reduction drums button
- Uncheck Medium and Easy
- Click the **Reduce** button

### NOTE WEIGHTING AND REDUCTIONS

Some gems carry more weight, scoring wise, than others:



Ride / Rack Tom 2 Crash / Floor Tom

Missing a series of kicks will fail you out sooner than missing a series of snares.

Cymbal and tom gems are weighted the least. You can miss more of these gems before you fall to the bottom of the crowd meter.

Keep this in mind when you reduce drum charts of any difficulty.

### COMPLETE LIMB INDEPENDENCE

When the right hand plays a constant rhythm:

 Kicks and snares can fall between right hand timekeeping gems

For example, the right hand is playing a constant rhythm on the hi-hat:



The left hand and right foot can play snares and kicks between the hi-hats:



# 16TH NOTE ROLLS: RLRL

Hard introduces players to 16th note rolls:

- Played on one, or multiple pads
- With alternating hands

**Note**: Only author sections like this if they last a beat or two.

Hard players are not expected to immediately perfect these rolls. So, the player should not fail while learning to play them.

**Note**: Avoid authoring 16th note rolls when the song tempo is 140 BPM or more.



# KICKS AND OFF-BEAT CRASHES

Hard should not have as many kicks as Expert. So, continue to reinforce the idea of a quarter note grid.

Hard should often have off-beat crashes that are not paired with a kick:



Try removing the kicks marked with an "X", as shown in the example above.

# FASTER R HAND TIMEKEEPING

Hard players need to develop the techniques to play a fast rock beat.

The upper limit for playing constant 8th notes on Hard is about 170 BPM.

•	•	< 170 E	BPM
]	1		•
•			٠

355

# HARD DIFFICULTY (CONTINUED)

Remove Expert nuances so that Hard is more playable.

# THIN OUT THE KICKS

If there are 100 Kicks in Expert and 50 in Medium, there should be about 75 in Hard.

Try removing kicks from adjacent 8th or 16th notes.



## REMOVE KICKS FROM FILLS

Remove all kicks from drum fills on Hard difficulty.



# REMOVE SNARE ACCENTS

In a section filled with little snare accents:

Remove about half of them

**KEEP FAST ROLLS** 

For fast drum rolls you can:

note grid lines

start of a fast roll

Start rolls on 8th or quarter

Trim a note or two from the

**ON GRID** 

Do this in a consistent way throughout the whole song.

# EVEN NUMBER OF ROLL HITS

Advanced reading is needed for **16th note rolls** with an uneven number of hits:

 Even out the number of hits for Hard difficulty



# LESS HAND MOTION

Require less hand motion. For example, if a crash happens right after a snare flam:

 Make the flam a one handed snare hit

This preserves the rhythm and feeling of connection to the sound. It also gives the right hand more time to move to the crash, with less hand motion.

# NO QUICK HAND CROSSES

Remove notes that require the player to cross hands quickly.



## REDUCE MULTIPLE CRASHES

Expert crashes can be authored on many pads. Try putting them all on Green in Hard. This is one less thing for the player to keep track of.



# REMOVE GEMS CONSISTENTLY

When you remove gems on Hard be as consistent as you can from measure to measure.

This will make the song feel much more cohesive.

# MAKE SPACE FOR DOUBLE CRASHES

Don't author double crashes unless there is space for the player to prepare for them.



# DISCO BEAT TO "8 BEAT"

On Hard you play disco beats as a regular "8 beat". To chart this, unflip the disco beat and reduce it as follows:

- Put hi-hats back on Yellow
- Put snares back on Red
- Remove the 16th notes
- Add a Yellow hi-hat above the snare gem

This will leave you with a regular rock "8 beat".



# MEDIUM DRUMS

Medium difficulty introduces the basics of rock drumming. The player learns how to use their hands and feet at the same time.

# MEDIUM DRUMS OVERVIEW

Medium gems are authored on notes 72 (C4) to 76 (E4):

PART DRUMS

М

# INDEPENDENCE

LIMITED LIMB

Do not author kicks and snares between hi-hat / ride gems.



Medium difficulty removes the details for a skeleton drum part.

Reduce your Hard chart:

- Press F9 to open CAT
- Click the Automatic
- reduction drums button
- Uncheck Hard and Easy
- Click the Reduce button

# 

# QUARTER NOTE KICKS 100+ BPM

For songs above 100 — 110 BPM, consider only authoring kicks on quarter notes.



# TIMEKEEPING 8TH NOTES < 140 BPM

No timekeeping 8th notes (right hand) at 140 BPM or more.

Reduce to quarter notes at 140 BPM or more. **Note:** This will also mean less places for kicks.



# > 170 BPM 1 KICK PER MEASURE

One kick per measure for songs at 170 BPM or more.



# ONE HAND ROLLS AND FILLS

Assume that the player will hit a stream of gems on a single color with one hand. For example, a roll or fill on the Yellow tom.

Medium players are not expected to play 16th notes with alternating hands. So, reduce fills and rolls to 8th notes (or less for faster songs).





# REDUCING TRIPLETS

It is usually best to reduce triplets to quarter notes.

This is often preferable to removing every other gem from the triplet pattern.

**Note**: Either approach can radically change the feel of a passage.

QUARTER NOTES

Х

EVERY OTHER NOTE

# KICKS AND CRASHES

Medium difficulty introduces players to the following concept:

 Crashes are usually emphasized with a kick

Author downbeat crashes with a kick. Do not pair **syncopated**, or **off-beat crashes** with a kick.



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# MEDIUM DRUMS (CONTINUED)

# EASY DRUMS

There are no three limb hits in Easy. No gems should be paired with a kick.

# RESET AFTER CRASH

At faster tempos, remove gems that come immediately after a crash. This gives the player time to reset their hand position.



# EXTRA TIPS FOR MEDIUM

Medium players tend to get into the groove quite easily when:

 The beat is predictable and does not vary

When this is not the case:

• Focus on the intended feel of the passage

For example, when syncopation or polyrhythms complicate the

### OPEN / CLOSED HI-HATS

Contrasting open and closed hi-hats works well for some Medium songs. It does not work well for all songs though. Tempo is often the deciding factor.

Pick out the main hits of the

■ Thin out the gems around

.....

Some fills have an accented

pattern. For example, the

:

feel of the beat:

passage, and

those hits

drummer may:

1	•	•
X	•	•
-		
	<u>^</u>	
•		X
<b></b>		
X	X	X
-		-
•X	X	X
-	-	-

NO THREE LIMB

No kick, snare and crash at the

HITS

same time.

- Accent every third 16th note, or
- Hit a few different toms during a long snare fill

Instead of reducing the fill to 8th notes:

Try to find the intended rhythm of the fill. Simplify the pattern in a way that retains that nuance.

# EASY DRUMS OVERVIEW

Author Easy gems on notes 60 (C3) to 64 (E3):



Reduce your Medium chart:

- Press F9 to open CAT
- Click the Automatic reduction drums button
- Uncheck Hard and Medium

Е

Click the Reduce button

# BEATS FOR EASY DRUMS

There are two main beats authored for Easy:

- A two hand beat (no kick)
- A beat with kick and snare
- A general guideline to follow is:
- Less intense sections should be a kick / snare beat:



 More intense sections should be a 2-hand beat:



**Note**: Sometimes it may make sense to reduce a section to:

Kicks and toms/cymbals

# REDUCTION GUIDELINES

- No kicks under crashes
- For kick / crash sections, or important crash accents, author crashes instead of kicks
- At higher tempos you may want to reduce 8th note fills to quarter notes
- One kick per measure for songs at 170 BPM or more
- In sparse kick / snare sections it's OK to author an extra kick per measure. The extra kick must be on a quarter or eighth note grid
- Reduce gems around important off-beat accents and complex rhythms
- Sections without hi-hat gems can have Yellow Tom gems during a fill. This is a little easier for the player to read and play, without having to reach as far.

# COMMON AUTHORING MISTAKES

Avoid these mistakes to improve your drum charts!

Do not author **drum fills** in

drum solo sections

gem

in-game

■ The crash cymbal should

Only author ghost notes

almost always be on a **Green** 

when they are clearly heard

Remember to use the disco

flip event when needed

(even at slow tempos to

It is best to author strongly

accented open hi-hats on a

\* Assuming that there are

few other sounds in the

section that already have

avoid crossovers).

Blue gem \*

Blue gems.

# EXPERT

- Only author one drum part at a time. The player cannot play a mix of studio and electronic drums at the same time
- Avoid crossovers except in highly technical songs \*

\* Examples include technical speed, death, thrash, math, prog, and metal songs

- There are conventions for authoring certain parts of the kit to certain gems. You should follow them
- Different toms should be different gems, if at all possible
- Remember to author drum fills and Overdrive phrases
- Overdrive phrases and drum fills cannot overlap

# HARD

 Thin out fast drum fills and remove the kicks from the fill \*

> \* Kicks can be kept if they are especially important to the fill.

# MEDIUM

- Three limb hits are not allowed
- Kick drums are not allowed on the off-beats
- Remove the kicks from all drum fills
- Try to maintain the feel of the song. \*

\* If an off-beat rhythm is important, then make room around the off-beat gems.

# EASY

- The snare and the crash cymbal are always more important than the kick. Author your charts accordingly
- Quieter sections and verses tend to be authored with the kick and snare
- Louder sections and choruses are best authored for hands only \*

\* For example, **hi-hat and snare**.

 Do not pair any other gems with a kick

# KIT LAYOUT FOR DRUM ANIMATIONS

This kit layout for drum animation matches the in-game gem colors.

The graphic is color coded to the gems played in-game.

Percussion is mounted above the kick.

The percussion on the in-game kit is typically a cowbell.



ANIMATIONS LIST

The C3 Template contains many note rows for in-game drum animation.

51 D#2 Floor tom hit with right hand

50 D2 **Floor tom** hit with **left** hand

49 C#2 **Tom 2** hit with **right** hand

48 C2 Tom 2 hit with left hand

47 B1 **Tom 1** hit with **right** hand

46 A#1 **Tom 1** hit with **left** hand

42 F#1 **Ride** cymbal with **right** hand

41 F1 **Crash 2 choke** Right hand hit, choke with left

40 E1 **Crash 1 choke** Right hand hit, choke with left

39 D#1 **Crash 2 soft** hit with **right** hand 38 D1 **Crash 2 hard** hit with **right** hand

37 C#1 Crash 1 soft hit with right hand

36 C1 Crash 1 hard hit with right hand

35 B0 Crash 1 soft hit with left hand

34 A#0

Crash 1 hard hit with left hand

033 A0 **Percussion** with **left** hand **Note**: This animation does not work in RB3. Use percussion with right hand instead

32 G#0 **Percussion** with **right** hand

31 G0 **Hi-hat** hit with **right** hand

30 F#0 **Hi-hat** hit with **left** hand

27 D#0 **Snare** hit with **right** hand

### 26 D0 **Snare** hit with **left** hand

25 C#0 **Hi-hat pedal up** (hat open) with left foot. The hat stays open for the duration of the note. **Note:** The default is pedal down

24 C0 **Kick** hit with **right** foot

(hat closed)

28 (E0) **Snare soft** hit with **left** hand

29 (F0) **Snare soft** hit with the **right** hand

43 (G1) **Ride** hit with **left** hand

44 (G#1) Crash 2 hit with left hand

45 (A1) **Crash 2** soft hit with **left** hand

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# DRUM ANIMATIONS

# For the best drum animations use CAT.

When your drum chart is complete there are a few ways to approach drum animation:

- Use CAT
- Use Magma
- Manually create animations from the Expert drum chart

Using CAT is the recommended method. It produces the best animations with only a little amount of work required.

Magma will create drum animations if no gems are authored for animation. These animations are not as good as the ones produced by CAT.

Drums 🖃	☐ Soft as default for snare/crash	Create animations
Select grid	Min. cymbals hits:	
1/16 🖃	4	
C <sup>3</sup> Automa	tion Tools >	

Manual animations need the most work and are not recommended. The manual process involves dragging a copy of the Expert drum chart down to the animation rows below. From there you manually adjust notes to their correct positions.

74 Automatic drums animations

Select instrument CRASH1 as default crash

To use CAT for drum animations:

 $\times$ 

\_\_\_\_

✓ Make snare+Y toms flams

- Press F9 to open CAT
- Click the Automatic drum animations button

CAT animation options are discussed on the facing page.

# SELECT INSTRUMENT

Select a drum track from the drop down menu:

- Drums
- 2x Drums

# SELECT GRID

Choose the grid that best fits your PART DRUMS MIDI:

- 1/16th notes
- 1/32nd notes

# CRASH1 AS DFFAULT

Crash2 is the default crash for **animation**. This is the crash on the drummer's right. If you want to change the animation to the crash on the drummer's left:

• Check the Crash 1 as default crash checkbox.

### SOFT SNARE / CRASH

The default hit animation is a hard hit. To change the default to soft hits:

• Check the **Soft as default for** snare / crash checkbox

### MINIMUM CYMBAL HITS

This setting controls twohanded cymbal animation. The default setting is 4. This means that after 4 cymbal hits in a row a two-handed animation will happen.

### **SNARE / YELLOW** TOM FLAMS

A flam is the default animation for a snare and yellow tom. There is usually no need to change this setting.

drum animations.

CREATE

Review the tips on the next page to improve drum animations.

> Note: Complete your animations in PART DRUMS 2X if you

are using that track. Then copy your drum animations to the PART DRUMS track.

# DRUM ANIMATION TIPS

# CHARACTER ANIMATIONS

Follow these tips to increase the realism of your drum animations.

### ANIMATE DOUBLE **CRASHES**

Animate double crashes found in the original audio

This applies even if the double crashes are not authored as playable gems.

### SNARE AND TOM **ROLL ACCENTS**

Snare and tom rolls can't be accented like cymbals can. To make the drummer look like they are accenting a hit:

Try removing the note before the accent (for that hand)

This gives the animation time to lift the hand higher before the hit. You can also experiment with paradiddles and double strokes and give the accented stroke hit more time to lift:

- Paradiddle: RLRR LRLL
- Double Stroke: RLRLRR LRLRLL

### ADD REALISM TO FLAMS

To make flams look more realistic:

 Make the left hand fall slightly after the right hand

### HI-HAT PFDAL ANIMATION

The note that controls the hihat (C#0) opens the hi-hat for the duration of the note.

Try making the drummer tap their left foot to the beat when hi-hats are not being played.

This technique can add extra realism to your animations.

Do not use this technique if the drum part is sparse and the player can hear that the drummer is not using the pedal.

# HARD AND SOFT **CRASH RIDES**

Alternate between soft and hard hits on crash rides

This makes the animation look less robotic.

## UNCROSSED HANDS

Experiment with uncrossed hands:

Try the left hand on the hihat (or crash 1) with the right hand on the snare

This works best with broken rhythms more than a regular rock beat.

# USE A RANGE OF CRASHES

 Crashes should be as varied as the original performance

Character animations change the actions and attitude of in-game characters.

# ANIMATION MARKERS

Text events are placed to set the character animation state: [play] Use CAT to create play, idle, and idle realtime text events:

Press F9 to open CAT

Press the Automatic animations button

Manu anima table

ally add the other	
ally add the other	
ation text events from the	[play]
as needed.	

CHARACTER
ANIMATION

TEXT

**EVENTS** 

[idle_realtime]	The character does not move to the beat of the music. The character is waiting for their cue. This is useful in slower songs, or slow parts in a song.
[idle]	The character will bop and wave to the beat of the music. Use [idle] before the song starts, after the song finishes, or during downtime. Downtime is at least two measures of rest.
[idle_intense]	Character is idling in an intense manner.
[play]	The character is playing.
[mellow]	The character is playing in mellow manner. They might hit softer.
[intense]	The character is playing in an intense manner. For example, aggressive metal.
[ride_side_true]	Drummer uses Max Weinberg's side swipe when slowly hitting the ride cymbal.
[ride_side_false]	Drummer hits the ride normally.

# CHARACTER ANIMATIONS (CONTINUED)

Use the instrument text event list for character animation text events.

### ANIMATION EVENT LIST

Try to avoid typing text events by hand. Load text events into REAPER as follows:

 Double-click in the text event area of the MIDI track

The **Add Text Event** window will open:

- Click the Load button
- Browse to C:\Reaper\Data\ Text\_strings\
- Select Text Events List -Instruments.txt
- Click Open

The **Text** drop down menu now shows Hand Maps and other animation text events. Use this list instead of typing text events in manually.

**Note**: You can find a complete guide for loading text events on pages 125 — 126.

Text: Type: [clap_start] Position: [cowbell_end] [cowbell_start] [idle] [idle_intense] [idle_realtime] [intense] [map HandMap_AllBend] [map HandMap_AllChords] [map HandMap_Chord_A] [map HandMap_Chord_D] [map HandMap_Default] [map HandMap_DropD] [map HandMap_DropD] [map HandMap_DropD2] [map HandMap_Solo] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [play] [play_solo] [ride_side_false]	Add Text E	Event
Text: Type: [clap_end] [clap_start] Position: [cowbell_end] [cowbell_start] [idle] [idle_intense] [idle_realtime] [intense] [map HandMap_AllEhords] [map HandMap_Chord_A] [map HandMap_Chord_D] [map HandMap_Chord_D] [map HandMap_Default] [map HandMap_DropD] [map HandMap_DropD2] [map HandMap_NoChords] [map HandMap_Solo] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [play_solo] [ride_side_false]		
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[dle] [idle_intense] [intense] [map HandMap_AllBend] [map HandMap_AllChords] [map HandMap_Chord_A] [map HandMap_Chord_D] [map HandMap_DropD] [map HandMap_DropD] [map HandMap_DropD2] [map HandMap_NoChords] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [play_solo] [play_solo] [ride_side_false]	Position:	[cowbell_end] [cowbell_start]
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[map HandMap_Chord_A] [map HandMap_Chord_C] [map HandMap_Chord_D] [map HandMap_DropD] [map HandMap_DropD] [map HandMap_NoChords] [map HandMap_Solo] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[map HandMap_AllChords]
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[map HandMap_DropD2] [map HandMap_NoChords] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[map HandMap_DropD] [map HandMap_DropD2]
[map HandMap_Solo] [map StrumMap_Default] [map StrumMap_Pick] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play] [play_solo] [ride_side_false]		[map HandMap_DopD2] [map HandMap_NoChords]
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[map StrumMap_Nex] [map StrumMap_SlapBass] [mellow] [mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[map StrumMap_Default] [map StrumMap_Pick]
[mellow] [mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[map StrumMap_SlapBass]
[mix 0 name] [mix 1 name] [mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[mellow]
[mix 2 name] [mix 3 name] [play] [play_solo] [ride_side_false]		[mix 0 name] [mix 1 name]
[mix 3 name] [play] [play_solo] [ride_side_false]		[mix 2 name]
[play] [play_solo] [ride_side_false]		[mix 3 name]
[ride_side_false]		[play] [play_solo]
		[ride_side_false]

 $\times$ 

<

# DRUMMER ANIMATION EXAMPLE

Character animations should not be added during the count-in.



# DRUM MIX EVENTS

Use additional drum mix text events for multitrack songs. You do not need to add mix events for regular stereo audio files.

# MIX EVENTS OVERVIEW

Earlier in the chapter we used drum mix events to control disco flips.

Here we discuss using them to mute and unmute multitrack audio streams.

We need to do this because artists record and mix drum kits in many different ways.

A drum multitrack can, for example, contain a mix of various mono and stereo tracks.

We need drum mix events to tell the game which audio stream to unmute for each drum pad.

### There are **five audio stream configurations** (numbered from zero to four):

0 = Drum Mix 0 1 = Drum Mix 1 2 = Drum Mix 2 3 = Drum Mix 3

4 = Drum Mix 4

There are also four difficulty configurations (numbered from zero to three):

> 0 = Easy 1 = Medium 2 = Hard 3 = Expert

Drum mix events are formatted as follows:

[mix X drumsY]

The X and Y variables are:

X = difficulty

• Y = audio configuration

For example, [mix 3 drums0] means, **Expert difficulty** and **Drum Mix 0**. This is the default drum mix for Expert drums.

**Note:** [mix 3 drums0d] is a variant of drums0 that turns on **disco flip** for **Expert**.

In the graphic on the facing page, you can see the drum mix events included in the PART DRUMS C3 template:

- [mix 0 drums0]
- [mix 1 drums0]
- ∎ [mix 2 drums0]
- [mix 3 drums0]

These events enable **Drum Mix 0** for each difficulty. This means that the C3 template is set up for a single audio stream.

> \* **Note**: On the facing page **Else** refers to the stream that contains cymbals, toms, room mics, and percussion.



# DRUM MIX 0

**drums0** is the default configuration in the drums template. It supports:

 A single stereo stream for the whole kit

Hitting any pad or pedal will unmute the audio stream.

**drums0d** is the disco flip variant of **drums0**:

- Yellow = snare
- Red = Else \*

\* In drumsYd the Red pad is assigned to **Else** for disco flip scoring.

This is so that the yellow snare is weighted more heavily than the red hi-hats.

# DRUM MIX 1

drums1 supports:

- Mono kick, mono snare, and stereo kit (Else)
- **drums1d** is the disco flip variant of **drums1**:
- Yellow = snare stream
- Red = Else \*
- The following mix events are **no longer supported** in RB2 or 3:
- drums1easy:drums1 for sections with no Else gems to unmute in Easy
- drums1easynokick:drums1 for sections with no kick gems to unmute in Easy

DRUM MIX 2

### drums2 supports:

 Mono kick, stereo snare, and stereo kit (Else)

**drums2d** is the disco flip variant of **drums2**:

- Yellow = snare stream
- Red = Else \*

The following mix events are **no longer supported** in RB2 or 3:

- drums2easy:drums2 for sections with no Else gems to unmute in Easy
- drums2easynokick:drums2 for sections with no kick gems to unmute in Easy

# DRUM MIX EVENTS (CONTINUED)

# PRO DRUMS "NOFLIP"

The "noflip" event is for disco-like beats.









## DRUM MIX 3

### drums3 supports:

 Stereo kick, stereo snare, and stereo kit (Else)

**drums3d** is the disco flip variant of **drums3**:

- Yellow = snare stream
- Red = Else \*

The following mix events are **no longer supported** in RB2 or 3:

- drums3easy:drums3
   For sections with no Else gems to unmute in Easy
- drums3easynokick:drums3
   For sections with no kick gems to unmute in Easy

# DRUM MIX 4

 $\ensuremath{\textit{drums4}}$  supports:

 Mono kick and stereo kit (Else and snare mixed into one stereo stream)

**drums4d** is the disco flip variant of **drums4**:

### Yellow = snare stream

Red = Else \*

The following mix events are **no** longer supported in RB2 or 3:

- drums4easy:drums4
   For sections with no Else gems to unmute in Easy
- drums4easynokick:drums4
   For sections with no kick gems to unmute in Easy

USING MIX EVENTS

If you use multitracks you can edit the existing drum mix events at the start of the PART DRUMS track.

For example, if you have a drum audio stream that consists of:

- Mono kick
- Stereo snareStereo Else

Edit the default drum mix events as follows:

- ∎ [mix 0 drums2]
- [mix 1 drums2]
- [mix 2 drums2]
- [mix 3 drums2]

# DISCO-LIKE BEATS

Earlier in the chapter we saw how to flip disco beats with the **drums0d** mix event.

The **noflip** event is used for similar, but less common, disco-like beats. For example:

- Alternating 16th notes on a regular drum pad, with
- Accented hit on the yellow cymbal / tom

In this case you would use the "noflip" mix event:

[mix 3 drums0dnoflip]

This event flips the note weighting (just like a regular disco beat). But it does not flip the gems between the Basic and Pro drum modes.

You can see the flipped note tiers at the end of each chart.

Remember, missing higher tier notes [3] will fail the player faster than lower tier notes [1].

# EXAMPLE REDUCTION: "CRAZY TRAIN"





Hard has less hand motion on the crashes. A 16th note snare is removed from the start of the fill to keep it on grid (end of measure 19). In Medium the 8th note tom pairs have been reduced to single toms. Three limb hits are reduced. The kicks have also been reduced. E In Easy the toms are reduced to single half notes. \* You could make the case to keep the half note kick, but Harmonix chose not to. Hard reduces the fill to 8th notes. The disco beat is charted as an "8 beat". For details see the "Disco Beat to '8 Beat" topic on page 358. Medium reduces the fill to quarter notes. The "8 beat" is reduced to quarter notes. Quarter note kicks are further reduced. Easy keeps the quarter note fill from Medium. The 8 beat is reduced to a snare and kick beat. **Note**: The chorus (not shown) has a two-handed beat.

- Author the rhythms of the actual drum performance.
- Adjust the gems to best fit the Rock Band kit.
- It is not always best to force note consistency.
- Pay attention to left and right hand sticking so that the player's hands do not cross.
- Author flams as a single hit on two pads.
- Use drum mix events and CAT to flip 'disco beats'.
- Consider authoring cymbal swells to a single lane (usually Green).
- Use drum roll lanes for rolls that are too fast for the stock Rock Band kit.
- Use CAT for drum animations.



# INTRO TO GUITAR, BASS, AND KEYS

- Note consistency
- Lane consistency
- Motion

# There are a few rules and concepts that guitar, bass, and keys share.

In this chapter we discuss some broad concepts and shared rules. They includes:

- Using gem colors for particular note pitches
- Preserving the flow and motion of gems
- The gem focus for each difficulty
- Why you should quantize your authoring
- How to wrap gems for each difficulty
- The basic chord types for Rock Band
- How to author sustained notes and HOPOs

When there are differences between instruments you will see these icons:

G Guitar B Bass

Keys

Κ

Guitar, bass, and keys charts start with the expert difficulty:

- Author the precise rhythms of the guitar, bass, or keys performance
- Adjust the notes to best fit each instrument

Simplify the Expert chart for each difficulty, one at a time.

# NOTE AND CHORD CONSISTENCY

Notes should keep the same gem color where possible.

Try to be consistent with notes and gem color. For example, if you use a red gem for an A note, try to use red gems for that A throughout the whole song.

You can see this in the Note Consistency graphic. The A note is repeated on the red gems. Here the author would try to keep that A note paired with a red gem for the rest of the song.

The same logic applies to chords. If you use Green and Yellow notes for an E chord, it should be used for that chord for the whole song. Perfect consistency is not always possible, though. Most songs have more than the five notes and seven basic chords found in Rock Band. Try to be as consistent as you can.

NOTE CONSISTENCY





# PRESERVE MOTION

Make sure that your chart feels right to play.

The motion and flow of gems that you author should make your song feel right to play.

You should **preserve this flow** of motion **even if it means breaking note consistency**. For example, if our red A note is part of an ascending melodic line it is OK to move it to another gem color.

This will preserve the flow of the melody and capture the feeling of playing a higher note. For chords you should make sure that the motion is correct. For example:

- A Red Blue chord is higher than a Green Yellow one
- A Yellow Orange chord is higher than a Red Blue one





# LANE CONSISTENCY AND GEM FOCUS FOR GUITAR AND BASS

Each gem color found in expert must be used at least once in the other difficulties.

To the right you can see the gem focus for guitar and bass:

- Expert and Hard focus equally on all five gem colors
- Medium focuses on four notes at a time (Green, Red, Yellow, and Blue)
- Easy focuses on three notes at a time (Green, Red, and Yellow)

If your song uses all five gem colors in Expert you should:

- Include at least one Orange gem in Medium, and
- Include at least one Orange and Blue gem in Easy

It is up to you where you add these notes.

Notice that playing these notes in Medium and Easy requires a hand position (gem focus) shift.

**Note:** Any gem color missing from Expert should not appear in any other difficulty.



QUANTIZED MIDI NOTES

Our game is very precise, but rock and roll is not.

Musical performances are full of imperfections.

We tend to notice the really obvious ones, like a guitar string breaking, or a wrong note.

But we don't really notice the smaller imperfections. They are part of the performance and are often very intentional.

There are plenty of songs where the point is to be chaotic, imprecise, and noisy.

This is certainly the case with rock and roll music.

So, how do we handle this in Rock Band?

The short answer is that we quantize MIDI notes to the grid. This means that in our charts we remove imperfections from the performance.

We do this for the **sake of** gameplay.

Sight-reading a Rock Band chart is a bit like reading sheet music.

Both use a short-hand form of notation to communicate which notes to play, and when.

In Rock Band this is tied to a scrolling note highway with downbeats, beats, and eighth note divisions.

The actual performance will likely vary to some degree from these exact and precise divisions.

Charting any imprecision found in the actual performance would not look good in-game.

Charts would be much harder to sight-read and **much less** intuitive and enjoyable to play.

So, it is preferable to chart even a chaotic part to the grid (for the sake of gameplay).

To guantize your MIDI leave the Snap to Grid feature on when drawing notes in REAPER:



Finally, choose an **appropriate** grid size to author to.

Usually this is a 16th or 32nd note grid. Sometimes you may also need a triplet grid.

Dotted lines indicate

a hand position shift.

See page 511 for lane consistency for keys.

# WRAPPING NOTES

When melodic lines have more than five notes we wrap gems into simple patterns.

We often have more notes than we can fit in our range of five colored gems. And, on lower difficulties, this problem increases because we have fewer gems to work with.

Wrapping gems helps to solve this issue.

The most common pattern that we use for wrapping is groups of three gems. You can see this in the Expert chart:

- Orange, Blue, Yellow
- Blue, Yellow, Red
- Yellow, Red, Green

If it fits with the audio you can use other patterns. For example a four note pattern:

- Orange, Blue, Yellow, Red
- Blue, Yellow, Red, Green

You can see examples of both options on the Hard and Medium difficulties. **Choose the one that works the best**.





# CHORDS

There are five basic types of chords in Rock Band. Each chord type has its own feel.

**12 chords** feel good for bar chords and power chords. They also work well for:

- Two note chords (dyads)
- Thirds
- Fourths
- Small sounding chords

**13 chords** make up the majority of "normal" chords used in Rock Band. They usually feel like power chords and bar chords.

**1 4 chords** feel good for octaves. They also work well for suspended chords.

**15 chords** also feel good for octaves, but are **expert only** chords. Use them as sparingly as possible.









Three note chords are usually used for non-standard or "big" sounding chords:

- Augmented chords
- Seventh chords
- Diminished chords

You can also use them for normal chords with a second guitar playing a higher or dissonant note.

1 2 chords are commonly used to **convey motion** in long chord sequences.

You can find example chords for guitar on the next page.

**Note**: There are other 3 note chords that are for keys only.

See page 512 for more details.

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# EXAMPLE CHORDS

Listen to the example chords if you don't know what each type sounds like.

It is not easy to describe what particular chords sound like. It is best to play them, or listen to them for yourself.

The example chords here are the main types discussed in the previous topic. The graphics show how to play each chord type on the guitar.

You can translate the chord structures to other instruments if you would like. Or, if you don't have a suitable instrument, you can watch a YouTube video that illustrates this content:

youtu.be/65p\_9NKKUDo





# SUSTAINED NOTES

A sustained note is a note that is held for a period of time.

Follow these rules for using sustained notes in Rock Band:

- Notes with no sustain should be no longer than a 1/16th note
- No note should be shorter than a 1/64th note

In the example to the right the first chord is 2/16th notes long. It should not be sustained.

There should be a gap between the end of a sustain and the start of the next note:

- The gap should be at least a 1/32nd note gap
- A 1/16th note gap is standard

In this example the sustained chord is too long. It is touching the 16th note that follows it.



1/16th note



CORRECT

1/16th note gap

INCORRECT CORRECT

< 100 BPM > 100 BPM

Notes should not overlap:

 Guitar and bass notes should never overlap

G

В

If a note begins before the end of another note (or chord) it will not appear in-game.

**Note:** There are separate rules for sustains on keys. See pages 513 — 514 for details.

You can author short sustains at slower tempos:

- At less than 100 BPM only author sustains for notes longer than an 8th note
- At more than 100 BPM only author sustains for notes longer than 3/16th notes

# SUSTAINED NOTES AND SONG TEMPO

In CAT sustain note length is set according to song tempo and instrument difficulty.

We use CAT to automate many authoring tasks. One of these tasks is managing the length of sustain notes.

CAT sets sustain note length based on:

- Song tempo, and
- Instrument difficulty

For example, a slow song will have a smaller sustain note gap than a faster song.

The following functions in CAT set sustain note length for you:

- Automatic reduction (5-lane)
- Fix sustains

The graphics show how sustain note length and gaps vary with tempo and instrument difficulty.









I recommend that you let CAT manage your sustain notes.

This will ensure that they are:

- Consistent
- Appropriate for different tempos
- Appropriate for each instrument difficulty

Note: In CAT the Automatic reductions (5-lane) function will ony adjust sustain note length for Hard, Medium, and Easy. To shorten Expert sustains use the Fix sustains function in CAT.

Turn to chapter 21 to learn how to use CAT.

# HOPOS: HAMMER-ONS AND **PULL-OFFS**

HOPOs are the smaller notes displayed on the guitar, bass and keys tracks.

## **AUTOMATIC** HOPOS

Automatic HOPO notes are found in the Expert and Hard difficulties. They show quick changes between notes of different colors.

Note: A quick change is a sixteenth note or faster.

Runs of notes of the same color are never HOPOs, no matter how fast they are played.

You do not have to do anything special for HOPOs to appear in the game track.

You can see this in the "Automatic HOPO: 16th Note Pitch Bend" image on this page. The Blue and Orange notes are a sixteenth note apart. The Orange HOPO has been automatically generated.

You can find a longer example in the guitar part of "Landslide" by Fleetwood Mac.

The first Yellow gem of the song is not a HOPO. This is because it does not have any sixteenth notes that come before it. The



Automatic HOPO notes with the letter "H" under them.

fourteen 16th notes that follow it are all automatic HOPOs.

The first Green gem of the second measure is also not a HOPO. This is because there is a sixteenth note gap between this Green gem and the Red gem before it.

Н

# **GUITAR HOPO TECHNIQUES**

On guitar, hammer-ons and pull-offs allow you to play many notes without picking each note. Several common guitar techniques use HOPOs:

- Trills
- Fast runs of notes, picking one note per string
- Using HOPOs with right hand tapping techniques
- Using HOPOs with the whammy (tremolo) bar



You can play guitar and bass HOPOs without strumming them.

# **AUTHORING** HOPOS

Expert HOPOs are authored on notes 101 F5 and 102 F#5:

> Force HOPO Off Force HOPO On

Use these notes to force HOPOs on or off.

Note: HOPO on / off notes should be the same duration as the notes or chords that they apply to. You can author Hard difficulty HOPOs on guitar and bass (but not keys).

Guitarists sometimes play notes or chords that are not strummed. If there is enough space around this note a HOPO is not generated. In this case we force a HOPO on for that note or chord. We do this for musical feel and do so sparingly. You can see an example of this in the chart and preview below.

The yellow HOPO gem is a forced HOPO. The Orange HOPO is automatically generated.





Pitch Bend

- Author the rhythms performed for each instrument.
- Adjust the gems to fit each instrument.
- Keep pitches and gem color consistent where possible.
- Preserve the flow and motion of gems (even if it means breaking note consistency).
- Use five lanes for Expert and Hard. Use four lanes for Medium and three for Easy.
- Use the gem colors authored in expert at least once in the other difficulties.
- Quantize all notes for the sake of gameplay.
- There are five basic chord types in Rock Band. Each has its own unique feel.
- Leave a 1/6th note gap between the end of a sustain note and the start of the next note.
- Any note longer than 1/16th note is a sustain note.
- Automatic HOPOs are fast consecutive notes that are different colors (16th notes or faster).

# GUITAR AND BASS

- Expert, Hard, Medium, and Easy
- Guitar animations

13

Common authoring mistakes

In the previous chapter we reviewed the shared concepts for guitar, bass, and keys. In this chapter we take a closer look at how to author guitar and bass.

The main topics for this chapter follow the official Rock Band Network documentation:

- Rules for authoring Expert, Hard, Medium, and Easy
- Adding Orange gems to Medium
- Common authoring mistakes
- Authoring trill and strum markers
- Character animation
- Left and right-hand animation

Extra content is also provided:

- 14 power chords in Rock and Metal
- Chord change HOPOs
- Hard difficulty example reductions



# GETTING STARTED WITH EXPERT GUITAR AND BASS

Listen to the guitar part and review the PART GUITAR/BASS templates before you start to author.

# BASIC GUITAR / **BASS LAYOUT**

The gem layout for basic 5-Lane guitar is as follows:



Expert can use all five gems.

To change the PART GUITAR template to Rock Band colors see pages 121 — 122.

To add a percussive sound to your gems see page 293.

### EXPERT **OVFRVIFW**

In this chapter we cover guitar and bass:

- Author guitar on the **PART GUITAR** track
- Author bass guitar on the PART BASS track
- Expert gems are MIDI notes 96 (C6) to 100 (E6)

You can see Expert MIDI notes in the graphic to the right.

Author guitar and bass as follows:

- Start with Expert and rhythmically chart the actual guitar performance
- Adjust the notes to best fit the five basic gems

Note: When we talk about guitar assume that we are also talking about bass. The differences between the two instruments are minor.

# EXPERT GUITAR / BASS TEMPLATE

PART GUITAR Trill Marker ---BRE BRE BRE BRE BRE ---Overdrive ---Solo Marker Force HOPO Off Force HOPO On Expert Orange Expert Blue **Expert Yellow** Expert Red Expert Green

# **REVIEW THE "INTRO TO GUITAR, BASS,** AND KEYS" CHAPTER

In Chapter 14 we talked about the shared rules for guitar, bass, and keys. This included:

- Note Consistency When to tie notes and gem colors together
- Chord Consistency Consistent use and motion of chords
- Preserving Motion The flow and motion of gems. How the song feels to play
- Lane Consistency The lane focus for each difficulty. This includes gem consistency between each difficulty
- Ouantized MIDI Notes Chart notes to the MIDI grid. This removes imperfections found in the original performance

### Wrapping Notes Author melodic lines into patterns that fit in a five gem range

- Chords The five basic chord types and their "feel"
- Sustained Notes The rules for authoring held notes
- HOPOs Automatic HOPOs and how to turn HOPOs on and off

You should review these topics before you start to author your guitar chart.

This chapter contains additional information that is specific to guitar and bass.

Consistency can be hard to achieve when authoring bass. This is because bassists often change register in different sections of a song.

**BASS GUITAR** 

AUTHORING

For example, they may drop down an octave in the chorus. Or they may slide up an octave in the bridge.

В

The solution is to:

- Author each section separately
- Use the pattern that feels best for each part
- Maintain consistency in each section as much as possible

Rules that apply only to bass are highlighted with this icon.

# **CHORDS**

# Some three note chords are not allowed on guitar and bass.

# PROHIBITED CHORDS You can use all the **KEYS ONLY** chord types shown below for guitar, bass, Three note chords that include or keys. Green and Orange gems are not allowed on guitar and bass. GUITAR, BASS, AND KEYS CHORDS ALLOWED CHORDS The two graphics on the right show all the chords allowed on guitar and bass. To review these chords in more detail see pages 391 — 392.

# **SUSTAINS**

A brief refresher on the rules for sustains.

# SUSTAIN NOTE GAP REVIEW

Let's quickly review the standards for sustain notes:

The standard gap between the end of a sustain and the next note is:

A 16th note gap on Expert and Hard \*

\* A 32nd note gap is also allowed on Expert, but this is not standard

• A quarter note gap for Medium and Easy

I recommend that you:

- Use CAT to reduce your guitar / bass charts, or
- Use the **Fix sustains** function in CAT

# SHORT SUSTAIN NOTE REVIEW

Short sustains (3/16th notes) are allowed below 100 BPM:



Short sustain are not allowed above 100 BPM:

> 100 BPM

A visual guide for sustain note rules for guitar, bass, and keys is on pages 395 - 398.

OTHER SUSTAIN

On guitar and bass notes are

■ Any note longer than a 1\16th

not allowed to overlap

note is a sustain note

 No note should be shorter than a 1/64th note

NOTE RULES

# EXPERT

Tips and tricks for authoring Expert guitar and bass.

### SOLO THE GUITAR TRACK

If you are using separated audio or stems:

- Solo and listen to the guitar part all the way through before authoring
- Pay attention to changes between sections, chords, and melodic lines

This will give you a sense of the structure of the song. With this, there should be less need to make big changes to your authoring as you progress.

### LISTEN TO THE FULL MIX

If you do not have stems or separated audio:

Listen to the full mix. turned down

This will help you focus on the rhythm and musical context of the part that you are authoring.

### THE MAIN RIFF OR PROGRESSION

Start by authoring the main riff or chord progression:

 Build the rest of your authoring around that central element

Knowing how you want the most important part to feel will help inform you on how to author the rest of the song.

### **REPETITION IN** SONGS

Some songs may contain a lot of repetition. In this case it can often be faster to:

- Author the repeating section for all difficulties, then
- Copy and paste the section through the rest of the song

## MIDI CHART VS **GUITAR PART**

You should not try to make your Expert chart harder than the actual guitar performance.

Charts can be extremely difficult if that is what the actual guitar part calls for.

Check out the songs below for some examples:

- "Thrasher" by Evile 16th notes at 208 BPM
- "Caprici Di Diablo" by Yngwie Malmsteen 16th note triplets at 166 BPM
- "Bodhisattva" by Steely Dan 16th notes / fast chord changes at up to 220+ BPM

# NO OVERLAPPING NOTES

Make sure that there are no overlapping notes:

- Notes in chords should begin and end at the same time
- Single notes and chords must end before the next note or chord begins

**Note**: The transparent notes shown below should be removed.



# PICK-UP NOTES BETWEEN CHORDS

Author pick-up notes between chords.

When guitarists strum chords there is often a "pick up" sound between chords. This is usually an 8th or 16th note.

Try to author pick-ups as single note(s):

■ The "pick-up" should be the lowest note of the chord that you are moving to

Pick-up notes make it easier for the player to get to the new chord. They give the part a more musical feel, as there is movement between chords when playing an actual guitar.

For example, see how Harmonix charted "How You Remind Me" by Nickelback (below).





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# EXPERT (CONTINUED)

# AUTHORING PITCH BENDS

Pitch bends in melodic lines and solos are authored as follows:

 Add a 16th note at the start of the note, one gem lower than the target gem

### MUTED GUITAR CHORDS

Guitar players often mute single notes or chords. They do this by resting their strumming hand on the strings while playing.

To translate this to Rock Band we author muted chords as single notes. This highlights the contrast between chords that ring out and muted notes.

### it is only authored on Green. (The red notes of the muted E chord are not authored):



The Innovercel riff of "Courth

The [preverse] riff of "South of Heaven" (below) mixes chords with muted single notes.

# AMBIENT GUITAR NOISE

There is a lot of ambient guitar noise in rock music. This noise is not usually caused by strumming but by:

- Feedback
- Delay
- Other guitar FX

### Guitar noises like this often have little obvious rhythm. The best way to author these sounds is with a stream of sixteenth notes. This is a lot more satisfying then playing long sustain notes.

"Lazy Eye" by the Silversun Pickups is a good example.

# AUTHORING TRILLS

Author trills as alternating notes that are next to each other.

Use 16th notes (or other notes if they match the rhythm better).

Trills usually drift away in time from the grid, but this method feels the best to play.





For example an E chord might The [p be authored on Green and Red. Heave If the same chord is muted then with r



<sup>:</sup> Palm muted single notes on the open E string.

# HARD

Hard should be the "reasonable" version of Expert. Expert players should be able to score 100% on Hard with minimal practise.

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### HARD GUITAR OVERVIEW

Author Hard gems on notes 84 (C5) to 88 (E5):

PART GUITAR

Hard Orange Hard Blue Hard Yellow Hard Red Hard Green

Hard can use all five gems.

Reduce your Expert chart:

- Press F9 to open CAT
- Click the Automatic
   reduction (5-Lane) button
- Uncheck Medium and Easy
- Under Options make sure that the instrument is set to Guitar or Bass
- Click the Reduce button

### REMOVE SUBTLE VARIATIONS

Start note reduction for Hard by removing subtle variations. This will make parts that are more consistent to play:

- Start by removing motion or strumming that is a 16th note or faster \*
- Adjust note wrapping for Hard. See page 421.

### CHORDS AND FAST CHANGES

Keep all chords from Expert unless it does not make sense to do so. For example, when:

 Chords represent harmonizing guitar parts or strong harmonics

**Note**: Fast chords / chord bends can be difficult for Hard players.



\* **Note**: This is based on the tempo of the song.

# NO THREE NOTE NOTE CHORDS

Three note chords are not allowed in Hard. 1 4 chords can be a good replacement.

For example, "Closer To The Heart" by Rush (below).

# NO GREEN / ORANGE CHORDS

Green / Orange chords are not allowed in Hard. 1 4 chords can be a good replacement.

For example, "Blood And Thunder" by Mastadon (below). In this case the Green / Orange chord is reduced to a 1 2 chord.



For example, "And Justice For

See "Fast Chords" graphic. Or,

"Surfing With The Alien" by Joe

Satriani (168 BPM). See "Fast

In other cases Harmonix has

reduced Expert chords to single

notes in Hard. For example, the

[intro] to "And Justice For All".

Bends" graphic.

All" by Metallica (178 BPM).





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# FAST JUMPS • . . ł

# **GREEN TO ORANGE JUMPS**

Try to avoid quick Green to Orange jumps on Hard.

For example, in "Tornado of Souls" (below) the Orange to Green jump is removed. The tempo is 180+ BPM.

On fast songs consider changing 8th note Green to Orange jumps

# • Left hand chord fingering • Left hand position up or to Green / Blue. transitional "pick up" sound between the first and second Reducing a pick up chord to a

A pick up chord is a chord that

To change chords the guitarist

will change one, or both, of the

is played before or during a

series of strummed chords.

down the fretboard

This often produces a

single gem helps to:

 Make fast tempo songs easier to play

easier to manage

Make hand position changes

following:

chords.



HARD (CONTINUED)

# SUSTAIN NOTE LENGTH

Durations in Hard should be the same as in Expert. \*

\* Unless the sustains are visually too short. In this case they should be changed to sixteenth notes.

# CHORD TO CHORD HOPOS

In Rock Band, fast movement between chords is represented with HOPOs.

On Hard, chord to chord HOPOs are reduced to:

■ Single note to chord HOPOs







HOPO notes and chords have the letter "H" underneath them.

# **8TH NOTE PICK UP CHORD**

There are situations where Expert chords can be reduced to single notes in Hard.

For example, an 8th note pick up chord before a series of chords can be reduced to a single gem.



# HARD TIPS AND TRICKS

Some additional tips and tricks for authoring Hard guitar.

# KEEP THE RHYTHMIC FEEL

If the strong beats of a song are upbeats, or syncopated, do not remove them in haste.

Removing every other 16th note is not always the best way to reduce notes.

It is better to leave more space between syncopated notes than to leave them out.

# HEART OF GLASS"



There are two ways to reduce 16th note triplets for Hard:

- Remove the second note of each triplet (method A)
- Remove the third note of each triplet (method B)

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Choose the method that feels the best to play. Both methods:

- Preserve the syncopated groove of the triplet
- Make the part easier to play

# DO NOT EXTEND REDUCED NOTES

When you reduce notes do not extend any of the remaining notes to fill space.

Note reduction gives the player extra time to prepare for the notes to come.

This extra space is just as important as the notes played.

# DO NOT EXTEND NOTES

### reduced notes.

# CONTINUOUS 8TH NOTES

For continuous 8th notes the official docs recommend:

 At 160+ BPM, remove every fourth 8th note per half measure

For example, "Walk of Life" by Dire Straits (170 BPM). In practice Harmonix does this:  Remove the last 8th note per measure

> For example, "Hanging on the Telephone" by Blondie. If the 8th notes are very fast and have motion, then try to keep the motion notes for Hard. For example, "Caught in a Mosh".



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# HARD TIPS AND TRICKS (CONTINUED)

After removing 16th notes in Hard remember to adjust your note wrapping.

## WRAPPING NOTES ON HARD

You may have to wrap notes for each difficulty after notes have been removed.

For example, below is a descending line of 16th notes that have been reduced to 8th notes for Hard. As you can see the Hard reduction does not preserve the motion of the Expert chart.

The "Correct Wrapping" graphic shows the correct way to reduce and wrap notes. This Hard chart has an 8th note spacing with wrapping that preserves motion.

As you can see, more space between notes allows for more linear motion.



# MEDIUM

Try to keep the rhythmic and melodic feel of Expert and Hard but in a way that is much easier to play.

# MEDIUM GUITAR OVERVIEW

Author Medium gems on notes 72 (C4) to 75 (D#4):

### PART GUITAR

Medium Orange Medium Blue Medium Yellow Medium Red Medium Green

Medium focus is on the Green to Blue gems.

Reduce your Hard chart:

Press F9 to open CAT

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- Click the Automatic
   reduction (5-Lane) button
- Uncheck Hard and Easy
- Under Options make sure that the instrument is set to Guitar or Bass
- Click the **Reduce** button

## REMOVE 8TH NOTES

Removing the remaining 8th notes from Medium is a good way to reduce from Hard:

 Try to only have playable notes on strong quarter note beats

**Note**: You can keep some 8th notes in Medium. But the context, song BPM, and instrument tier are key factors in this decision.

You can see examples of strong quarter note beats and some off beat notes below. The song in both of these examples is "Roundabout" by Yes.



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# MEDIUM (CONTINUED)

Keep chords from Hard and avoid fast chord changes.

# **KEEP CHORDS** FROM HARD

Keep all chords from Hard unless it does not make sense to do so. For example, if:

 Chords represent harmonizing guitar parts or strong harmonics

### **AVOID FAST** CHORD CHANGES

Try to avoid fast chord changes.

There are a couple of ways to do this. For example, you can change fast chords into single notes. For example, "And Justice For All" by Metallica. The tempo is about 98 BPM.

If you keep chords take the musical context and instrument tier into account.

In "Walk" by Pantera the Expert chords have a Green root note between them. These notes were removed in Hard. The chords are further reduced for Medium. The BPM is 125.

# Three note chords, 14 chords, and 15 chords are not allowed on Medium.

# NO THREE NOTE **CHORDS**

Three note chords are not allowed on Medium.

For example, "Barracuda" by Heart (below):

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NO 3 NOTE CHORDS

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# NO 1 4 CHORDS

Green / Blue and Red / Orange chords are not allowed in Medium.

Reduce 1 4 chords from Hard to 12 or 13 chords for Medium.

For example, "Rainbow in the Dark" by Dio (below):

NO 1 4 CHORDS

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# NO GREEN / **ORANGE CHORDS**

Green / Orange chords are not allowed in Medium.

Reduce 1 5 chords from Hard to 1 2 or 1 3 chords for Medium.

For example, "Barracuda" by Heart (below):



NO 1 5 CHORDS

"WALK" BY PANTERA






# MEDIUM (CONTINUED)

### Sustain notes should be shorter in Medium. Avoid quick jumps from low to high notes.

# SUSTAIN NOTE DURATION

Sustains should be shorter in Medium to give the player more time between notes:

- Try to leave a quarter note between the end of a note and the start of the next
- Use the Fix sustains script in CAT to correct sustain notes



Reduce sustains with a 3/16 note duration to 16th notes. You can see an example of this in "Foolin'" by Def Leppard. See the "Sustain Duration" graphic.

Note: If you manually shorten sustains look out for note tails that are too short.

Change any sustain that looks too short in-game to a standard 16th note.

**Note**: Pre-RBN songs have an 8th note gap between sustains. For example, "Smoke on the Water" by Deep Purple.

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SMOKE ON THE	WATER"	
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### AVOID QUICK JUMPS

Try to avoid quick jumps between low and high notes:

- Green to Blue or Orange
- Red to Orange

For example, "Caprici di Diablo" by Yngwie Malmsteen. Tempo is 156 — 171 BPM. Impossible tier.



# KEEP THE RHYTHMIC FEEL

If the strong beats of a song are upbeats, or syncopated, do not remove them in haste.

Removing every other 8th note is not always the best way to reduce notes.

It is better to leave more space between syncopated notes than to leave them out.

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"HEART OF GLASS"

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# REDUCING TRIPLETS FOR MEDIUM DIFFICULTY

When reducing triplets in Medium:

 Keep only the downbeat of each triplet

You can see this in the two methods below: **Note:** Both 16th note triplet patterns in Hard produce an 8th note pattern in Medium.



# MEDIUM TIPS AND TRICKS

# MEDIUM TIPS AND TRICKS (CONTINUED)

Medium notes and chords need to be wrapped to four lanes at a time.

### WRAPPING NOTES FOR MEDIUM

After you have reduced your Medium chart you may need to adjust your note wrapping.

In the example below, removing every other 8th note from Hard leaves these 1/4 note gems:



These gems do not reflect the motion of the part. So, in this situation we adjust the gems to Blue, Yellow, Red, and Green.



w, Blue, and **Note**: You may not be able to wrap notes visually based on the pattern of the Hard gems.

For example, in Hard, is a jump from Red to Blue:

- A jump from a lower note to a higher pitched note, or
- A descending note that has been wrapped to Blue

This should be clear from listening to the song.

Always make sure that when you wrap notes they feel right for the part authored.

### WRAPPING CHORDS

Medium is restricted to four lanes at a time. So, if Expert uses all five lanes for chords you will need reduce them to four lanes.

The default chords for Medium

are in the graphic to the right.





For songs that do not have many chords try the following:

 Move every chord in the song down one position

For example, a Yellow / Blue chord would become a Red / Blue chord.

This may allow you to adjust your chords for Medium without much extra work.

In songs with a lot of chords you may not be able to use a unique pair of gems for each chord. In this case you can reuse chords in different sections of the song.

For example, you could use Green / Yellow gems for one chord in the verse and for a different chord in the chorus.

**Note**: You can use Yellow / Orange and Blue / Orange chords when adding Orange gems to Medium.

# ADDING ORANGE GEMS TO MEDIUM

Medium guitar players find it difficult to shift their hand position from the first four buttons. So, add appropriate Orange gems with care.

#### **OVERVIEW**

Medium difficulty uses the first four gem colors:



But, you should add at least one Orange gem to Medium if there is an Orange gem in Expert. This requires the player to shift their hand position and changes the gem focus:



We need to make sure that Medium players have enough time to manage this transition.

Use the priority list to the right to add Orange gem(s) to Medium. Restrict your note patterns to four lanes at a time.

**Note**: Lane consistency is also discussed on page 387.

### ORANGE GEM PRIORITY LIST

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- Add a single Orange gem in a unique section of the song. For example:
  - A guitar or bass slide
  - The bridge of the song
  - The intro or outro section
  - During a guitar or bass solo
  - The big final note of a solo or outro
  - Some other event that only happens once in the song

2 Add Orange gem(s) to a section that does not repeat often:

 If possible try to translate a riff (or section) to the top four gems on the guitar

> This will prevent the player from shifting hand position too much.



 Add an Orange gem to a repeating part that has a small change in it

- If there is no other way to find a unique part for an Orange gem:
- Choose a random part of the song to alter

MEDIUM ORANGE GEMS REFERENCE

This page shows how Orange gems were added to Medium in the Rock Band 3 setlist. Items of interest are highlighted in bold.

### GUITAR SOLOS

The following guitar solos have up to four Orange notes:

"25 or 6 to 4". "Been Caught Stealing", "Bohemian Rhapsody", "Centerfold", "China Grove", "Crazy Train", "Dead End Friends", "Everybody Want to Rule the World", "Foolin", "Here I Go Again", "I Love Rock N' Roll", "I Need to Know", "In the Meantime", "The Killing Moon" "King George", "Llama", "Me Enamora", "Misery Business" "No One Knows", "The Power of Love", "Radar Love" (Expert chords to single notes), "Sister Christian", "Space Oddity", "Werewolves of London".

These solos have 5 or more Orange notes:

"Caught in a Mosh", "Cold as Ice": (**8th notes**), "Free Bird": (**50+** total) (30+ **8th notes**) "I Wanna be Sedated": (**10+**) "Smoke on the Water".

# UNIQUE PARTS

These songs have unique measure(s) with Orange notes:

"20th Century Boy", "Antibodies", "Beast and the Harlot". "Before I Forget", "Break on Through (To the Other Side)", "Combat Baby" (x2), "The Con" (Green / Orange chord to Orange gem), "Crosstown Traffic" (Chord bends to Oranges gems), "Don't Stand So Close to Me", "False Alarm", "Get Free", "Get Up, Stand Up", "Heart of Glass" (x2), "Hey Man, Nice Shot", "Humanoid", "I Got You (I Feel Good)", "Jerry Was a Racecar Driver", "Just Like Heaven" (3 note chords to Orange gems), "Killing Lonliness", "Lasso", "Living in America", "Low Rider", "Plush" (3 note chord to Orange gem), "Oh My God", "Portions for Foxes" (Chords to Orange gem), "Rock Lobster", "Roundabout" (Green to Orange jump), "Saturday Night's Alright for Fighting" (3 note chords to Orange gems, Green / Red chord to Orange gem jump), "Stop Me If You Think You've Heard This One Before", "Walk of Life".

## **REPEAT PARTS**

These songs have parts that are repeated two or more times:

"Don't Bury Me ... I'm Still Not Dead" (x2), "Du Hast" (x7), "Fly Like an Eagle" (x3) and Green to Orange jump (x2), "Good Vibrations" (x4), "The Hardest Button to Button" (x3), "I Can See for Miles" (x4 Yellow / Orange chord), "Last Dance" (x4), "The Look" (x2), "Midlife Crisis" (x2), "Misery Business" (x2), "Need You Tonight" (x2), "Oye Mi Amor" (x2), "Rehab" (x6 Blue / Orange chords), "Something Bigger, Something Better" (x4), "This Bastard's Life" (x2), "Viva la Resistance" (x2).

> **Note**: Many songs in the setlist have a single Orange gem.

The reduction changes highlighted are from Expert to Medium.

# MEDIUM ORANGE GEM EXAMPLES

Let's look at how Harmonix added Orange gems to some Medium guitar parts.

"Heart of Glass" by Blondie has two unique measures. The first measure is a pattern of rising 8th notes (see "Heart of Glass" 1). The second is four rising off-beat chords (see "Heart of Glass" 2).

Harmonix choose the first pattern to add an Orange note to Medium. The pattern is first reduced to quarter notes. The gems are then wrapped to follow the rising melody (see "Heart of Glass" 3).

The hand position shift requires the little finger to move from Blue to Orange.

The player's hand position then returns to normal with the next Green gem.

This is easier for the player than playing off beat chords.

The song tempo is 116 BPM.









"Been Caught Stealing" has a single Orange note during a guitar solo. This is a common way to add an Orange gem for many Rock Band songs. Here there is at least a quarter note gap to change hand position. The tempo is 104 BPM.

"Du Hast" has a unique measure that repeats during each chorus. It repeats seven times in total. There is a quarter note gap between the Yellow / Orange chord and the preceding Red gem. The tempo is moderate at around 125 BPM

"Walking on the Sun" by Smash Mouth has a unique high pitched chord at the end of the song. There is a dotted quarter note gap between the Blue / Orange chord and the preceding Yellow gem. The tempo is moderate at 125 BPM. This is a perfect opportunity to add an Orange gem.



Easy should be easy to play.

#### EASY GUITAR OVERVIEW

Author Easy gems on notes 60 (C3) to 62 (D3):

PART GUITAR

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Easy Orange Easy Blue Easy Yellow Easy Red Easy Green

Easy focus is on the Green to Yellow gems.

Reduce your Medium chart:

- Press F9 to open CAT
- Click the Automatic
   reduction (5-Lane) button
- Uncheck Hard and Medium
- Under Options make sure that the instrument is set to Guitar or Bass
- Click the **Reduce** button

#### EASY SHOULD BE EASY

Easy should not be difficult to play. The Easy player should be able to:

Look at the game track

- See the note
- Look at their guitar
- Play the note
- Look for the next note

That is a lot to do between notes, so leave a good amount of space between them.

If Easy is not challenging enough the player will just move up to Medium difficulty.



**REMOVE QUARTER** 

Remove the remaining quarter

It is good practise to leave a

half note space between notes

notes where possible.

for Easy players.

NOTES

## NO CHORDS ON EASY

Reduce chords to single notes on Easy.

See "Subdivisions" by Rush as an example (below).

### SUSTAINED NOTES

Sustained notes on Easy should be the same as they are on Medium. They should have a quarter note gap.

## WRAPPING NOTES ON EASY

Make sure that Easy notes are wrapped correctly.

Use "Wrapping Notes for Medium" as your guide. Adjust your focus to three lanes at a time and half notes instead of quarter notes. (See pages 427 — 428 for Medium wrapping).



### ORANGE AND BLUE GEMS

Easy players find it difficult to shift their hand position from the first three buttons.

Take care to add appropriate Blue and Orange gems.

Use the same priorities as with Medium (page 429). Restrict notes to three lanes at a time:

- Green, Red, Yellow, or
- Yellow, Blue, Orange

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# YARG RANGE SHIFT **INDICATORS (OPTIONAL)**

YARG range shift indicators are for Easy and Medium guitar and bass players on YARG.

### **OVERVIEW**

Range shift markers are visual indicators on the YARG note highway for guitar and bass. They show players their starting hand position and let players know when to shift their hand position up or down. This allows players to prepare for hand shifts, so that there are no surprise orange notes.

The No Range Shift feature uses range shift markers to condense four or five note charts down to a smaller range of notes. Three notes for Easy and four notes for Medium.

> Use Magma v4.0.3 or later to compile YARG range shifts in Rock Band custom songs.

> Range shift indicators currently require nightly build b2973 or later of YARG.

### **VISUAL ELEMENTS**

Range shift indicators last for four beats on the note highway. For songs written in 4/4 they will last one measure:



Range shift indicator arrows and gold bar (Medium)

Arrows point to the left or the right, indicating the hand position shift up, or down, the fretboard.

The thin gold bar indicates the start, and scope, of the range shift. In the above example, the scope (or length) of the gold bar is four notes (green, red, yellow, and blue).

Range shift regions highlight the active fret buttons in each range. Notes outside

of the current range are not illuminated. For example:



Active fret buttons - Medium - Finger position 1 (GRYB)



Active fret buttons - Medium - Finger position 2 (RYBO)

A Medium shift to orange notes is pictured below:



Medium range shift to finger position 2 (RYBO)

**Note**: The number of arrows displayed in a range shift is set, and cannot be changed.

The lower difficulties typically use only two range shifts each.

Table 1: Range Shift Parameters

#### **SYNTAX**

that does not include the size

**Note**: The typical notation does

not include the Easy shift to RYB

(highlighted in blue). This shift

can work well for key changes

where you want the player to

fingers. It may also work for

songs with only GRYB gems. In

most cases a shift up to YBO

works best, and may be less

confusing for players.

continue to use their first three

variable. Typical short form

notation is listed in Table 2.

YARG range shift markers are	Parameter	Description
placed as text events in REAPER: [ld_range_shift diff position size]	diff	The instrument difficulty. 0 = Easy, 1 = Medium, 2 = Hard, and 3 = Expert.
The parameters are defined in <b>Table 1</b> (to the right).	position	Index finger position. 1 = green, 2 = red, and 3 = yellow. (0 is assumed to be an open note).
If a size is not provided, the default size is 3 for diff 0 (Easy) and 4 for diff 1 (Medium).	size	The size of the note range. For example, 3 = GRY, RYB, or YBO (Easy). 4 = GRYB and RYBO (Medium).
We can take advantage of this feature and use short notation		Table 2: Typical Notation

Table 2: Typical Notation

Difficulty	Frets	Short Notation
Easy	G R Y	<pre>[ld_range_shift 0 1]</pre>
Easy	Y B O	<pre>[ld_range_shift 0 3]</pre>
Medium	GRYB-	<pre>[ld_range_shift 1 1]</pre>
Medium	- R Y B O	[ld_range_shift 1 2]
Easy	- R Y B -	[ld_range_shift 0 2]

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# YARG RANGE SHIFT INDICATORS (CONTINUED)

A range shift indicator is always placed at the start of a song.

# TEXT EVENT PLACEMENT

As discussed earlier in this chapter, you should chart Easy and Medium sections as usual:



Position range shift text events as follows:

- At measure 1.1.0 (before any notes are played). This defines the starting range of notes for the player <sup>1</sup>
- Where a shift in hand position needs to occur

<sup>1</sup> The game will default to a GRYBO range for any notes before the first marker.

#### The range shift text event marks where the gold line (at the end of the range shift indicator) will appear. In-game, range shift indicator arrows appear four beats before the text event. When the position of the text event is reached ingame, the newly used frets are illuminated. The newly un-used frets are turned off.

The position of Easy and Medium range shifts can differ, but this is not a common occurrence.



## SONG START

Start your song on GRY or GRYB if possible. The player's index finger will already be on the green fret after pressing the start song button.



[ld\_range\_shift 0 1]



[ld\_range\_shift 1 1]

Place Easy and Medium range shifts at measure 1.1.0, even if no range shift occurs. This helps players know which set of frets to use.

# NOTE RANGES

Use ranges of three notes for Easy and four notes for Medium, even if some notes in the range are not used. For example, a YBO section that only uses BO.



HIGHER PITCH

Use shifts for long sections that feel noticeably higher in pitch. For example, key changes, sections with pedal FX, or altcharted sections.

Do not add a shift is there is no audible difference. Many bass charts only have a starting range marker and no shift.

# RANGE START

Place range shift text events at the start of the first note of the new range.

YARG recommendations for range shifts.



range is off-beat, use the first beat before the note.



# SHIFT GAP

Give the player time to move their hand during a range shift. On Easy try to have about one measure without notes between ranges. (An unsustained note on beat one of a measure is allowed).



On Medium try to have about half a measure without notes between ranges. (An unsustained note on beat three of a measure is allowed).



Double, or halve range gaps for very fast or slow songs. For example, at 61 bpm use a half note gap on Easy and a quarter note gap on Medium.

# YARG RANGE SHIFT INDICATORS (CONTINUED)

Only author range shifts for Easy and Medium guitar and bass.

### MINIMIZE SHIFTS

Try not to shift too often, or use shifts for very short sections. Constant shifting can be tiring.

For a three to four minute song one shift up is usually plenty. Three shifts should be the maximum.





### EASY & MEDIUM

Only use shift markers for Easy and Medium.

# EMPTY SECTIONS

Do not place shifts right before a empty section without any notes.

Place shifts at the start of a range so that they align with the music properly.

### NO PART DRUMS

Do not place range shifts on PART DRUMS. Shifts on this track will be ignored.

### NO PART KEYS

Do not place range shifts on PART KEYS. Shifts on this track will be ignored.

# IN-RANGE NOTES

Do not place notes that are not part of the current note range. For example, do not author orange or blue notes in the default Easy note range:



[ld\_range\_shift 0 1]

Out of range notes will appear on the note highway, but they will break when the **No Range Shifts** modifier is selected.

### **VERSE & CHORUS**

Do not cut notes from the start of a verse or chorus to make space for a shift gap. Cut notes from the end of the previous section instead.

### **OPEN NOTES**

Don't put open notes in the measure before a range shift (unless absolutely necessary). Open notes can cover shift indicators, and be a lot for players to handle.



**Note:** Open notes in YARG are allowed in any note range. Open notes are not charted in the Rock Band games. SOLOS

Do not cut notes from the end of a solo to make space for a shift gap. Instead, cut the start of the section after the solo.

This rule can override the verse and chorus rule.

# STAR POWER

Do not place star power phrases entirely in the gap between range shifts. This can destroy star power pathing and make it impossible to gold-star a song.



### RANGE SIZE

Some YARG range shift recommendations only

apply to YARG (and not Rock Band).

Do not create shifts from one range size to another. For example GRY to RBY0.

### DEFAULT RANGE

Do not put an entire chart on position 2 or 3 just because it sounds high in pitch. Stick to the default range shifts for Easy and Medium.

For extra details visit the YARG wiki:

https://docs.yarg.in/ songs/charting/guitar/ ld-range-shifts

# YARG RANGE SHIFT TEXT EVENTS LIST

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Typing text events by hand is never recommended. Instead, follow these steps to create a text event list that you can load into REAPER.

 Copy and paste the YARG range shift short notation (Table 2 p.436) into Notepad



Save the text file in your REAPER install folder:

- Save the file to: C:\REAPER\
   Data\Text\_Strings
- Name the: YARG Range Shifts.txt

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		Sort ~ 📰 View ~			Details
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Callen/	Text Events List - Character Animation	9/13/2024 9:12 AM	Text Document	1 KB	
Mine Demond	Text Events List - Events	9/13/2024 9:12 AM	Text Document	47 KB	
> Mike - Personal	📄 Text Events List - Hand Map	9/13/2024 9:12 AM	Text Document	1 KB	
	Text Events List - Instruments	9/13/2024 9:12 AM	Text Document	1 KB	
🛅 Downloads 🖈	Text Events List - Venue	9/13/2024 9:12 AM	Text Document	3 KB	
🛅 Documents 🖈	VARG - Range Shifts	6/1/2025 10:12 AM	Text Document	1 KB	
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You can now load the text event list into REAPER as normal:

- Double-click in the green highlighted area
- In the Add Text Event window click the Load button
- In the Load text file window select the YARG - Range Shift text file
- Click the **Open** button

Select a text event from the list:

- Click the Text drop-down menu to view text events
- Select a text event from the list
- Click the **OK** button

Your chosen text event is now added to your MIDI track.



# COMMON AUTHORING MISTAKES

Avoid these mistakes to improve your guitar and bass charts!

# ALL DIFFICULTIES

 Only author sustains for notes that you can reasonably expect to whammy

The **short sustains** to the right are nearly impossible for most players to whammy. A very skilled player could probably get Overdrive from the **medium sustains**. This length of sustain is fine when the notes are the same color. If the color of these sustains changed they would probably be removed. The **long sustains** here are obviously not an issue.

 Turn up the bass in the mix. The game is not fun to play if you cannot hear what you are playing

Use EQ to bring out the upper bass frequencies. This will let you hear the attack of the pick on the strings of the bass guitar.



Short sustain tails should be removed



Medium length sustains can be a judgement call



### EXPERT

 Only author one guitar part at a time

It is fine to switch between the most fun or interesting guitar parts. But, you should only author one guitarist at a time.

- Author muted chord notes as the lowest note of the nearest chord
- Author individual notes with chord accents as as the lowest note of the nearest chord
- Author percussive strums as the lowest note of the nearest chord
- Leave at least a 16th note gap between the end of a sustain and the next note

### HARD

- The player should not be expected to play continuous
   8th notes if the song is over 160 BPM
- Do not author nuanced pick up notes between chords in Hard
- Do not author passing, or muted notes between chords for Hard
- Chords in Expert should be chords in Hard \*

\* Unless there is a very special circumstance that prevents it.

### MEDIUM

- Don't just author every quarter note. Try to pick out notes that best represent the feel of the song
- When sustains are reduced from Hard make sure that they are reasonable to play on Medium
- Do not use these chords on Medium:

Green / Blue Green / Orange Red / Orange

# EASY

- There are **no chords** on Easy
- Easy should be easy, but also fun

author gems.

# Don't leave sections of your song empty if you can

You can also **add gems if the** section is not very busy.

GUITAR AND BASS

# TRILL MARKERS

# STRUM MARKERS

Strum markers are also used to trigger free

form lanes. Use these lanes for fast, odd

Trill markers are used to trigger free form lanes. They are for rapid alternating notes.

#### TRILL MARKER OVERVIEW

Author trill markers on note 127 (shown in bold below):

PART GUITAR
Trill Marker

Strum	Marker
BRE	
BRE	

When a player plays the notes in a (trill marker) free form lane:

- They do not have to play the authored rhythm
- They must play alternating notes at 160ms or faster \*

\* If the player plays below 160 ms the free form lanes disappear. The player must then play the trill as authored.

#### WHEN TO USE TRILL MARKERS

There may be cases when playing the authored part may feel better than playing free form lanes. For example, when the song tempo is too fast or too slow. But, free form lanes can be a good choice in certain situations:

- If the part is very fast and without regard for tempo
- If it is very difficult to match the original performance
- If there is a very long stretch of 16th or 32nd notes

For example, the solo in "Crazy Train" has trill markers. The tempo is 140 BPM.

The solo in "Surfing with the Alien" does not use trill markers. The tapped trills are four measures long with 32nd notes at 168 BPM.

Use the option that works best for your song.

### AUTHORING TRILL MARKERS

Author trill markers so that they cover sets of trilled notes. If the notes in the trill change, you must author a new trill marker for those notes.

**Note**: The marker should only cover the start of the final note of the trill. To do this, add .01 to the length of the trill marker (see page 447).

> To use trill markers on Expert and Hard change the note velocity of the marker. See pages 175 — 176.

For more on trills see page 155.

### STRUM MARKER OVERVIEW

Author strum markers on note 126 (shown in bold below):

#### PART GUITAR

#### Trill Marker **Strum Marker** ---BRE BRE

**Note**: Strum markers are also known as **Tremolo markers**.

When a player plays the notes in a strum lane:

- They do not have to play the authored rhythm
- They must strum notes at 160ms or faster \*

\* If the player plays below 160 ms the free form lanes disappear. The player must then play the part as authored.

### WHEN TO USE STRUM MARKERS

rhvthm strumming sections.

There may be cases when playing the authored part may feel better than playing free form lanes. But, free form lanes can be a good choice in certain situations:

- If the part is very fast and without regard for tempo
- If it is very difficult to match the original performance
- If there is a very long stretch of 16th or 32nd notes

For example, "25 or 6 to 4" uses a strum marker for 16th notes in the final long strummed chord of the song.

Another well-known example is the intro pick slide to "Crazy Train" by Ozzy Osbourne.

Use strum markers if and when it feels right for your song.

### AUTHORING STRUM MARKERS

It is easy to break combo when moving between tremolo parts.

In this case it is best to:

 Make sure that the final note of the tremolo is **not** covered by the tremolo marker

**Note**: You can use strum / tremolo lanes on sections of single notes or chords.

To use strum markers on Expert and Hard change the note velocity of the marker. See pages 175 – 176.

For more on tremolo see page 156.

# AUTHORING TRILL MARKERS

Trill markers cover trilled notes including the start of the last note of the trill.



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# CHARACTER ANIMATIONS

TEXT

# GUITARIST ANIMATION EXAMPLE

Use animations to change the actions and attitude of in-game characters.

### ANIMATION MARKERS

Text events are placed to set the character animation state:

1		
	[play]	
	o 1 = 1	

You can use CAT to create these markers if you like:

- Press F9 to open CAT
- Press the Create Animation Events button

The Create animation markers dialogue will open:

- In the Select Instrument menu select Guitar or Bass
- In the Select Expression menu choose Play, Mellow, or Intense
- Click the Create markers button

Adjust automatic animation markers if needed. Add extra animation markers as required.

#### CHARACTER **FVFNTS** ANIMATION

[idle_realtime]	The character does not move to the beat of the music. The character is waiting for their cue. This is useful in slower songs, or slow parts in a song.
[idle]	The character will bop and wave to the beat of the music. Use [idle] before the song starts, after the song finishes, or during downtime. Downtime is at least two measures of rest.
[idle_intense]	Character is idling in an intense manner.
[play]	The character is playing.
[mellow]	The character is playing in a mellow manner.
[intense]	The character is playing in an intense manner. For example, aggressive metal.
[play_solo]	The character is playing fast notes and showing off.
Load these text events into REAPER:	Use the <b>Instruments</b> text events list. See pages 125 — 126.

Character animations should not be added during the count-in.



Left-hand animation moves the character's hand up and down the neck of the guitar. This adds realism to guitar and bass animation.

### LEFT-HAND OVERVIEW

**Note:** Left-hand animation is optional. Magma will generate left and right-hand animations if you do not author any. This information is for authors who want a high level of detail in their customs.

The guitar and bass templates include MIDI notes for character left hand position. (See the graphic to the right).

As you can see, these notes provide hand positions on the guitar neck, from low to high. These hand positions are approximate. This is because guitar models and hand size vary a lot in-game. In fact, most character and guitar combinations won't let you go above the twelfth fret.

The image to the right shows the relationship between guitar frets and MIDI notes. Thanks to C3 author Orange Harrison for working this out.

### EXPERT GUITAR / BASS TEMPLATE



### MIDI NOTES TO FRETS GUIDE



### LEFT-HAND ANIMATION

Left-hand animation is controlled by MIDI notes and text events:

- MIDI notes set the hand position on the guitar neck
- Text events set fingering for single notes and chords

Animation cues are not needed for each note:

- Strumming motion is based on the notes and chords in the Expert chart
- Finger motion is based on movement of notes in the Expert chart

Note and chord animation is separate from the left-hand fret position animation.

For example, a fast repeated line in a guitar solo only needs one left hand animation note.

You can approach how you would like to animate the left hand in different ways:

- Refer to guitar tabs for left
   hand position
  - Refer to video of live concert performances
  - Divide the song into low, mid, and high frets

Use a single MIDI note to set the left-hand position. To change the hand position author a different hand position. The character's hand will slide to the new position just before the start of that note.

Refer to the "Hand Maps" topic on page 457 to customize left hand fingering.

# RIGHT HAND ANIMATION FOR BASS

Choose a right-hand animation style for the bass player.

в

There are three right-hand animations for the **bass player** in Rock Band.

By default the bass player uses their fingers to play the bass in-game.

If this is the case in your song, you do not need to do anything.

To change the right-hand animation, add text event(s) to the PART\_BASS track:

- [map StrumMap\_Default]
   Bass player plucks strings with fingers
- [map StrumMap\_Pick]
   Bass player uses a pick
- [map StrumMap\_SlapBass]
   Bass player slaps the strings

Typically only one of these text events is needed per song. For example:





# ADD FRET NUMBERS TO THE GUITAR / BASS TEMPLATES

By default the left hand MIDI animation notes do not include fret numbers. You can add fret numbers to the template with a custom keymap.

If the MIDI Editor is **docked** follow these steps:

Right click the MIDI Editor
 Tab

In the context menu select:

File > Customize note names
 > Load note names from file

If the MIDI Editor is **undocked** follow these steps:

 Click File > Customize note names > Load note names from file

-												
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# The Load MIDI note names from file window will open:

- Browse to: C:\REAPER\ Data\ix\_keymaps
- Select GuitarFrets.txt

Note: You will need to download this file from: rhythmgamingworld.com/c3authoring-tools/

Click the **OK** button



# The Load MIDI note names from file window will close:

Your guitar or bass template will now have fret numbers for character animation.

# HAND MAPS

# HAND MAP IMAGES: BASIC CHORD SHAPES

Hand maps are text events that are used to animate left-hand fingering.

TEXT EVENT

### OVERVIEW

After you have authored character left-hand positions you can add Hand Maps.

Hand maps are text events that control left-hand fingering animations. They let you set different styles of left-hand animation for different parts of your song.

You can use as many, or as few, hand maps as your song needs.

To the right you can see the hand maps available and a brief description of what they do.

Starting on the facing page you can see images for left-hand animation.

Note: Try to avoid typing text events by hand. Load these text events into REAPER. Use the Instruments text events list. See pages 125 — 126.

[map HandMap_Default]	Single gems animate single fingers. Sustain notes animate vibrato. Chords animate chord fingerings.
[map HandMap_NoChords]	Single finger and vibrato animation.
[map HandMap_AllChords]	Chord animation only.
[map HandMap_Solo]	Animate D chord for all chords and vibrato for sustained chords.
[map HandMap_DropD]	Animate open hand for all Green gems. All other gems are chords.
[map HandMap_DropD2]	Open hand for all Green gems.
[map HandMap_AllBend]	Animate ring finger, high vibrato.
[map HandMap_Chord_A]	Animate A Minor chord.
[map HandMap_Chord_C]	Animate C chord.
[map HandMap_Chord_D]	Animate D chord.

ANIMATION











# HAND MAP IMAGES: SINGLE NOTES, VIBRATO, AND DROPD



















Single note animations are played in two positions across the guitar strings. The first position is near the G string. The second position is near the low E string. Finger motion can be fast, but not always in sync with the notes played. **Vibrato** is animated with an wide finger movement across the guitar neck.

The **Drop D** animation for **vibrato** is a bit more subtle.

The open hand, or **Drop D** animation for **single notes** leaves the low E string open. This is used for guitar parts that use the low E string as a pedal note. The Drop D chord fingering looks like a power chord.

These two Drop D animations work very well for many rock and metal songs.

# LEFT-HAND ANIMATION EXAMPLE

Left-hand animation can make your player character look much more realistic. But don't expect complete realism:

- The template only has about half as many frets as a real guitar, and
- There are a limited number of chord shapes
- Guitar models and hand size vary a lot in-game

In this example we have four made up measures of guitar tablature. I've charted the lefthand as accurately as I can:

- Different chord shapes for power chords on adjacent strings
- An open hand handmap for chords played over the open E string

You can simplify these animations and deviate from them to get good results.

You could remove the chord handmaps, and see how the animation looks without them.

Note: Having so many chords on the same frets might not look good. In this case you can group a few chord changes on one fret. For example, put the first three chords on fret 7 and the next three chords on fret 5.

1 2	3 4
E:   B: 9107	1215-1212-15-12-15-15
G: 7859107	14-12
D:78-5 975	15-12
E:5030-	15-



Another option is to give each chord it's own fret. This may not 12-15-12-15-15---|-12-----| work for complex songs with a lot of chord changes though. -----14-12-------| Depending on the song it may -----15-12--13-----|

work out best to divide the song into low, middle, and high sounding chords. From there you can assign fret numbers (and chord shapes if needed).

If you have a song with a lot of muted chords try the AllChords handmap.

Finally, don't feel that you need to move the left-hand for every single note or chord.

As you can see, in the solo section, you can group many notes together on one fret. Remember, there are two hand positions for single notes. So, the left-hand animation will move from higher strings to lower strings on the same fret.

Finally, pay attention to any animation that is combined with a close-up of the fretboard. For example, during a guitar or bass solo. There are several cuts that will really highlight your animation choices.

# 14 POWER CHORDS

### POWER CHORDS EXPLAINED

There are several commonly used types of power chords in rock and metal:

- Partial power chords which use the root and fifth notes
- Full power chords that use the root, fifth, and octave
- Fourth chords, use the fifth and octave from a full power chord, but do not have the root note. They are implied power chords.





	G POWER CHORDS
D: A:	55 555
Ε:	33

Partial, full, and implied G power chords are shown above.

These chords are easy to play and can be quickly moved up and down the fretboard and across strings. Many rock and metal songs have fast chord changes played this way.

Е

С

98 BPM

"NEMESIS"

"NEMESIS"

D#

Х

### 1 4 POWER CHORDS

In Rock Band power chords are typically 1 2 or 1 3 chords. Using 1 4 chords can:

- Reduce finger and hand position shifts in fast chord changes
- Anchor chord changes to a root note
- Make the chord changes easier to play

You can see this in the examples for this topic.

D: -----

A: 3----3

E: 1-0-0-3-0-0-1

FΕ

G

102 BPM

"THE PALLBEARER ..."

"THE PALLBEARER ..."

"Holy Wars ... The Punishment Due", "Nemesis" and "The Pallbearer Walks Alone" all have similar riffs:

 Low power chords played off an open E string

Compare the tabs for each song to the guitar charts. You will see that the 1 4, 1 3, and 1 2 chords mirror the tones and semitones between the chords.

In "**Raining Blood**" we see the same idea, but the chords all

work off Red gems. This works well here because the chords are higher than the open E string. Compare this to "Blood and Thunder" on the next page.

"**Deathbed Atheist**" is different because the chords all use the open E string. This is not unusual in Rock and Metal.

You can think of these chords as dyads, partial chords, or just intervals. The intervals in these chords are: Augmented Seventh

- Seventh
- Sixth (also known as an augmented fifth)

"And Justice For All" is shown for contrast. It shows the typical method for charting chords. The 1 4 chords in this song are used for unique individual chords.

Use the charting method that works best for your song.



F#

н

# CHORD CHANGE HOPOS

# SLIDES BETWEEN CHORDS

Rock and metal guitar players often move power chords quickly up and down the fretboard. Quick chord changes are played as follows:

- The guitar player picks a chord
- The guitar player slides the chord up or down the fretboard to a new chord

The guitar player may, or may not, pick the second chord. This can depend on the style and speed of the song.





When the second chord is not picked, it emphasizes the slide sound between the chords.

In Rock Band you can chart this sound with chord HOPOs. Let's take a look at a few examples.

The [verse] of "Blood and Thunder" has a good number of chord HOPOs. You can see this in the two examples below. The first is a power chord slide up. The second is chords that slide up and down the guitar neck.

Single power chord slides are

92 BPM

"BLOOD AND THUNDER"



223 BPM

more common. You can see this

in the next example - from the

by Anthrax. The Yellow / Blue

chord is a power chord slide

**Note**: The open E string gems

Yellow gems. This is likely done

"Hangar 18" features three quick

power chord slides in a row in

[gtr riff 3]. Notice that the first

D: ----9--10----

"CAUGHT IN A MOSH"

around these chords are on

for playability. The tempo for

this section is very fast, at

and is a HOPO.

about 220+ BPM.

[verse] riff of "Caught in a Mosh"

chord is authored as a single note. This is likely because the chord change is very fast.

"Master of Puppets" uses a similar technique with single note HOPOs for sliding chords:



"Bodhisattva" has a large amount of chord change HOPOs. They occur in the [fast picking] section. The guitarist slides a chord between the third and seventh frets while picking fast. The guitar part has a fairly clean tone and the slide sound is clearly heard.

The final example is "**No More Tears**". In [gtr\_line\_1] the guitar player uses a slide.

A slide is a metal tube worn on a single finger of the fretting hand. The slide rests on the

> Н Н Н



Н Н Н

223 BPM



125 — 131 BPM





96 BPM

strings and is moved up and

down the neck of the guitar.

slide from one pitch, or chord,

pressing the strings against the

distinct sound. In this example

to another. The player avoids

This allows the guitarist to

This technique produces a

we can see a plucked chord

(Green / Red) followed by a

chord is not plucked and is

charted with a HOPO.

higher slide chord. The higher

frets of the guitar.

# AUTHORING REDUCTIONS

Expert to Hard reductions are the most difficult to get right.

### REDUCTIONS **OVERVIEW**

Reductions from Expert to Easy are best done one difficulty at a time. The recommended method is as follows:

- Use CAT to reduce from Expert to Hard
- Review the CAT reduction and make changes as needed
- Repeat these steps for Hard to Medium and for Medium to Easv

The changes that you may need to make depend on the musical context. You may need to:

- Add or remove notes
- Wrap notes (for each difficultv)
- Find the dominant rhythm

Refer to the authoring rules for each difficulty as you complete this step.

#### HARD REDUCTIONS

Hard reductions can be the most difficult to get right. You may need to:

- Keep some sixteenth notes
- Reduce syncopated rhythms
- Pick out accented notes in a solo
- Decide which notes or chords to remove
- Wrap gems to match the song audio, or to meet the authoring rules

For some songs you may have to make many judgement calls. These will be based on the musical context, authoring rules, and song tempo. These choices will form the framework for Medium and Easy. So it is worth taking extra time to refine and polish your Hard reductions.

If you do, you will find that your Medium and Easy charts should fall into place more easily.

It can be frustrating to remove a note in Hard, only to find that you want to play it in Medium.

Next let's take a look at how to reduce some existing song measures taken from the Rock Band 3 setlist.

Note: These examples may deviate from the official Harmonix charts.

> Rock Band 3 era charts from Harmonix can be a good source of inspiration. But, Harmonix does not always follow their own authoring rules.



Syncopated sixteenth note rhythms, at a moderate tempo.



Expert notes removed from Hard

The [main riff] to "Heart н of Glass" has a sixteenth note syncopated rhythm.

To reduce this riff for Hard:

Remove sixteenth notes

Remove subtle variations

from the syncopated rhythm

In this Harmonix chart:

- Syncopated 16th note Blue gems have been reduced
- The Orange pitch slide gem has been shifted to the start of the slide
- Green note variations have been removed (measure 36 and 38)

These changes keep the same rhythmic feel through out all of these measures.

\* An argument could be made to keep these notes in Hard. There is a strong accent on the two sixteenth notes at the start of each measure. They may have been removed because of the quick Green to Blue jumps.

# HARD REDUCTION: "CAUGHT IN A MOSH" BY ANTHRAX

Very fast eighth note motion with a Green root note gem.



Expert notes that are removed or wrapped in Hard

- The [main\_riff\_1] from н "Caught in a Mosh" is very fast continuous eighth notes. These measures repeat, and work off the low open E string.
- To reduce this riff for Hard:
- Reduce Green gems (to isolate motion gems)
- Keep the motion gems

Wrap gems for Hard

 Reduce short sustain notes to 16th notes

These reductions give the player some breathing room. They let the player focus on the main points of motion.

Overall, this chart achieves a good balance for the player. This is important given the very fast song tempo. (This chart differs slightly from the official chart).





Expert notes that are removed or shortened in Hard

The [verse] riff from н "Caught in a Mosh" features very fast eighth notes and fast power chord changes.

Note: This Hard reduction differs from the official Harmonix chart.

To reduce this riff for Hard:

- Remove notes around fast chord changes
- Reduce short chord sustains to sixteenth notes
- Reduce the number of continuous eighth notes

The extra breathing room makes this challenging part a bit more playable. The player has some time to anticipate the chords and plays most of the single Yellow notes.

# HARD REDUCTION: "BLOOD AND THUNDER" BY MASTADON

Moderate tempo sixteenth notes with Green root note gems, and power chord slides.



Expert notes that are removed in Hard

H The [intro] and [chorus] to "Blood and Thunder" is sixteenth notes and power chord slides.

The [chorus] part is basic power chords. Most of these chords have a sixteenth note strum before the downbeat chord.

To reduce these riffs for Hard:

- Remove the Green root notes from the [intro]
- Keep the [intro] chord motion
- Reduce [intro] fast chord changes
- \* Remove [chorus] 16th note chord strums

Keeping the chord motion and removing the Green gems works well for the [intro] chart.

\* The removal of the basic 16th note strumming in the [chorus] is a judgement call. At this tempo I would make an argument to keep them. They are not fast chord changes. Moderate tempo sixteenth and thirty-second note melody line.



Expert notes that are removed or wrapped in Hard

These two guitar riffs are in 11/8 time. These riffs are part of a melodic line with several variations.

In Expert, [gtr\_riff\_a] contains 16th and 32nd notes. [gtr\_riff\_b] is straight 16th notes.

To reduce these riffs for Hard:

Remove the 32nd notes

of the song.

- Remove the 16th notes
- Wrap the remaining 8th
- notes for Hard as needed The final 8th note pattern is not

too challenging given the tempo

\* Some may make an argument for sixteenth notes here. But, keeping them interrupts the groove of the section.

471

# HARD REDUCTION: "25 or 6 to 4" BY CHICAGO

Fast eighth notes and chord changes.



Expert notes that are removed or wrapped in Hard

The [intro] to "25 or 6 to 4" has some judgement calls to make. To reduce this riff for Hard:

- Remove 16th notes
- Avoid fast chord changes
- Reduce the Green / Orange chords (measure 18)

Wrap notes for Hard

In measure 18 you can see why you should use Green / Orange chords sparingly. They need to be wrapped for Hard.

I think Harmonix made good choices for the Hard chords here. But, this is quite different to play than the expert part. The next issue is the Green to Blue / Orange jump. Is the tempo fast enough to justify removing the Green gem? If it is then we need to be consistent. This means also removing the last note from the other similar measures. **Note**: These notes are highlighted with an asterisk. Harmonix chose to remove them from the Hard chart. Sixteenth note trills, and thirty-second note strumming with a strum marker.



Expert notes that are removed or wrapped in Hard

H The [gtr\_solo\_2b] has sixteenth note trills with three Expert trill markers. To reduce this solo for Hard:

- Remove 16th notes
- Wrap notes for Hard
- Fix pitch bend \*

The 16th note Red to Yellow

sustain is reduced to a single gem. This gem is wrapped to Green so that it fits in with the ascending trill note pattern. The 16th note trills are reduced to 8th notes.

The [ending] has 32nd notes with a strum marker on Expert:

Remove 16th / 32nd notes

Reducing this part to 8th notes fits with the musical context. The previous four measures are 8th notes that slow down from 144 to 62 BPM. The player has one beat to adjust to the 87 BPM tempo change.

\* **Note**: CAT will automatically fix pitch bends on Hard.

# HARD REDUCTION: "THE LOOK" BY ROXETTE

Moderate tempo off-beat rhythms, and sixteenth note strumming.



Expert notes that are removed or adjusted in Hard

H The [intro] to "The Look" has an off-beat rhythm, with 16th notes and triplets. To reduce this for Hard:

- Remove fast motion
- Wrap notes for Hard
- Make parts consistent

Sixteenth note triplet motion and some 16th notes have been reduced for Hard. Descending motion has been wrapped for Hard. These changes produce consistency between these two measures.

The [chorus] has some 16th note strumming which is reduced:

Avoid fast chord changes

The main focus of the rhythm is kept. Sixteenth note strumming before the chord change is removed. \* This reduction is also applied to measure 20 to keep the measures consistent. There is no chord on the downbeat of measure 21.



Expert notes that are removed or shortened in Hard

H The [bridge] has offbeat rhythms and fast ascending motion. To reduce this for Hard:

Reduce motion

Wrap notes for Hard

Motion is reduced giving some breathing room in and around

the motion parts. As you can see this gives consistency to the upward motion parts.

\* On Hard (measure 50) the rhythm of the asterisked notes is 8th notes. It is not straight 8th notes on Expert. I assume that these notes were quantized by mistake on Hard. In measures fifty-five and fifty-six 16th note strumming is reduced: \*

 Avoid fast chord changes and Green / Orange jumps

The last 16th note strum is removed from other measures for consistency. The remaining 16th note strumming pattern is fine at this tempo.

# EXAMPLE REDUCTION: "CRAZY TRAIN"





Medium is quarter notes, wrapped to four lanes. Note: Harmonix charted the sustains with an 8th note gap. This used to be the standard, before the launch of the Rock Band Network. Easy is half notes, wrapped to three lanes. \* The sustains should be the same as for Medium (with a quarter note gap).



Medium outlines the chord movement. Chords are wrapped for Medium. \* The quarter note sustain chord feels good. It is not hard to prepare for the Red gem that follows. E Easy follows the chords in single notes. Notes are wrapped for three lanes. \* The sustain is the same as Medium. There is plenty of time to prepare for the next note.



- Start by authoring the main riff and build the rest of the song around it.
- Author muted notes and chords as single notes.
- Author guitar noise as a stream of sixteenth notes.
- Follow the Orange gem priority list to add Orange gems to Medium and Easy.
- Make sure that trill markers only cover the start of the final trilled note.
- Make sure that strum markers do not cover the final tremolo note.
- Change the velocity of trill and strum markers if you want them to work on Hard.
- If the bass player picks or slaps the bass, remember to author the correct right-hand animation.
- Left-hand animation is optional.
- Don't type text events by hand. Load preset text events instead.



Lane shifts

14

- Expert, Hard, Medium, and Easy
- Pro keys animation

Pro keys authoring is optional. It requires you to author notes played in the original performance.

Pro keys requires you to author the pitch of the right-hand keys part. This is like authoring vocals, but the range of available notes is much smaller.

A separated keys track, or keyboard stem, will make authoring less difficult. Sheet music or MIDIs can also help you wiith Pro Keys authoring. Topics covered in this chapter include:

- The Pro keys template
- Lane shift notes and note ranges
- Wrapping notes
- Overlapping gems
- Trills and trill markers
- Glissando lanes
- Overdrive, Unison, and solo markers
- Expert, Hard, Medium, and Easy difficulties
- Character and Pro keys animations

By the end of the chapter you will understand how to author Pro keys. This will provide you with a solid foundation for your 5-lane keys chart.



# THE PRO KEYS MIDI TEMPLATE

Listen to the keyboard part and review the PART REAL KEYS template before you start authoring.

### PRO KEYS MIDI TEMPLATE

To the right you can see a			PART REAL KEYS X
compact view of the pro keys MIDI template.	Trill Marker Glissando Marker		
It is quite different to the other Rock Band instrument templates.	BRE Lanes (x5) Overdrive Marker Solo Marker C4		
The majority of the template	B Bb		
range of notes from <b>C2 to C4</b> .	A G#		
There are also a few special	G		
notes at the top and bottom of the template:	F#	···· Tw	o octave range
<ul> <li>Trill marker</li> </ul>	Eb		
<ul> <li>Glissando marker</li> </ul>	D C#		
<ul> <li>Overdrive marker</li> </ul>	C2 A2 - C4 Range	<b>:</b>	
<ul> <li>Solo marker</li> </ul>	G2 - B3 Range F2 - A3 Range		
Lane shift notes	E2 - G3 Range	····· La	ne shift notes
Text events are at the bottom of the template.	D2 - F3 Range C2 - E3 Range		
		[1	PART REAL_KEYS_X]

# AUTHORING PRO KEYS

Author the notes played by the right hand of the keyboard player in your song.

### **AUTHORING OVERVIEW**

keyboard performance.

Lane shifting

Melodic wrapping

Voice adjustment

with one hand in-game.

PRO KEYS BY C3 AUTHOR JIMANGI Start with the Expert MIDI in the PART REAL\_KEYS\_X track. Author the **rhythm and pitch** of the **right hand** part of the Consider using separated audio tracks to author pro keys. Adjust your chart to fit within the limitations of a two octave range with these techniques: We discuss these techniques as we work through this chapter. Note: You can add the left-hand part if the section is playable

# LANE SHIFT NOTES AND RANGES



The PART REAL KEYS X panel to the left shows:

- The two octave range of notes for Pro keys
- Six lane shift notes

Each lane shift range covers a span of ten white keys on the keyboard. It takes a total of six lane shifts to cover the whole two octave range.

There are three primary range shifts. These are the easiest ranges to read in-game.

**Note 1**: The color code for lane shifts is not related to the colors on the pro keys controller.

**Note 2**: You should see range shifts in the C3 Template. If not use the following notes:

- MIDI note 0: C2-E3
- MIDI note 2: D2-F3
- MIDI note 4: E2-G3
- MIDI note 5: F2-A3
- MIDI note 7: G2-B3
- MIDI note 9: A2-C4

In the **Piano Roll** view of the C3 Template these notes are all on white keys. **Never** use black key notes for lane shifts.

# LANE SHIFTS

Authoring rules for lane shift notes.

### LANE SHIFT OVERVIEW

The Pro keys track in-game only shows **ten white keys** at a time:



Most songs do not fit into such a small range of notes. Because of this limitation we use **lane shifts** to show different ranges of notes.

Try to mostly use the ranges below. They are the easiest ranges to read in game:

- A2 C4
- F2 A3
- C2 E3

#### LANE SHIFT AUTHORING

Lane shift notes set the position of a lane shift in-game. Author lane shift notes about one measure before the first note of the new note range. \*

 \* This depends on the tempo of the song

This allows time for the in-game lane shift animation and for the player to anticipate the shift.

Keep range shifts notes to a minimum. They make gameplay more difficult for the player.

Avoid shifting for single notes or chords. Try not to shift unless there is a measure or more before shifting back.

Lane shifts often happen on repeated notes or on sustained notes. This makes the lane shift easier for the player to process. This is better than placing a lane shift for a new section of the song. There will be cases where you need to adjust **octaves**, **voicings**, and **melodic lines**. It is often better to:

- Shift a higher set of notes or chords down an octave (to fit in the current range) or
- Change a chord voicing if the top note or two is out of the cuurent range

If this happens make sure that the new note placement feels natural to play.

If you have a large lane shift up or down you might need to remove the note entirely.

Any notes that are outside of the current range appear to the side of the track. Because of this we try to add lane shift notes as early as possible. Use lane shift notes where the notes played fit into the current and next range of notes.

#### Notes should never appear outside the current range. Place your range shift notes so that this does not happen.

## START OF EACH DIFFICULTY

Each Pro Keys difficulty must have a lane shift note at the start of the MIDI chart. Author the lane shift note before any other notes in the song. This note will set the starting lane shift for the song.



# WRAPPING NOTES

# OVERLAPPING GEMS

In Pro Keys charts long melodic lines are often wrapped. This is because of the small ranges of notes displayed in-game.

Wrapping here is similar to the way we wrap notes for 5-lane guitar and bass. When wrapping make sure that you do so in a place that makes rhythmic and melodic sense.

**Note**: Each difficulty has interval jumping rules. They specify the largest amount of notes that you can jump between, from high to low or vice versa. Be sure to follow the interval jumping rules for each difficulty.

The graphic below shows how to wrap out of range and unplayable notes inside a single note range. Pro and 5-lane keys both allow overlapping gems. Follow these guidelines for gems that overlap:

 No more than four overlapping gems at a time \*

\* With more than four broken notes in a chord the first note should end before adding another note.  Overlapping notes should not span more than an octave \*

\* If a broken chord spans more than one octave the first note should end before adding another note.

 Expert allows up to four overlapping gems

- Hard allows up to three overlapping gems
- In general Medium does not allow overlapping gems \*

\* Except in rare cases when spaced out over a quarter note or more.

 Easy does not allow overlapping gems





# TRILL MARKERS

# AUTHORING TRILL MARKERS

Trill markers are used to trigger free form lanes. They are for rapid alternating notes.

#### TRILL MARKER OVERVIEW

Author trill markers on MIDI note 127 (G8):

PART REAL\_KEYS\_X

Trill Marker Glissando Marker BRE BRE BRE

When a player plays the notes in a (trill marker) free form lane:

- They do not have to play the authored rhythm
- They must play alternating notes at 160ms or faster \*

\* If the player plays below 160 ms the free form lanes disappear. The player must then play the trill as authored.

#### WHEN TO USE TRILL MARKERS

There may be cases when playing the authored part may feel better than playing free form lanes. For example, when the song tempo is too fast or to slow. Having said this, free form lanes can be a good choice in certain situations:

- If the part is very fast and without regard for tempo
- If it is very difficult to match the original performance
- If there is a very long stretch of 16th or 32nd notes

Use this option if it works well for your song.

# AUTHORING TRILL NOTES

Author trill notes to the rhythm of their performance in the song.

#### AUTHORING TRILL MARKERS

Author Trill markers so that they cover sets of trilled notes. If the notes in the trill change, author a new trill marker for those trilled notes.

**Note**: The marker should only cover the start of the final note of the trill. To do this add .01 to the length of the trill marker (see facing page).

Trill markers are only used on Expert Pro Keys.

Trills are only used for two notes at a time. Three note trills (or higher) will break the game. For more on trills see page 155. Here you can see a 16th note trill and trill marker. The marker starts at the beginning of the first note of the trill.

Author the marker so that it ends at the start of the last note of the trill.

Then follow these steps to extend the marker to cover the start of the last note of the trill:

- Click the trill marker to select it
- Press Ctrl + F2 to open the Note Properties window
- In the Length field add 0.1 to the note length value \*
- \* In this case the note length changed from 0.2.00 to 0.2.01.
- Click OK to close the Note Properties window.

Author trill markers to cover trilled notes. The last note of the trill is only partially covered.

112.1	112.2	112.3	112.4
D 5 9	TRILL MARKER	•	•
	Note Pro	operties	Ŧ×
	Note:	127 G8 🗸	
	Velocity	e: 96 (1-12	7)
	Position	: 112.1.00	
	Length:	0.2.01	
	Channe	I: 1 ~	
	Use + -	/ for relative changes	in any field.
- 	Use + I	o2 to add 1 octave and	d 2 semitones.
	0	Cancel	Apply
		•	•
	0	•	•
	•	•	
	•	•	

# GLISSANDO LANES

# OVERDRIVE, UNISON, AND SOLO MARKERS

Glissando is a slide from one pitch to another.

#### GLISSANDO MARKERS

Author Glissando markers on note 127 (G8):

#### PART REAL\_KEYS\_X

Trill Marker **Glissando Marker** BRE BRE BRE

 Glissando markers do not usually cover the first note of the glissando \*

\* This encourages players to play the glissando.

 Notes covered by a glissando marker are not scored \*

\* The player can play any notes to get a score for playing the glissando

#### GLISSANDO EXAMPLES

On keys, glissando is a slide up or down the keyboard on the white or black keys.

Famous examples include:

- The start of "I Want You Back" by The Jackson 5
- The start of "Dancing Queen" by ABBA

For very elaborate glissandos check out the intro to "I Don't Like Mondays" by The Boomtown Rats.

Finally, "Great Balls of Fire" by Jerry Lee Lewis has glissandos throughout the whole song.

### GLISSANDO NOTE AUTHORING

Follow these rules when you use glissando lanes:

- Use glissando lanes for reasonable playable glissandos
- Try to use glissando lanes for glissandos of a quarter note or longer
- Only author white notes in a glissando lane
- Space notes evenly between the start and end of the glissando

**Note**: Glissando is only authored on Expert difficulty.

### OVERDRIVE AND UNISON PHRASES

Overdrive and Unison phrases are authored for all instruments at the same time.

There is a special caveat when you author Pro Keys and Keys:

- Overdrive and Unison phrases in the Pro Keys and Keys tracks must match
- Author Overdrive and Unison phrases in the PART REAL\_ KEYS\_X and PART KEYS tracks

For detailed authoring rules refer to Chapter 17. The rules for Overdrive and Unison phrases start on page 595.

#### PART REAL\_KEYS\_X

BRE BRE (Use all 5) **Overdrive Marker** Solo Marker

### PRO KEYS SOLO MARKERS

Author solo markers on note 115 (G7):

# PART REAL\_KEYS\_X BRE BRE (Use all 5) Overdrive Marker Solo Marker

Follow the same rules for solo markers as the other Rock Band instruments (see page 611).
### EXPERT PRO KEYS

### HARD PRO KEYS

Remove unnecessary 16th notes. Reduce the interval between jump notes and the number of

Author the right-hand part played in the original performance.

### EXPERT PRO KEYS OVERVIEW

Expert Pro Keys use the **PART REAL\_KEYS\_X** track:

Expert gems are MIDI notes
 42 (C2) to 72 (C4)

Author Pro Keys as follows:

 Start with Expert and rhythmically chart the actual keys performance

Your 5-lane keys chart should reflect the part played by the **right hand** of the keyboardist in your song.

You may keep sections that add the left hand part if the section is playable with one hand.

### EXPERT PRO KEYS CHORDS

Expert chords can contain up to four notes, within the span of an octave. (An octave is eight white keys or 12 semitones).

#### LANE SHIFT NOTES

You can use lane shifts in Expert Pro Keys.

Note: A very short lane shift is not recommended. For example, do not shift to one or two notes in the middle of a larger pattern. In this case it may make more sense to adjust those notes into the visible range of notes.

#### SUSTAINED NOTE GAP

Sustained notes need space between the sustained note(s) and the note(s) that follow.

- For simple transitions leave a 16th note gap \*
- \* For example, single notes to single notes, or a single note into a chord that uses that note.
- For other transitions leave an eighth note gap \*

\* For example:

- A transition between two chords, or
- A transition between a chord and an unrelated note

### HARD PRO KEYS OVERVIEW

Author Hard Pro Keys on the **PART REAL\_KEYS\_H** track:

 Hard gems are MIDI notes 42 (C2) to 72 (C4)

Hard Pro Keys should be a more playable version of the Expert chart. Start by removing:

Unnecessary 16th notes

- Grace notes \*
- Any left hand part included
- in Expert

\* Grace notes are extra decorative notes that are not vital to the harmony or melody.

### HARD PRO KEYS CHORDS

notes in chords.

Hard chords should only contain two or three notes, within the span of seven white keys (11 semitones).

### LANE SHIFT NOTES

You can use lane shifts in Hard Pro Keys.

After reducing from Expert make sure to remove lane shifts that are no longer needed.

Keep the initial lane shift from the start of the Expert chart.

### INTERVAL JUMPS BETWEEN NOTES

Try to avoid interval jumps larger than seven white keys (11 semitones). If you cannot avoid such a large jump leave twice as much space between the notes. This may involve reducing sustain note length or removing extra notes.

### SUSTAINED NOTE GAP

Sustain notes should be the same as they are in Expert. The exception is when you reduce sustains for interval jumps.

PRO KEYS 500

EASY PRO KEYS

Leave about a half note between gems.

Reduce chords to single notes.

Reduce the interval between jump notes.

Leave a quarter note between gems. Reduce the interval between jump notes. Reduce chords to two notes.

MEDIUM PRO KEYS

#### MEDIUM PRO KEYS OVERVIEW

Author Medium Pro Keys on the **PART REAL\_KEYS\_M** track:

Medium gems are MIDI notes
 42 (C2) to 72 (C4)

Reduce Medium Pro Keys to the basic rythmic core of the song, following these rules:

- A quarter note between each playable gem
- Two note chords
- No Lane shifts
- Small interval jumps

#### MEDIUM PRO KEYS CHORDS

Medium chords should only contain two notes, within the span of six white keys (9 semitones).

If this is not possible reduce chords to the most prominent single note.

#### LANE SHIFT NOTES

Lane shifts are not allowed on Medium Pro Keys. Instead, shift notes so that they fit within the visible range of your choice.

Note: Each range covers a span of 10 white keys on the keyboard. The total range, including black keys, is 16 semitones.

### INTERVAL JUMPS BETWEEN NOTES

Try to avoid interval jumps larger than six white keys (9 semitones). If you cannot avoid such a large jump leave extra space between the notes. This may involve reducing sustain note length or removing notes.

#### SUSTAINED NOTE GAP

Sustain notes should have a quarter note gap between the end of the sustain and the next note. This may make some sustains too short.

For example, reduce most sustains shorter than 3/16ths to 16th notes. \*

\* This is the case for most song BPMs.

### EASY PRO KEYS OVERVIEW

Author Easy Pro Keys on the **PART REAL\_KEYS\_E** track:

 Easy gems are MIDI notes 42 (C2) to 72 (C4)

The rules for Easy Pro Keys are:

- About a half note between each playable gem
- No chords
- No Lane shifts
- Smaller interval jumps

### EASY PRO KEYS CHORDS

Chords are not allowed on Easy Pro Keys.

Reduce all chords to the most prominent, musically sensible single note.

#### LANE SHIFT NOTES

Lane shifts are not allowed on Easy Pro Keys.

The visible range of notes should be the same as it is for Medium Pro Keys. INTERVAL JUMPS BETWEEN NOTES

Try to avoid interval jumps larger than five white keys (7 semitones). If you cannot avoid such a large jump leave extra space between the notes. This may involve reducing sustain note length or removing notes.

### SUSTAINED NOTE GAP

Sustain notes on Easy Pro Keys should be the same as Medium.

CHARACTER ANIMATION

TEXT

### **KEYS ANIMATION** EXAMPLE

Text events are used for character animation.

### Character animations should not be added between measures one and three.



MARKERS Text events are placed to set

the character animation state:

**ANIMATION** 

	[play]
You can	use CAT to create these
markers	if you wish:

- Press F9 to open CAT
- Press the **Create Animation** Events button

The Create animation markers dialogue will open:

- In the Select Instrument menu select Pro Keys
- In the Select Expression menu slect Play, Mellow, or Intense
- Click the Create markers button

Animation text events are placed in the PART REAL\_ KEYS\_X track. Adjust these text events if needed.

#### **CHARACTER EVENTS** ANIMATION

[idle_realtime]	The character does not move to the beat of the music. The character is waiting for their cue. This is useful in slower songs, or slow parts in a song.
[idle]	The character will bop and wave to the beat of the music. Use [idle] before the song starts, after the song finishes, or during downtime. Downtime is at least two measures of rest.
[idle_intense]	Character is idling in an intense manner.
[play]	The character is playing.
[mellow]	The character is playing in a mellow manner.
[intense]	The character is playing in an intense manner. For example, aggressive metal.
[play_solo]	The character is playing fast notes and showing off.
Load these text events into REAPER:	Use the <b>Instruments</b> text events list. See pages 125 — 126.

### LEFT AND RIGHT HAND ANIMATION

### SUMMARY PRO KEYS

Author left and right-hand animations for Pro Keys in the following tracks:

- PART KEYS\_ANIM\_RH
- PART KEYS\_ANIM\_LH

Use notes C2-C4.

In Rock Band most Pro Keys charts are **right-hand** only. To animate the right-hand simply copy the Expert Pro Keys chart to the PART KEYS\_ANIM\_RH track. CAT can do this for you:

- Press F9 to open CAT
- Click the Create pro keys animations button

It is OK to only have right-hand animations in-game.

You can author **left-hand** animations more generally if you need them. Make sure that they line up with the rhythm of the song in a reasonable way.

Putting left and right hand animations together can be a challenge though. The **in-game keyboard** only has a range of three octaves. You can see this in the graphic below. The challenge comes from the overlap between the left and right-hand animations. This happens in the middle octave on the keyboard. If there is a **left-hand** part you may need to:

- Move the left-hand animations to lower keys
- Move the right-hand to higher keys

To have all the parts that you need for Expert Pro Keys:

 Author the entire part, including the left-hand

Then **move** the left-hand parts to the left-hand animation track. Finally **copy** the remaining right-hand part to the right-hand animation track.



- Author the pitch and rhythm of the right-hand keyboard performance.
- Author a starting lane shift in each Pro Keys track.
- Try to use only the primary lane shift ranges.
- Place lane shift notes so that the part feels natural to play.
- No notes should be visible outside of the current note range.
- Wrap notes that are unplayable or outside of the current note range.
- Use trill markers when appropriate. Make sure that you only cover the start of the final trilled note with a trill marker.
- Glissando lanes are for playable glissandos that last a quarter note or more.
- Overdrive and Unison phrases must be identical in Pro Keys and 5-lane Keys charts.
- Use the right-hand Expert chart for right-hand animation.

3 PRO KEYS



### 5-LANE KEYS

- Expert, Hard, Medium, and Easy
- Character animation
- Common authoring mistakes

### In this chapter we cover how to author basic (5-lane) keys.

Read Chapter 14 "Intro to Guitar, Bass, and Keys" before working through this chapter. It contains shared rules and concepts that apply to authoring basic keys.

Authoring 5-lane keys is like authoring 5-lane guitar or bass parts. The main differences are sustained notes and chords.

In this chapter we will cover:

- Lane consistency for keys
- Extra chords for keys
- Overlaps and sustains
- Rules for authoring Expert, Hard, Medium, and Easy
- Character animation
- Example reductions



### GETTING STARTED WITH EXPERT KEYS

Listen to the keyboard part and review the PART KEYS template before you start authoring.

#### BASIC KEYS I AYOUT

The gem layout for basic 5-Lane keys is as follows:



To change the PART

**KEYS notes to Rock** 

121 — 122.

Band colors see pages

Basic (5-lane) keys are authored on the PART KEYS track:

**OVFRVIFW** 

EXPERT KEYS

 Expert gems are MIDI notes 96 (C6) to 100 (E6)

You can see these notes in the graphic to the right. The graphic show the top section of the PART KEYS template.

Author keys as follows:

- Start with Expert and rhythmically chart the actual keys performance
- Adjust the notes to best fit the five basic gems

Your 5-lane keys chart should reflect the part played by the **right-hand** of the keyboardist in your song.

### EXPERT KEYS TEMPI ATE

PART KEYS Trill Marker \_\_\_ BRE BRE BRE BRE BRE \_ \_ \_ \_ Overdrive \_ \_ \_ \_ Solo Marker Force HOPO Off Force HOPO On

Expert Orange Expert Blue **Expert Yellow** Expert Red Expert Green

### A NOTE ABOUT PRO KFYS

The official RBN docs suggest authoring Pro keys before tackling Basic keys.

Doing so can give you a good idea of the:

- Melodic structure, and
- The correct rhythms

Basic keys authoring is very similar to authoring 5-lane guitar and bass. Use your Pro keys chart as a general guide for your 5-lane keys part.

> Note: You do not have to author a Pro keys chart. You can author 5-lane keys without authoring the Pro keys part at all.

### **REVIEW THE "INTRO TO GUITAR, BASS,** AND KEYS" CHAPTER

The shared rules and concepts that apply to guitar, bass, and keys are covered in Chapter 14.

This includes:

- Note Consistency When to tie notes and gem colors together
- Chord Consistency Consistent use and motion of chords
- Preserving Motion The flow and motion of gems. How the song feels to play
- Lane Consistency The lane focus for each difficulty. This includes gem consistency between each difficulty
- Quantized MIDI Notes Chart notes to the MIDI grid. This removes imperfections found in the original performance

#### Wrapping Notes Author melodic lines into patterns that fit in a five gem range

Chords

The five basic chord types and their "feel"

Sustained Notes The rules for authoring held notes

You should review these topics before you start to author your keys chart.

Additional information that is specific to keys is contained in this chapter.

### GEM FOCUS FOR KEYS Х н The Lane Consistency topic for guitar and bass in on page 387. Μ Е

Lane consistency for keys is not quite the same as it is for guitar

Each gem color found in Expert must be used

at least once in the other difficulties.

LANE CONSISTENCY

In 5-lane keys the gem focus is five notes, regardless of difficulty. This means that there are no hand position shifts for keys. Despite this there are situations that present challenges when authoring keys.

and bass.

For example, songs with less than five chords are hard to Reduce to Easy. This is because chords are not allowed in Easy.

You cannot use all five gems with only four chords.

In this case you can use a restricted range of notes (most likely Green to Blue).

As with guitar and bass, any gem color missing from Expert cannot be used in the other difficulties.

So, if Expert only has Green, Red, Yellow, and Blue gems then this should apply to the other difficulties as well.







You can use all the

this page for keys.

chord types shown on

To review how to use

each chord type see

pages 391 — 392.

Three note chords are usually used for non-standard or "big" sounding chords:

- Augmented chords
- Seventh chords
- Diminished chords

They are also used for normal chords that have tension added to them.

For 5-Lane keys there are two types of 3 note chords:

- Standard three note chords used for keys, guitar and bass (bottom left), and
- 3 note chords that include a note between the Green and Orange gems. (See the Keys **Only** graphic).

Note: You may lose motion consistency if you mix **standard** and **keys only** chords together.

Always make sure that **keys** only chords feel good within the overall part when using them.

### **CHORDS**

### OVERLAPS AND SUSTAINS

Some of the rules for sustained notes and overlaps on 5-lane keys are different than for guitar and bass.

#### SUSTAIN NOTE GAP

There should be a gap between the end of a sustained note and the start of the next note:

- The gap should be at least a
   1/32nd note gap
- A 1/16th note gap is standard

#### OVERLAPPING NOTES

The rules for **overlapping notes** on keys are as follows:

- There should be no more than three overlapping notes at a time
- > 100 BPM only author sustains for notes longer than 3/16th notes

sustains for notes longer

SHORT SUSTAIN

You can use short sustains at

< 100 BPM only author</p>

than an 8th note

NOTES

slower tempos:

### GAPS BETWEEN CHORDS

Rock Band does not have a sustain pedal for keys. So we recommend an **8th note gap** between sustained chords. This prevents the stem from muting while the player is changing chords. This also means that **quarter notes chords** do not have sustains.

### MUTED STEM CHORDS & NOTES

If standard sustains do mute stems use the guide below:

### BPM Note Gap

< 61	16th note
61-120	8th note
121-160	Dotted 8th note
161-239	Quarter note
240 +	Dotted quarter note

**Note:** This may mean that audible sustains may not have visible note tails.









< 100 BPM

Press F9 to open CAT • Click the **Automatic** reduction (5-Lane) button Uncheck Medium and Easy Under Options make sure

HARD KEYS

**OVERVIEW** 

Hard Orange

Hard Blue

Hard Red

Hard Yellow

Hard Green

Reduce your Expert chart:

(C5) to 88 (E5):

Author Hard gems on notes 84

PART KEYS

н

:

that the instrument is set to Keys

Click the Reduce button

### **REMOVE SUBTLE**

- or faster \* \* This decision is based on the tempo of the song.
- Hard. See page 519.

Hard should be the "reasonable" version of Expert. Expert players should be able to score

100% on Hard with minimal practise.

Adjust note wrapping for

**REMOVE VARIATIONS** -

Remove subtle variations so that parts are more consistent:

VARIATIONS



Start by removing 16th notes





### HARD

SUSTAIN NOTE

Sustains in Hard should be the

Note: CAT will take care of this

for you when you reduce your

KEYS 516

chart from Expert to Hard.

LENGTH

same as in Expert.

Tips and tricks for authoring Expert keys.

### SOLO THE KEYS TRACK

If you have separated audio or stems:

- Solo and listen to the keys part all the way through before authoring
- Pay attention to changes between sections, chords, and melodic lines

This will give you sense of the structure of the song.

With this, there should be less need to make big changes to your authoring as you progress.

### LISTEN TO THE FULL MIX

It helps to listen to the full mix, turned down, when authoring.

This will help you focus on the rhythm and musical context of the part that you are authoring.

#### CENTRAL RIFF OR PROGRESSION

EXPERT TIPS AND TRICKS

Try starting with the central riff or chord progression of the song:

 Build the rest of your authoring around that central element

Knowing how you want the most important part to feel will help inform you how to author the rest of the song.

### **REPETITION IN** SONGS

Some songs may contain a lot of repetition.

In this case it can often be faster to:

- Author the repeating section for all difficulties, then
- Copy and paste the section through the rest of the song

#### **AUTHORING** TRILLS

For trills refer to the topics on pages 527 — 528.

Author grace notes in melodic lines and solos as follows:

**AUTHORING** 

**GRACE NOTES** 

Add a 16th note at the start of the note, one gem lower than the target gem



# HARD (CONTINUED)

Long sections of three note chords can be thinned out.

### THREE NOTE CHORDS

Three note chords are allowed in Hard.

**Note:** If you need to make long passages of three note chords easier to play in Hard you can thin them out.

For example, the reduction for "China Road" below.

There is space between the main chord changes. There is also a single note lead-in to the Blue / Yellow chord at the end.

### REDUCING 16TH NOTE TRIPLETS

There are two ways to reduce 16th note triplets for Hard:

- Remove the second note of each triplet (method A)
- Remove the third note of each triplet (method B)

METHOD A



### CONTINUOUS 8TH NOTES

Choose the method that feels the best to play. Both methods:

- Preserve the syncopated groove of the triplet
- Make the part easier to play

For continuous 8th notes the official docs recommend:

 At 160 BPM or more, remove every fourth 8th note per measure In practice, Harmonix removes the last 8th note per measure.

If the 8th notes are very fast and have motion, then keep the motion notes for Hard.









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spacing with wrapping that preserves motion.

Note: Reductions allow more space between notes. This

provides more linear motion.

This Hard chart has an 8th note



MEDIUM KEYS

### NOTES

Removing the remaining 8th notes from Medium is a good way to reduce from Hard:

**REMOVE 8TH** 

Try to only have playable notes on strong quarter note beats

that is much easier to play.

Note: You can keep some 8th notes in Medium. But

М

128 BPM IMPOSSIBLE

Try to maintain as much of the rhythmic and melodic feel of Expert and Hard but in a way

> and 8th note passages. You can see the context, BPM,

and instrument tier below:

the context, song BPM, and

in this decision.

instrument tier are key factors

For example, in "Roundabout"

by Yes there are quarter note





Medium Green Medium Blue Medium Yellow Medium Red Medium Orange

PART KEYS

Reduce your Hard chart:

- Press F9 to open CAT
- Click the Automatic reduction (5-Lane) button
- Uncheck Hard and Easy
- Under Options make sure that the instrument is set to Keys
- Click the **Reduce** button

INCORRECT

WRAPPING NOTES

After you have removed notes

on Hard you may have to wrap

For an example, look at the

Hard reduction below. The

remaining 8th notes do not

ON HARD

the remaining notes.

HARD (CONTINUED)

preserve the motion of the

You can see the correct way to

reduce and wrap notes in the

"Correct Wrapping" graphic.

Expert chart.



## MEDIUM (CONTINUED)

### KEEP CHORDS FROM HARD

Keep all chords from Hard unless it does not make sense to do so. For example, if:

 Chords represent harmonizing keyboard parts

### AVOID FAST CHORD CHANGES

Try to avoid fast chord changes.

You can so this in a couple of ways. You can, for example, make fast quarter note chord changes into single notes.

You can see this in "Whip It" by Devo where the tempo is about 160 BPM. Warmup tier. When you keep chords take the musical context and instrument tier into account. For example, "Break On Through (To The Other Side)" by The Doors (Challenging tier, 190 BPM).

Use the method that works best for your song.





### NO THREE NOTE CHORDS

Three notes chords are not allowed on Medium.

You should reduce three note chords to two note chords.

For example, "China Grove" by The Doobie Brothers (below).

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### SUSTAIN NOTE DURATION

Sustains should be shorter in Medium to give the player more time between notes:

- Try to leave a quarter note between the end of a note and the start of the next
- Use the Fix sustains script in CAT

н

Μ



If you manually shorten sustains look out for note tails that are too short. This can occur with sustained chords that have an 8th note gap between them.

Finally, if a sustain looks too short in-game then reduce it to a standard 16th note:

- Reduce sustained notes that are less than a quarter note in length to 16th notes
- Chords should have a 1/4 note of space between them

# MEDIUM (CONTINUED)

### KEEP THE RHYTHMIC FEEL

If the strong beats of a song are upbeats, or syncopated, do not remove them in haste.

Removing every other 8th note is not always the best way to reduce notes.

It is better to leave more space between syncopated notes than to leave them out.

# HEART OF GLASS

# REDUCE TRIPLETS

When reducing triplets in Medium:

 Keep only the downbeat of each triplet

You can see this in both of the triplet patterns below:

:

:

:

-

:

•



Both 16th note triplet patterns



### WRAP NOTES FOR MEDIUM

After you remove 8th note gems you will need to adjust your wrapping again. For example, if you remove 8th notes from Hard (in the graphic below) these 1/4 note gems remain:



These gems do not preserve the motion of the part. So, adjust the gems to Blue, Yellow, Red, and Green.

**Note**: You may not be able to wrap notes visually based on the pattern of the Hard gems.

NOTE WRAPPING

For example, is the jump from Red to Blue in Hard:

- A higher pitched note, or
- A descending note wrapped to Blue

This should be clear from listening to the song.

Always make sure that your wrapped notes feel right for the authored part.



Easy difficulty should be easy to play.

#### EASY KEYS OVERVIEW

Author Easy gems on notes 60 (C3) to 62 (D3):

PART KEYS

E

Easy Orange Easy Blue Easy Yellow Easy Red Easy Green

Reduce your Medium chart:

- Press F9 to open CAT
- Click the Automatic
   reduction (5-Lane) button
- Uncheck Hard and Medium
- Under Options make sure that the instrument is set to Keys
- Click the **Reduce** button

#### EASY SHOULD BE EASY

Easy should not be difficult to play. The Easy player should be able to:

Look at the game track

- See the note
- Look at their keyboard
- Play the note
- Look for the next note

That is a lot to do between notes, so leave a good amount of space between them.

If Easy is not challenging enough the player will just move up to Medium difficulty.



### REMOVE QUARTER NOTES

Remove the remaining quarter notes where possible.

It is good practise to leave a half note space between notes for Easy players.

### NO CHORDS ON EASY

Reduce chords to single notes on Easy.

See "Subdivisions" by Rush as an example (below).

### SUSTAINED NOTES

Sustained notes on Easy should be the same as they are on Medium.

М

Е



### TRILL MARKERS

### AUTHORING TRILL MARKERS

Trill markers are used to trigger free form lanes. They are for rapid alternating notes.

#### TRILL MARKER OVERVIEW

Author trill markers on note 127 (shown in bold below):

	PART KEYS
Trill Marker	
BRE	
BRE	
BRE	

When a player plays the notes in a (trill marker) free form lane:

- They do not have to play the authored rhythm
- They must play alternating notes at 160ms or faster \*

\* If the player plays below 160 ms the free form lanes disappear. The player must then play the trill as authored.

#### WHEN TO USE TRILL MARKERS

There may be cases when playing the authored part may feel better than playing free form lanes. For example, when the song tempo is too fast or to slow. Having said this, free form lanes can be a good choice in certain situations:

- If the part is very fast and without regard for tempo
- If it is very difficult to match the original performance
- If there is a very long stretch of 16th or 32nd notes

**Note:** Trills are only used for two alternating notes. Three note trills or higher will break the game.

### AUTHORING TRILL MARKERS

Author trill markers so that they cover sets of trilled notes. So, if the notes in the trill change, author a new trill marker for those notes.

**Note**: The marker should only cover the start of the final note of the trill. Do this by adding .01 to the length of the trill marker (see facing page).

> To use trill markers on Expert and Hard change the note velocity of the marker. See page 176.

For more on trills see page 155.

Here you can see a 16th note trill and trill marker. The marker starts at the beginning of the first note of the trill.

Author the marker so that It ends at the start of the last note of the trill.

Then follow these steps to extend the marker to cover the start of the last note of the trill:

- Click the trill marker to select it
- Press Ctrl + F2 to open the Note Properties window
- In the Length field add 0.1 to the note length value \*
- \* In this case the note length changed from 0.2.25 to 0.2.26.
- Click OK to close the Note Properties window.

Author trill markers to cover trilled notes. This includes the start of the last note of the trill.



# CHARACTER ANIMATION

TEXT

**EVENTS** 

[idle realtime]

### **KEYS ANIMATION** EXAMPLE

Text events are used for character animation.

### Character animations should not be added between measures one and three.



### **ANIMATION** MARKERS

Text events are placed to set the character animation state:

[play]		of the music. The character is waiting for their cue. This is useful in slower songs, or slow parts in a song.
You can use CAT to create these markers if you wish: Press F9 to open CAT  Press the Create Animation	[idle]	The character will bop and wave to the beat of the music. Use [idle] before the song starts, after the song finishes, or during downtime. Downtime is at least two measures of rest.
Events button	[idle_intense]	Character is idling in an intense manner.
The <b>Create animation markers</b> dialogue will open:	[play]	The character is playing.
In the Select Instrument menu select Keys	[mellow]	The character is playing in a mellow manner.
In the Select Expression menu choose Play, Mellow, or Intense	[intense]	The character is playing in an intense manner. For example, aggressive metal.
<ul> <li>Click the Create markers button</li> <li>Adjust automatic animation</li> </ul>	[play_solo]	The character is playing fast notes and showing off.
markers if needed. Add extra animation markers as required.	Load these text events into REAPER:	Use the <b>Instruments</b> text events list. See pages 125 — 126.

CHARACTER

ANIMATION

The character does not move to the beat

529

### EXAMPLE REDUCTION: "BREAK ON THROUGH"



Hard loses an eighth note Green to Yellow / Blue jump. This is reasonable given the fast tempo. Medium has a quarter note spacing (or more) between notes and chords. E Easy has some quarter notes. Chords are single notes. Most notes are a half measure apart (more or less). EXAMPLE REDUCTION: "ROUNDABOUT" BY YES



Hard 16th notes reduced to three per beat in the fast section. Chords and 8th notes are the same as in Expert. Medium has 8th notes for the fast section. Notes between quarter note chords are removed. No 3 note chords. Easy is quarter notes for the fast section. Chords are single notes. A fast chord change is removed.

- Author the right-hand rhythms and pitches performed.
- Adjust the gems to fit 5-lanes.
- Start by authoring the main part and build the rest of the song around it.
- Keys can use three note chords with Green and Orange gems.
- Keys can have no more than three overlapping gems at a time.
- Quarter note chords should not be sustained.
- Make sure that trill markers only cover the start of the final trilled note.
- Change the velocity of trill markers if you want them to work on Hard.
- Don't type text events by hand. Load preset text events instead.

### VOCALS

16

- Vocal authoring
- Character animations
- Common authoring mistakes

This chapter focuses on how to author a single vocal track.

Authoring vocals requires that you chart two things:

- The pitch sung, and
- The duration of vowel sounds
- A separated vocal track, or vocal stem, makes authoring easier.

The topics covered in this chapter include:

- Guidelines for authoring a single vocal track
- Authoring pitched and non-pitched voices
- How to author vocal slides, bends, and trills
- Authoring phrase markers and Overdrive
- How to format and import lyrics
- Spanish lyrics
- Vocal percussion
- In-game character animations
- Comparisons of generated vocal MIDI and authored vocals

### HOW TO AUTHOR VOCALS

by ear. Scrub through your audio and listen for:

The duration of notes in each vowel sound

Author the pitches sung and their vowel sound duration in the MIDI template.

Author MIDI notes in the same octave that the original performer sings them.

tracks. I recommend using separated vocal tracks to author pitch. Use the full mix audio to author the start and end of vocal notes.

### DRY AND WET **VOCAL STEMS**

If you are using stems:

 Align the vocal and dry vocal stems before authoring

A difference of 30 - 40 ms is fine and does not significantly impact scoring in-game.

If the timing difference is larger, adjust the dry vocal file to match the wet vocal file.

If vocal effects make authoring difficult then you can author from the dry vocal track. If you do, check your authoring against the wet vocals as this is what you will hear in game.

**Tip:** Dry vocals do not have added effects. Wet vocals do have added effects.

### MIDI EDITOR **GRID SIZE**

Use a small grid size when authoring vocals.

Check out Nyxyxylyth's vocal tutorial video:

www.youtube.com/ watch?v=Vt--Pg8Bp\_w

A 1/16 or 1/32 grid is too large. On these grids MIDI notes will often start too early or too late when compared to the audio. This can have an adverse effect on scoring.

Use the following grid sizes for vocal authoring:

- 1/64 grid with Snap enabled
- At around 90 BPM (and below) use a 1/128 grid with Snap enabled



### **INTRODUCTION TO VOCALS**

The main vocal part is authored in the PART VOCALS track.

### VOCALS **OVFRVIFW**

To the right is the top and bottom parts of the vocal MIDI template. As you can see, this template is quite different to the other Rock	Overdrive Phrase Marker Not Displayed Percussion Displayed Percussion		PART VOCALS
Band instruments.	B		
The majority of the template	Вр		
notes from <b>C1 to C5</b> .	G#		
	G		
There are also a few special	F#	:	
the template:	E		
	D		Five octave range
<ul> <li>Overdrive</li> </ul>	C#		
<ul> <li>Phrase Marker</li> </ul>	C4		
<ul> <li>Not Displayed Percussion</li> </ul>	Eb		
<ul> <li>Displayed Percussion</li> </ul>	D		
Lyric Shift	C#		
	Lyric Shift		
<ul> <li>Range Shift</li> </ul>	Range Shift		
Text events are at the bottom of the template.			[PART VOCALS]

Vocal authoring is usually done



### Note timing can be off in separated vocal

use them for:

trills \*

# VOCAL CHART OVERVIEW











Character animation events are always enclosed with **brackets** []. They also have the text event Type set to Text Event.

Vocal slides, bends, and trills all use the + sign. Use a slide (+) for any pitched note that changes pitch up or down. You can add as many + notes as you need to keep track of pitch changes.

We use special characters for non-pitched lyrics. Add the # sign to text event lyrics to make them non-pitched.

> You only need to author vocal parts once. The in-game pitch detection takes care of the vocal difficulties for you.

### VOCAL TUBES AND SEPARATED AUDIO

Use separated vocals or stems to author vocals if you can. Either of these will help you to:

- Author vocal pitches more easily, and
- Author vocal tubes using the audio waveform

Scrub your vocal audio to hear the pitches sung.

Draw a vocal tube of the correct pitch. Then adjust the length of the vocal tube.

To do this you need to be sure where the vowel being sung starts and ends.

Your audio waveform can help you with this.

In this example, the waveform shows the word 'good'.

There is a hard 'G' sound at the start of the word, followed by the open vowel sound.



The orange vocal tube charts the vowel duration according to the waveform.

The white note tube shows the difference between scrubbing and looking at the waveform.

In the separated audio I could hear the vowel sound forming in the white note.

When I checked the full mix I could not hear the vowel forming during the white note.

The blue note shows the vowel sound tapering off in the full mix audio.

I like to toggle between the separated audio and the full mix. Then I can scrub the waveform to author the pitch and vocal tube in one pass.

If any of your note tubes sound early or late, can check them against the full mix.

Do not author consonants that come after the vowel sound.

### LEAD VOCALS

You do not have to author more than one vocal part for Rock Band. Authoring harmony parts is optional.

### LEAD VOCALS VS MANY VOICES

Songs often have harmony parts or more than one singer. You can author the harmonies if you would like, but this is not required. For songs where you only want to author a single vocal part there are some guidelines to follow:

- If there are many sung parts, author the part that you would sing along to
- Be consistent with parts that repeat in the song

For example, don't author the lead vocal in the first chorus and the harmony in the second. This would confuse the singer.

 If two or more vocalists sing at different times it's usually OK to author each part

#### OVERLAPPING VOCAL PHRASES

The example to the right shows solo and harmony vocal charts for two overlapping phrases.

The first phrase ends with "with your hands". The second phrase begins with "Steal the rhythm".

The last word of the first phrase "hands" overlaps the first word of the second phrase "steal".

The overlapping note is the last vocal slide note from the word "hands". It is the orange note in the SOLO VOCALS chart.

Solo notes (PART VOCALS) are shown in blue. Harmony notes (HARM 2) are colored red.

The solution, if you want to chart harmonies, is in the HARMONY chart.

Simply author the first phrase to PART VOCALS and the second phrase to HARM 2. The solution for solo vocals here is to shorten the end of the first phrase.

In this case removing the last vocal slide from the word "hands" is enough. This provides breathing space between both phrases. With the orange note removed you can author both phrases in PART VOCALS.

To conclude, when phrases and overdubs overlap you have to decide how to best break them apart. Usually this means authoring all of the second phrase and less of the first.

Ultimately your choice depends on the following:

- Which words are the most prominent
- What makes the most sense lyrically

### OVERLAPPING VOCALS EXAMPLE: "SPOONMAN" BY SOUNDGARDEN



KEY:

with your hands + + +

Steal the rhy-

### PITCHED VOCAL GUIDELINES

Pitched vocals are words that are sung. Author them by charting the pitch and vowel duration of each syllable.

### SIMPLIFIED VOCAL CHARTS

Your Rock Band vocals chart is a simplified version of the original performance.

Author vocals on MIDI notes C1 to C5. **Note**: C5 does not show up correctly in Rock Band Blitz.

Vocal charts should **not include** small details such as:

- Vibrato
- Short lead-ins \*

\* A short lead-in is a quick change in pitch before the main pitch is sung.

As a general rule the following are also **not included** in vocal notes tubes:

 Consonants at the start or end of a syllable

This rule reflects how people recognize note lengths when they sing.

#### EXCEPTIONS TO THE RULES

There are a few exceptions to the rules:

 If you ignore loud and long consonants from the start of a note then it tends to feel late in-game

The solution is to chart the very end of the consonant.

For example, you can chart the very end of a loud and long "Sh" or "S" sound.

 Determining when a note ends can depend on what you hear in-game

This is especially true for long notes that gradually fade in volume. In this case the note charted from the vocal track might be longer than what you hear in the full mix.

In this case shorten notes to match what you hear in-game.

### NOTE-ON AND NOTE-OFF TIMING

Note-on and note-off timing is when vocal notes start and end.

**Note-on timing** in particular is **very important**. It is a big focus of attention for players:

 Note-on timing should be very accurate

Note-off timing is less of a focus for players. You can sometimes make exceptions for note-off timing:

 You can shorten notes to give other game elements a higher priority

For example, when:

- There are not enough places to deploy overdrive
- There is not enough room for the player to breathe

### PHRASE GAP COMBO BUG

Rock Band 3 has a bug in the vocal system that impacts scoring. This bug can happen in the following situation:

- The last note in a phrase is pitched
- The first note in the next phrase is non-pitched

The bug makes these phrases extremely difficult to combo.

The bug mostly appears with short vocal phrases that have a small gap between them.

Regardless of phrase length you should follow best practices and use this solution:

 Leave a 16th note gap (four 64th notes) between the two phrases

This means that you may have to shorten the phrase that ends with a pitched note.

### SYLLABLES WITH MULTIPLE NOTES AND NOTE SPACING

Sometimes a syllable will change pitch. When this happens:

- Chart the vowel sound of the starting pitch until it begins to change
- Chart the continued vowel sound of the next pitch

Repeat the second step as many times as needed if a syllable has multiple notes.

**Note**: The gap between pitch change notes can vary. It depends on:

- How much the pitch changes
- How slowly or quickly the pitch changes

A larger change in pitch tends to take longer.

Always make sure that there is space between the end of

one note and the start another. Vocal notes should not touch each other.

Pay particular attention to the space between vocal slides. A small space between slide notes creates a quick jump between notes. A larger space produces a slower, more gradual change between the two pitches. Note: If there is no space between slide notes they will appear as separate notes in-game. The lyrics for these notes will not show up in-game.

> Enable ReaSynth on your vocal MIDI track(s). This will let you listen back to the vocal notes that you have authored.

See pages 293 - 294.

### NON-PITCHED VOCAL GUIDELINES

Non-pitched vocals are words that are spoken or shouted. To author, chart the vowel sound of each non-pitched syllable.

### CONSISTENT VOCAL CHARTS

Non-pitched notes are authored with the same general rules as pitched notes.

This means that we **do not include**:

 Consonants at the start or end of a syllable

This keeps note tube timing consistent and avoids confusing the player.

#### MIXED PITCH WORDS

Sometimes a word has pitched and non-pitched syllables.

In this case:

 Make the whole word either pitched or non-pitched

You will have to decide which option makes the most sense:

 Do not mix pitched and non-pitched syllables in the same word

#### MIXED PITCH PHRASES

Try to avoid mixing pitched and non-pitched words in a single vocal phrase. This is because:

- It can make phrases harder to sing
- It makes the vocal HUD harder to read

For example, if there is a nonpitched word in the middle of a pitched phrase:

Players have to adjust their vocal chords

The solution is to try to group the different types of syllables together as best you can.

**Note:** You do not need to apply this rule as strongly to the first or last words in a phrase.

### NON-PITCHED NOTATION

We use two symbols for nonpitched syllables:

- **■** #
- ^

The # symbol is most commonly used. It provides standard scoring in-game.

The ^ symbol is used in special cases and gives the player a more generous score.

Use the ^ symbol in the following situations:

- If a phrase contains only one to three short syllables
- For vowels and consonants without sharp attacks. For example, "w" or "y"

### NON-PITCHED EXAMPLES

Indefatigably	in-# de-# fa-# ti-# ga-# bly#
Cowardice	cow-# ard-^ ice#



Vowels and consonants without sharp attacks can be hard to register.

This is especially true if you miss the start of a long note tube. In this case use ^ instead of #. LYRIC FORMATTING

Every vocal MIDI note must be paired with a MIDI lyric text event. The MIDI lyric event must be placed precisely, at the start of each note.

### LYRICS AND TEXT EVENTS

To start, use a search engine to find your song lyrics:

 Check that the phrasing looks good and that only the first word in each phrase is capitalized

**Note:** Some sites have songs with each word capitalized. You should avoid these lyrics.

In REAPER, lyrics are formatted as a specific kind of text event:

 Text events for lyrics must be lyric text events

Imported lyrics are lyric text events by default. Manually created lyrics need to be set as lyric text events.

Lyric text events created with **Lyric to Clipboard** are lyric text events by default. This method is recommended (p. 553).

#### SYLLABLE HYPHENATION

Lyrics need to be broken down into individual syllables. The best way to do this is to use an online lyric hyphenator:

#### http://endless renovation.com/rb/hyph

- Paste your song lyrics into the hyphenator
- Click the Convert button
- Copy and paste your lyrics into a .txt file and save it with your custom song

**Note:** The hyphenator will add an @ sign to the start of each line. This is used to automate phrase markers with CAT.

Each syllable should separated by a dash:

■ For ex- am- ple

If you need to add a space after each dash, use the **Replace** feature in Notepad to do this.

### SLIDES, BENDS, AND TRILLS

Notes that slide, bend, or trill should be notated with the + sign in your lyric .txt file.

Work through your vocal MIDI and lyric text file together.

For each slide, bend, or trill note add a + sign to the correct place in your text file.

For example, notate the word "Yeah!" sung over two notes as:

Yeah! +

When individual syllables change pitch add the + sign directly after the hyphen. For example, the "der" in "Thunderstruck":

Thun- der- + struck

### MULTI-SYLLABIC CONTRACTION

Must- 've

Should- 've

Would- 've

Could- 've

every phrase.

PUNCTUATION

AND CAPITALS

Capitalize the first syllable of

You should also use capital

Proper nouns, for example

"American", "California"

Words that follow a ! or ?

Acronyms that would look

example "CIA", "MVP"

wrong in lower case. For

For punctuation, you may only

mid phrase

use the following:

"John", "Oxford University",

letters for the following:

For multi-syllabic contractions the following hyphenation is preferred:

- ∎ It- 'd
- ∎ It-ʻll

### HYPHENATED WORDS

Add an = sign to the end of a syllable to display a hyphen.

For example, the hyphen in the word "Ex-girlfriend":

Ex=girl- friend

Use the Merriam-Webster online dictionary to check hyphenation if you need to.

You can also use Dictionary. com as a reference for words not found on Merriam-Webster .

If the hyphenation on these two sites conflicts pick one and use it through-out your whole song.

**I** !

• ?

Try to use question marks and exclamation marks sparingly. Only use them where you feel they are appropriate.

Do not use quotation marks

- Should- n't
- Would- n't
- Could- n't
- Must- n't

COMMAS AND PERIODS

Do not use commas and periods, except for abbreviations. For example:

■ A.M.

P.M.

BROKEN VOWEL SOUNDS

A singer will sometimes break up vowels with a glottal stop.

For example the "is" in Blur's "Song 2":

i- is

Use hyphens for each syllable sung this way.

# AUTHORING LYRICS AND VOCAL MIDI NOTES

Use the Lyric To Clipboard Tool to create MIDI notes and lyric text events together.

#### IMPORTED VS MANUAL LYRICS

If you author your vocal MIDI notes first you will need to import your lyrics when you are done. Each time you make a change to your lyric text file you have to check your vocal MIDI and lyrics for errors. This can be tedious and time consuming. It is not a recommended workflow.

You can also add lyrics to your vocal MIDI notes as you author them, but this is also not recommended. This method increases the chance of mistakes:

- Hyphenation errors
- Formatting errors
- Spelling mistakes
- Using text events instead of a lyric event

### LYRIC TO CLIPBOARD

Use StackOverflow's Lyric To Clipboard tool to create MIDI notes and lyric text events:

- Hyphenate and format your lyrics in a text file
- Copy and paste a vocal phrase into the app
- Check Placeholder notes
- Choose an appropriate note size and spacing
- Click the Generate Lyrics button
- Paste MIDI notes and lyrics into PART VOCALS

Author with the MIDI notes that you have created. Your lyrics are already attached to each note. Repeat the process for the whole song. When you are done use **CAT** to add vocal slide text events to any vocal slide MIDI notes that you authored.



AUTHOR RECOMMENDED



Lyrics To Clipboard download: www.mediafire.com/ file/3zjz01gukpk8kpm/ LyricsToClipboard\_070420 22.zip/file

### JAPANESE LYRICS

Use Kueller's hyphenation tool to hyphenate Japanese lyrics for Rock Band.

### JAPANESE VS ROMAJI

Japanese is usually written in a combination of kana and kanji symbols. However, Rock Band does not support these symbols and only supports Latin characters. Because of that, Romaji lyrics need to be used instead for the song.

Romaji is the romanization of Japanese using the Latin (Roman) alphabet.

Most popular Japanese songs have Romaji lyrics available that are either official or fan-made.



Check out GhostByob's <u>J-Rock</u> <u>Band Channel</u> for Japanese custom songs in Rock Band!

### HYPHENATE YOUR ROMAJI AND ADD YOUR LYRICS INTO REAPER

To hyphenate your lyrics use Kueller's lyric hyphenator:

#### https://endlessrenovation. com/rb/hyph

#### Lyric Hyphenator



Convert! Do not prepend @ to the start of each line.

Follow these steps:

- Copy and paste your lyrics into the hyphenator
- Click the drop-down menu and select **Romaji**
- (Optional) Click the Do not append @ to the start of each line checkbox
- Click the **Convert** button

The website will hyphenate your lyrics. Copy and paste the lyrics into Notepad, then save the text file in a folder with your custom song files.

**Note**: The Romaji hyphenator works regardless of whether your text is in English or not. This means that you should double-check your lyrics before using them.

Use the **Lyric To Clipboard** tool to add MIDI notes and lyrics into REAPER. I find it best to do this one phrase at a time. This way you can make sure that you author each syllable correctly.

**Note**: You should not combine Romaji syllables (except in very rare circumstances). This is especially true if you do not understand Japanese.

### SPANISH LYRICS

There are several rules for Spanish lyrics to be aware of.

### INTRODUCTION

In Spanish the hyphenation of words can depend on:

- The structure of the word, and
- The next word in the phrase

This means that, depending on the context, syllables can change.

### HYPHENATION

Single consonants that are between vowels join the following consonant.

Separate multi-syllable words with dashes:

Pá- ra- me

Mu- je- res

The combinations "ch", "ll", and "rr" are never separated:

- No- ches
- ∎ Ca-lle

The letter "y" is considered a consonant when it is followed by a vowel.

O- ye- ra

In other cases, it is considered a vowel:

- Rey
- Soy

Separate two consonants that are between vowels, unless the second consonant is "i" or "r":

- Jun- to
- Fren- te
- Des- cu- bro
- A- blan- dar
- A- pro- bar

When there are more than two consonants between vowels:

 join the last consonant with the next vowel, unless it is an "i" or "r"

For example:

- Trans- pa- ren -te
- Mués- tra- me

SYNALEPHA

Split neighboring strong vowels

made by two vowels in a single

An accent over a weak vowel

A triphthong is three sounds

in one syllable. They always

common in Spanish words:

form one syllable. This is very

makes it strong. Separate

accented weak vowels:

syllable. Here the weaker vowels

("a", "e", and "o") into two

A diphthong is the sound

syllables:

Ca- os Ca- er

are "i" and "u":

Ai- re

Aut- to

Pier- na

Ca- í- da

Re- ú- ne

A- pre- ciáis

Synalepha merges two words with neighboring vowels into a single syllable.

In Rock Band we notate synalepha with this character:

∎ §

The symbol is lovingly referred to as "the galaxy."

We use it in to indicate when you should sing two words across a single syllable.

Synalepha is commonly used in Spanish and Italian poetry. For example, in this line of poetry by Garcilaso de la Vega:

Los cabellos que al oro
 escurecían

This translates as "The hair that endarkened the gold."

The words "**que**" and "**al**" form one syllable because of synalepha. The same is true for "**ro**" and "**es**". ■ Los ca- be- llos **que**§al oro§**es-** cu- re- cí- an

Because of synalepha the line has eleven syllables.

The exception to this rule is:

 If you notice a clear separation of words, or different notes in a phrase, then do not use synalepha

**Tip:** Press **Alt** + **0167** on the number pad for § the symbol.

Hyphenation tool for Spanish words:

respublicae.net/ lengua/silabas/ index.php

**Note**: It does not show synalepha.

### VOCAL PHRASES AND **OVERDRIVE DEPLOY**

A vocal phrase should be about the length of a single breath for the average player.

#### PHRASE MARKER **OVFRVIFW**

Phrase markers are authored on note A6 (105). Their purpose is to break your vocal MIDI track into breaths. This gives:

- The vocalist room to breathe
- The game a consistent structure to score

Phrase markers should start before, and end after, the group of vocal notes that they cover.

> Phrase markers should start and end on quarter (or eighth) note beats when possible.

#### PHRASE MARKERS AND NOTE TUBES

If you start or end phrase markers on vocal notes it may cause visual glitches, such as:

- Overdrive notes not showing up correctly
- Lyrics displayed at the wrong time in static vocals mode

Sometimes you may not be able to avoid vocal notes and phrase markers starting and ending at the same time. This can be the case in songs with a lot of harmonies.

Otherwise even a small gap between the start and end of phrase markers and note tubes is better. This gap can be as small as a 64th note, or even a 128th note.

Vocal phrases should be about the length of a single breath.

This means that a good phrase length for a mid-tempo song is two measures.

#### PHRASE MARKER **I FNGTH**

The smallest length for a phrase marker is:

A quarter note

Any phrase marker shorter than this will cause the following error in Magma:

Vocal phrase overlap

### STANDARD VS HD **SCREENS**

The number of words per phrase depends on the screen the player uses.

Standard definition screens cannot display as many lyrics as a widescreen display.

If you can, test your song on a standard display using the static HUD to make sure you can view each phrase.

### **OVERDRIVE DEPLOY SECTIONS**

Overdrive deploy sections appear between vocal phrases.

between phrase markers must

For this to happen the gap

be more than 0.6 seconds.

start or end together.

Overdrive deploy is not affected if notes and phrase markers do

### **CREATE PHRASE** MARKERS

If you import lyrics with the @ sign at the start of each line, CAT can create phrase markers for you.



VOCALS

### VOCAL OVERDRIVE

### STATIC HUD VOCAL RANGES

Use overdrive phrases to highlight memorable parts of the song.

A large vocal note range is difficult to read on the static vocal HUD.

### OVERVIEW

Overdrive is authored on note G#7 (116) and is always paired with a vocal phrase.

Overdrive and vocal phrases must line up with each other exactly. Follow the tip below to copy a vocal phrase and turn it into an Overdrive phrase.

Tip: Turn Snap on. Press and hold the Ctrl key. Click-drag a vocal phrase upwards into the Overdrive row in the template.

Place Overdrive markers **where they feel best** in the song.



Follow these rules	to place
Overdrive markers	correctly:

- Place one Overdrive phrase every five vocal phrases
- Author Overdrive markers consistently over similar melodic patterns
- Do not include vocal parts in Unison phrases
- Do not author Overdrive for about the last eight song measures

OVERDRIVE

gold color lyrics.

PHRASE MARKER PHRAS

Touching phrase markers

and Overdrive can cause

VISUAL BUG

For example, let's say that you author the second phrase of the first verse as Overdrive.

You should then author the same melody in the remaining verses as overdrive too. The same idea applies to the chorus or any other part of the song.

**Note**: If you are authoring harmonies you must add Overdrive to the PART VOCALS and HARM1 tracks. \*

\* The game does allow different overdrive

phrases for PART

VOCALS and HARM1.

But, because of a bug,

the overdrive phrases

in these two tracks

must match.

### **VOCAL RANGES**

The vocal MIDI template has a five-octave range.

This range is too large to be displayed all at once in the static vocal HUD in-game.

A comfortable range for the static HUD is two to two and a half octaves. A wider range of notes is difficult to read. To fix this problem we use a range divider marker:

■ %

Place the % marker:

- Between vocal ranges, and
- At the end of the last lyric in a phrase
- This will separate the vocal ranges of the phrases that come before and after it.

Players will be able to see pitch changes more easily.

**Note**: This function only applies to the static HUD, not the scrolling one.



VOCALS

# IMPORT LYRICS FROM A TEXT FILE

Importing lyrics from a .txt file is no longer my preferred workflow. This topic is included for reference.

Here we will look at importing lyrics for a whole song.

- Open your vocal MIDI track (in this case PART VOCALS)
- Press Ctrl + A to select all MIDI notes



Import your **hyphenated and formatted** lyric .txt file:

Press Ctrl + L

The **Load lyrics from file** window will open:

- Browse to your lyric .txt file and select it
- Click the **Open** button





Lyric text events are added to the selected MIDI notes. Check through your vocal MIDI for any mistakes:

 Make sure that each note has the correct lyric event attached to it

- If you find that some lyrics and notes do not match:

4

- Add new lyric text event in the problem area(s)
- Press Ctrl + A to select all MIDI notes
- Press Shift + A to align lyric events with notes

New lyrics (and all the lyric text events that follow) are shifted to the next MIDI note.

**Note**: You can edit your lyric .txt file and re-import it if you prefer (see steps 1 and 2).

### CREATE PHRASE MARKERS WITH CAT

In the previous topic we imported song lyrics into REAPER.

The lyrics have the @ sign at the start of each line.

CAT uses the @ sign to create phrase markers for each line.



#### Open CAT:

Press the F9 key

CAT will open. In the **Vocals** section:

2

 Click the Create phrase markers button

File Edit	74 C3 Reaper Automation Project - 🗆 🗙
ສະ ດ	- Animation and System:
173 ~	Create BEAT track Create animations events Create drums animations Create pro keys animations Remove invalid markers
Not Displ	S-lane:
Displayer	Remove notes Reduce to triple hits Fix sustains Fix trills/rolls Edit by MBT
C5 B	Polish notes Reduce chords Lower frets complexity Add missing solo/OD to pro Clean up notes' length
Bb	Reduce pro keys note density based on 5-lane
G#	
G	Drums:
F F	Remove kicks         Leave single snare hits         Flip disco beats         Unflip disco beats         Reduce 2x bass pedal         F
Eb	- Vorals
C# C4	Add slides Add space between tubes Remove illegal punctuation Capitalize first lyric in phrases Check/fix capitalization
B	Hide lyrics Change notes to non-pitched Create phrase markers Trim phrase markers Compact harmonies
A G#	Fix text events Add overdrive phrases Delete empty phrases Compact phrases Change notes to pitched
G F#	Export lyrics Show lyrics Create sing-a-long notes
E	r Supersets
D C#	Automatic reductions (5-lane) Automatic reductions (drums) Automatic animations Vocals clean up General clean up
C3 B	Pro Guitar/Bass
	Generate Root Notes Generate Fret Hand Positions Copy OD/Solo Markers from 5-lane Reduce from 5-lane



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0 F

The **Create phrase markers** window will open.

Note: There is a checkbox to Create overdrive markers for Vocals or Harmony 1. Leave this box unchecked. It is recommended that you pick memorable melodies for the vocalist yourself.

 Click the Create phrase markers button

CAT will create phrase markers for your vocal MIDI.

You can have tambourine, cowbell, or hand claps in a percussion section. Only one type of percussion can be used per song.

### INTRODUCTION

Percussion sections appear ingame for the vocalist to play.

They are authored on the PART VOCALS track.

There are two types of vocal percussion:

- Non-displayed percussion, and
- Displayed percussion ····



Non-displayed percussion is not playable. For example, check out "Hysteria" by Muse. The vocal chart uses both types of vocal percussion:



Some songs have long periods when the singer is silent.

This might be during:

- Instrumental breaks, or
- Solos

In these cases, a percussion section can be a good option.

Consider the following benefits to help you decide:

- A fun way to keep the vocalist engaged
- Can maintain immersion for the singer
- Should fit in with the style or mood of the song

Remember, these sections are an addition to the artists' original work. So be thoughtful about what you add, and where:  Do not put percussion in every available spot

WHEN TO ADD A PERCUSSION SECTION?

- If the percussion instruments don't fit the mood of the song, it is okay not to use them
- Do not put percussion at the start of a song. The introduction sets the mood for the song, and we prefer to keep it unchanged

**Note**: Each percussion section must be placed under one (or more) phrase markers.

Refer to the Percussion Phrase Marker topic on the facing page for details.

### MIDI NOTES AND TEXT EVENTS

Author playable percussion notes on MIDI note C6 (96). Author non-playable notes on MIDI note C#6 (97).

Add **one** of the following pairs of text events in PART VOCALS.

Tambourine:

- [tambourine\_start]
- [tambourine\_end]

Cowbell:

- [cowbell\_start]
- [cowbell\_end]

Clap:

- [clap\_start]
- [clap\_end]

These text events set up the animation cues. They also set the audio sample type used in the Magma **Game Data** tab. AUTOGENERATION THE MAGMA

ANIMATION SPEED Medium (100-160bp HOPO THRESHOLD 170 (default)

VOCAL GENDER Male

VOCAL PERCUSSION Tambourine VOCAL SCROLL SPEED Cowbell Hand Clap VOCAL GUIDE PITCH VOLUME -3.0 -

MUTE VOLUME VOCALS

In Magma select the vocal percussion that you authored in the PART VOCALS track.

### PERCUSSION PHRASE MARKER

The official docs recommend placing a phrase marker every two measures of percussion. \*

This stops the whole percussion section from appearing in the static vocals HUD.

The problem does not appear to affect Rock Band 3. It might still affect other titles though.

In Rock Band 3 you should be able to place one phrase marker for each percussion section.

If you experience issues, revert back to the two-measure recommendation.

\* This depends on the tempo of the song and the amount of percussion notes played.

### ANIMATION MARKERS

TEXT

[idle\_realtime]

[idle\_intense]

[play]

[mellow]

[intense]

Animation markers let you control the animation state of the singer.

#### **ANIMATION** MARKERS

Text events are placed to set the character animation state:

[play]		
You can use CAT to create these narkers if you wish:	[idle]	
Press F9 to open CAT		
Press the Create Animation		
Events button		

The Create animation markers dialogue will open:

- In the Select Instrument menu select Vocals
- In the Select Expression menu choose Play, Mellow, or Intense
- Click the Create markers button

Adjust automatic animation markers if needed. Add extra animation markers as required.

#### CHARACTER **FVFNTS** ANIMATION

The character has their microphone down and is not moving to the beat. The character is waiting for their cue. Useful in slower songs, or slow parts in a song.
The character has their microphone down and dances to the beat. Use [idle] before the song starts, after the song finishes, or during downtime. Downtime is at least two measures of rest.
The character is idling in an intense manner. For example, the vocalist picks up the mic stand and dances, or jumps up and down next to the mic stand.
The standard singing state.
Use for slow, quiet sections of a song.
For hard, fast sections of a song. For example, aggressive metal.

Use the **Instruments** text events list. Load these text events into REAPER: See pages 125 - 126.

### IDLE ANIMATION STATES

[idle] and [idle\_realtime] are responsive animations. The singer will quickly go into the mic down position.

This means that you should not use these animations as soon as the singer stops singing. Putting the mic down too quickly will look unnatural.

It is best to put the mic down a beat or so after the character stops singing.

Use [idle realtime] for sections where you don't want the singer moving to the beat. For example, during song intros and the end of songs.

[idle intense] is great for when the vocalist is into the song but has a section where they are not singing.

### PERCUSSION ANIMATIONS STATES AND TRANSITIONS

There are three different percussion animations:

- Clap
- Cowbell
- Tambourine

Let's use the tambourine as an example. To get the singer to play the tambourine requires a sequence of text events:

- A play animation state: [play]
- A percussion marker: [tambourine\_start]
- A camera cut: [coop\_v\_near]

In this sequence the percussion marker inherits the play animation state. Percussion animation starts at the next camera cut. In this case [coop\_v\_near].

But what happens if the previous animation state was [idle] instead of [play]?

Here the singer would stay in an idle state, but with a tambourine in their hand.

Finally, make sure that you leave a gap between singing and percussion sections. A gap of at least one measure is recommended.

This gives the player time to adjust between singing and playing percussion. It also provides time to change the character animation state. You should apply the one measure gap before and after each percussion transition.

Adjust the animation play state after each transition, if needed.
### **VOCAL PERCUSSION** EXAMPLE



569 VOCALS

tambourine.

### CLEANING UP SEPARATED VOCAL TRACKS

You can use separated vocals for lip-sync animations and to generate vocal MIDI notes.

In either case you may find that you want to clean up your separated vocals.

You can use Audacity to remove noise and fade in and out of vocal sections if you need to.

Download Audacity from: www.audacityteam.org/.



To remove noise from non-vocal sections of the track:

- Click and drag to make a selection
- Press Ctrl + L

The selected area is replaced with silence.

To start and stop playback:

Press the Spacebar







To fade bleed from other instruments in and out:

- Click and drag to make a selection
- Press **Ctrl** + , to fade in
- Press **Ctrl** + . to fade out

**Tip**: The period and comma keys typically have < and > symbols on them. Use these symbols as a visual reminder.

On the left is a fade out at the end of a vocal section. Here the guitar and vocals bleed together.

To export audio:

Click File > Export > Export as WAV

**Import** your saved file into a new track in REAPER:

- Press Ctrl + T to create a new track
- Drag and drop your audio file from Windows Explorer into the new track

571 VOCALS

### HOW TO AUTO-GENERATE VOCAL MIDI TRACKS

📙 | 🖓 📙 🖛 | TrackTemplates

File Home Share View

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Panes

Audio to MIDI.RTrackTemp late

Extra large icons 📧 Large icons

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8== Details

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Search TrackTempl.

1

If you find it difficult to author vocal pitches you can convert dry or separated vocals to MIDI.

This will give you a baseline of generated pitches to work from.

**Note:** It may take some work to turn the generated track into a good vocal MIDI track.

- Download Audio to MIDI.
   RTrackTemplate
- Copy the template to C:\ Reaper\TrackTemplates

Open	the	template	in	REAPER:

- Select your PART VOCALS track
- Click Track > Insert track from template > Open Template
- Select Audio to MIDI.
   RTrackTemplate
- Click OK

The Audio File and MIDI Converted tracks appear under your PART VOCALS track.

The **MIDI Converted** track is **armed**, and ready to record.







Copy your separated vocal track to the **Audio File** track:

- Select your separated audio vocal track
- Press Ctrl + C
- Select the Audio File track (MIDI area not track control)
- Press the **Home** button
- Press Ctrl + V
- **Solo** the Audio File track

**Note:** Check that the copied audio lines up with the other audio tracks before proceeding.

Convert your dry or separated vocal track to MIDI.

- In the MIDI Editor:
- Press the Home button
- In the Transport Bar:
- Click the **Record** button

Your vocal audio is converted to MIDI in real time.

- Wait for the song to finish:
- Click the **Stop** button in the Transport Bar
- Click the Save All button

### AUTO-GENERATED VOCALS

This example shows a generated vocal track that closely matches the authored vocals.

Here you can see a comparison of auto-genereted and authored vocal tracks.

As you can see, this generated MIDI provides a good baseline to work from:

- Vocal pitches are accurate
- Note timing is also quite good
- You can visually pick out many of the notes from the vocal melody
- Sustained notes are clearly visible
- There are few random notes

The main work here is to scrub the audio and check:

- Note pitches
- Note on and off timing



This example is a best-case scenario. You are more likely to find that an auto-generated MIDI is more difficult to work with:

- Some vocal pitches might not generate MIDI notes
- Note pitches may often show vibrato
- Note pitches may jump between octaves
- Many of the note durations may be very short
- It might be harder to see what the vocal melody is
- MIDI note on and note off timings may not be accuarte

In a worst-case scenario you can only use the generated notes as a very rough guide for your chart.

### VIEW MULTIPLE MIDI TRACKS IN A SINGLE EDITOR WINDOW

It is very helpful to view generated and authored notes in the same editor window:

- Press and hold the Ctrl key
- Select the PART VOCALS and MIDI Converted MIDI tracks

Note: Make sure that you select both of the MIDI tracks. If you select the track control panels the next step will not work:

Press Ctrl + Alt + E

Both tracks will appear in a single editor window. One track is displayed normally, the other is muted in the background.







To toggle between tracks:

Press Alt + N

The foreground track will alternate between PART VOCALS and the MIDI Converted tracks.

lose active media iten Close all inactive media items hanging activ PART VOCALS MIDI converte PART DRUMS 92 223.1.05 u 🔄 📖 🖄 🖸 PART BASS Channel: PART VOCALS 196 205 213 222 230 •MIDI converted HARM1 HARM2 HARM3 PART KEYS in, PART REAL KEYS X PART REAL\_KEYS\_H PART REAL\_KEYS\_M PART REAL\_KEYS\_E PART KEYS\_ANIM\_RH File PART KEYS\_ANIM\_LH Edit Navigate Options View VENUE PART REAL GUITAR **ii i i** i ii Content Actions PART REAL BASS Customiz Dock window <u>ырпен(</u> straight V IT Scale: C V Major Color: Pitch V Clore edito

To close the track in the background:

Right click the track tab

In the context menu:

 Click Contents > Close all inactive media items

## DRY-VOX AND LIP-SYNC ANIMATION

Dry-vox are required for lip-sync animation. There are several options to choose from.

#### DRYVOX OVERVIEW

Lip sync animation is a noticeable part of your custom song. When this animation is not in sync with the song, it does not look professional.

The standard method to produce lip sync animation is:

 Use dry vocal stem(s) in Magma when compiling your custom song

Stems are not an option for most custom songs though. This leaves us with a few other options to consider:

- Record dry vocals
- Vocal MIDI and lyrics export to Onyx
- Separated vocal audio

Let's take a look at these options in more detail.

#### RECORD DRY VOCALS

You can produce very good lipsync animations if you record your own dry vocal track(s).

1

Don't worry about having a great singing voice. You do not have to sing if you don't want to. Many authors get the best result as follows:

Speak in a monotone voice

off timing

■ Focus on note-on and note-

You can record your dryvox directly into REAPER. Then export your dry vocal track using the **dry vocal preset**.

To setup the **dry vocal preset** see pages 69 — 70.

VOCAL MIDI & 2 LYRICS EXPORT

Another option for lip-sync animations is to use Onyx.

Onyx uses phonetic analysis to convert your vocal chart(s) into a lip-sync file. The basic steps are as follows:

- Export your REAPER project
   MIDI file
- Open your MIDI in Onyx
- Create a lip-sync Rock Band
   3 .milo file
- Overwrite the .milo in your custom song file with the .milo from Onyx

For step-by-step instructions refer to pages 583 — 584.

Note: You will still need dry vox audio to compile your song with Magma. You can use the song audio if you plan to overwrite the .milo later.

### SEPARATED VOCAL AUDIO

3

Separated vocal audio can be a good alternative to dry vocal stems. But, you can quickly run into problems:

- Other instruments may bleed into the vocal track
- Separated audio does not produce solo and harmony vocal parts

If your song has more than one vocal part you may need to use an alternative method.

> **Note:** Check your lip-sync animations ingame. They may not be perfect when you use separated audio.

### .MILO FILES EXPLAINED

The .milo file is a file that exists inside a custom song. For Rock Band 3 the .milo file can contain the following:

lip-sync animations.

Record your own dry vocals for the best

- Lip-sync data
- Venue information
- Character animation tweaks
- Vocal assignments (which character sings which part)

The .milo file extension is formatted as follows:

.milo\_\*

The asterisk refers to the console platform. So a .milo for the xBox would be:

.milo\_xbox

### DRYVOX AND MAGMA

All the dryvox audio options use Magma to generate lip-sync animation:

- Dryvox stems
- Separated vocal audio
- Recorded dry vocals

For any of these options:

- Render each dryvox file using the dryvox preset
- Link to the rendered files in Magma when you compile your custom

Magma has fields for three vocal audio tracks:

- Solo / Harmony 1
- Harmony 2
- Harmony 3

### **RECORD DRY VOCALS**

2

0

Microphone setup in REAPER was briefly covered on page 54. To check, or change your recording settings:

- Press **Ctrl** + **P** to open REAPER preferences
- In the left preferences pane click **Device** (Under Audio)
- Check the Input Device listed. Select your microphone if available. Otherwise select Microsoft Sound Mapper.
- Click the OK button

Prepare your dry vocal track for recording. For this example we will use DRYVOX01:

- Expand DRYVOX01 to see the track controls
- Click the **red circle button** to arm the track: 🚺
- Click the **Input** drop down button: 🕞
- Select Input: Stereo > Left / **Right** from the context menu
- Click the Project timeline. Press the **Home** key to return the play cursor to the start of the Project





Click the **Record** button in the Transport Bar to begin recording:

- Pay attention to your **note on** and off timing
- **Sing or speak** the lyrics as clearly as you can

You may experience some visual latency as REAPER records your dry vocal track.

Click the **Stop** button in the Transport Bar to stop recording.

The Select files to save or delete window will open. To save your dry vocal:

4

Click the Save All button

Disarm the DRYVOX01 track:

Click the **red circle button** to dis-arm the track: 👩

Repeat steps 2 - 4 for harmony dry vocal tracks if needed.





### ONYX: CREATE LIP-SYNC FILE FOR MAGMA

2

File Edit Help View

Enalist

MIDI file C:\Customs\CustomSong.mid

Make RB3 .milo 1

Germar

Export your Project MIDI.

For a full band custom (without harmonies) solo these tracks:

- Song Audio, Count-in, Drums, Guitar, Bass, Vocals, Keys, Events, Venue, Beat
- Click File > Export Project
   MIDI
- Check your Export settings
- Click the OK button to save your MIDI file

Use **Onyx** to convert the MIDI file to a lip-sync file:

Click the Other tools button

The **Tools** window will open:

- Click the Lipsync tab
- Click the folder button.
   Browse for your exported MIDI file
- Click the Turn vocal tracks into LIPSYNC\* tracks for RB3 button

The **Task** tab will open. The conversion will run. The **original file is overwritten**.



Transition (ms)

Create \*.lipsync

MIDI stuff MOGG/VGS/FSB Lipsync Dry vox .milo RB3 cache GH3 cache GH:WoR cache Task

Spanish

Make GH2 .voc from PART VOCALS

Update RB3/TBRB .milo \*

Turn vocal tracks into LIPSYNC\* tracks for RB3

Turn vocal tracks into LIPSYNC\* tracks for TBRB





Package the lip-sync tracks(s) into a .milo file for Rock Band 3:

Click the **Lipsync** tab

**Note:** The MIDI file field references the same filename. This is the overwritten lip-sync file from step 2.

 Click the Make RB3 .milo\_\* button

The **Save Milo file** window will open:

Click the Save button

4

Your .milo\_xbox file is in the output directory.

The last step requires a complete custom file. This means that you will need to compile your custom song with Magma. This is covered in chapter 22.

> Add your .milo file into your finished custom on page 799.

- Author the vowel sound of each word. Do not author the consonants.
- Author the most prominent vocal part.
- Check lyric spelling, syllables, and punctuation.
- Don't author minute details such as little slides and vibrato.
   These details are not fun to sing.
- Never author two notes side by side with no space between them. This causes slides to not work properly. It also makes separate syllables of the same pitch look like one note.
- Start every vocal phrase with a capital letter.

### DRUM FILLS, OVERDRIVE ...

Workflow

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- Drum fills, Unisons, Overdrive
- Big Rock Ending, solos

### Markers are an essential part of your custom song.

In Rock Band 3 we use markers for drum fills, Unison phrases, Overdrive, solos, and Big Rock Endings.

The focus of this chapter is on the rules for authoring markers. We also look at the **best workflow** for authoring markers.

These symbols help you know which rules are for which instruments:



G Guitar

B Bass

K Keys

By the end of the chapter you will have learned how to:

- Author each marker
- Author drum fills that match the style of the song
- Stack instrument charts to author Unisons and Overdrive
- Calculate the frequency of Unisons and Overdrive phrases

### WORKFLOW

Follow this workflow to author instrument markers.

### OVERVIEW

Each instrument MIDI has markers that are needed to complete the chart. These markers include:

- Solos
- Drum fills
- Overdrive
- Unisons
- Big Rock Endings (BRE)

The correct workflow will help to simplify your decision making for this process.

#### 1: SOLOS

Solo markers are used for solos on drums, guitar and bass. (See page 611).

Author drum solo markers first so that you do not author drum fills during a drum solo.

### 2: DRUM FILLS

Drum fills are an important part of your drum chart. Author drum fills so that they feel right for your song. You will then know where you can put Overdrive and Unison phrases.

#### 3: OVERDRIVE

Overdrive phrases highlight interesting parts for each instrument. Stack your instrument charts (**Ctrl + Alt** + **E**) and author Overdrive phrases for guitar. Convert each Overdrive phrase to a Unison phrase with the **U** key. **Note**: Vocal Overdrive is on page 559.

### 4: UNISONS

Unison phrases highlight interesting parts that the whole band plays together. Cycle through your instrument charts with **Alt** + **N**. Convert about half of your Unisons into separate Overdrive phrases.

### 5: BIG ROCK ENDINGS

Big Rock Endings are at the end of a song. They are for the whole band to play. You cannot have drum fills, Unisons, or Overdrive during a BRE. Vocal parts cannot be authored during a BRE either.

### DRUM FILLS

Drum fills enable a drummer to deploy overdrive. The crash that deploys overdrive appears at the end of a drum fill section.

#### DRUM FILL OVERVIEW

Drum fills are authored on notes 120 (C8) to 124 (E8):

	PART DRUMS
Drum Fill	
Drum Fill (ı	use all 5 lanes)

Below is a drum fill marker for a single measure. It contains five sustained notes. The notes all start and end together.



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#### ONE FILL EVERY FOUR MEASURES

A common method for authoring drum fills is to:

 Place a fill marker every four measures

This works well for most songs. Exceptions are when the song is very fast or very slow:

- Very Fast Author two measure fills every eight measures (if it feels right to do so)
- Very Slow Author half measure fills every two measures (< 75 - 80 BPM)</li>

IMPORTANT TRANSITIONS

Fills should line up with important transitions in a song.

For example, if a verse has two extra bars before the chorus:

 Author the fill so that it ends at the chorus (rather than simply authoring every four measures)

Fills should end so that they match the style of the song.

For example, if the band pauses before the next section, consider ending the fill at the start of the pause.



Drum fills can vary in length to match the style of the song. Place them where they feel the best to play.

### MATCH THE STYLE OF THE SONG

Fills should end so that they match the style of the song. For example, "Kickstart My Heart" by Mötley Crüe. As you can see the chorus emphasizes the last upbeat of the measure. The drum fill ends to match this syncopated feel. The crash that appears at the end of the fill matches the original drum performance.



Upbeat emphasis

Blue Tom

ARTISTIC DECISIONS

Sometimes a song may have a great fill, or groove, that you want the drummer to play.

You cannot play these parts if you author a fill over them.

Not authoring a fill is an artistic decision that has the ability to improve or hamper gameplay. So, playtest your chart before finalizing your decision. For example, "Tom Sawyer" by Rush mixes the regular and artistic placement of fills.

At the end of the guitar solo the main theme returns with a short Unison phrase. This is followed by an epic fill that you definitely want the drummer to play.



### RULES AND ADVICE FOR AUTHORING DRUM FILLS

Drum fills are special - they allow the player some freedom of expression.

#### START OF LONG REST SECTIONS

Try to avoid authoring fills right before a long section of rest. This will help the drummer to not waste overdrive.

#### DOUBLE-LENGTH FILLS

It can be fun to occasionally author a double-length fill (if it fits the song).

A good place to do this might be after a long build up to the last loud chorus of the song.

### NO FILLS IN DRUM SOLOS

Do not author drum fills during drum solo sections.

#### END OF LONG REST SECTIONS

Fills are a good way to end a long rest section for the drummer. This gives the drummer a small drum solo before the beat comes back in.

#### FILLS AT THE END OF A SONG

Fills are fun to play and so you might want to put them at the end of your songs. Consider the following points before you do:

- The written ending may be more fulfilling for the rest of the players to hear
- The written ending may have a lock-step rhythm with the rest of the band that already sounds great

Try not to overwrite great song endings with a drum fill.

### AUTHORING STYLES

You can choose to mix and match methods as needed:

- One fill every four measures
- Match the song style
- Make artistic decisions

The method(s) that you choose can depend on the song.

Personally, I start with one fill every four measures and work from there. If a fill doesn't feel right I will delay it or change the length of the fill if needed.

I try to avoid authoring fills that sound awkward in their duration or place in the song.

Leaving space for the drummer to play a great fill also works very well. It's all about how the song feels to play.

### DRUM FILL ACTIVATION

It is important to understand how to author drum fills correctly.

There are two example measures below.

1

2

3

4

1

2

3

4

1

**Note**: Most of the drum gems are greyed out. The colored gems are the ones that will deploy overdrive when hit.

DRUM FILLS AND OVERDRIVE ACTIVATION NOTES

In the first measure the drum fill **ends** on the **four count**.

The kick and the ride **start** on the **four count.** 

If the player has enough Overdrive energy:

• The Overdrive crash replaces the kick and ride

The same principal applies to the second measure.

Here the drum fill **ends on the downbeat**. It ends on the one count of the next measure.

This is also where the kick and the Green crash begin. They **start on the downbeat**.

If the player has enough Overdrive energy:

 The Overdrive crash replaces the kick and crash

Drum fill lanes always end where the note to deploy overdrive starts.

Do not extend the fill so that it covers the first note of the next measure. Doing so will ruin the drum fill.

### HOW TO AUTHOR DRUM FILLS

Make sure that you end drum fill markers correctly.

### INTRODUCTION TO UNISON AND OVERDRIVE

Unison phrases represent an interesting part that is played by the whole band. Overdrive phrases represent an interesting part played by a single instrument.

### UNISON & OVERDRIVE

Overdrive (OD) phrases produce the white gems that appear in the instrument tracks in-game.

When played they fill the player's energy bar. The player deploys Overdrive for score multipliers (when they have enough energy).

Unison phrases are Overdrive phrases that the band plays together. When the whole band plays them, they result in bonus points for the band.

> **Note**: Vocal parts are never included in Unison phrases.

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#### MEMORABLE PHRASES

Unison and Overdrive phrases are placed where an interesting part is played.

Interesting does not have to mean that the part is difficult to play. It means that the part is memorable.

### PLAYABLE INSTRUMENTS

If an instrument is not played often in a song it may be hard to find places for Unison phrases. In this case:

 A single instrument can be left out of the Unison phrase

#### AUTHORING UNISON & OD

Unison and Overdrive phrases are authored on note 116 (G#7):

DRUMS, GUITAR, BASS, & KEYS

OVERDRIVE

A phrase authored for a single instrument is an Overdrive phrase.

If the same phrase is authored for all instruments then it is a Unison phrase.

Overdrive phrases cannot overlap unless they are Unison phrases.

Author **Unison** and **Overdrive** phrases for all instruments charted (drums, guitar, bass, and keys).

### EXAMPLE OVERDRIVE

:

:

•

The graphic below shows Overdrive for each instrument.

Each Overdrive phrase is on a different measure.

:

INSTRUMENT OVERDRIVE

:

G

. В

t ĸ

### EXAMPLE UNISON PHRASES

The graphic below shows Unisons for each instrument.

Each Unison phrase is on the same measure.

:

:

:

.

easure. this rule.

• D

G

: B

• K

LENGTH OF

Overdrive / Unison phrases

should be **one measure in** 

length. Note: There may be

exceptions but try to stick to

PHRASES



The workflow for creating Unison and Overdrive phrases starts on page 602.

### INTRODUCTION TO UNISON AND OVERDRIVE (CONTINUED)

#### NO OD AFTER A **DRUM FILL**

Do not place an Overdrive phrase immediately after a drum fill (see image below).

Doing so places a drum fill activation gem at the start of the Overdrive measure.

The player must deploy Overdrive if they don't want to fail the Overdrive measure.

This means that the player cannot stack Overdrive if they want to.



#### **OVERDRIVE IN** DRUM SOLOS

Do not author more than **four** Overdrive phrases during a drum solo. \*

\* Four Overdrive sections will fill the Overdrive energy meter. Any extra Overdrive energy will be wasted.



If there is a Unison phrase right before the drum solo only author two Overdrive phrases in the drum solo.

### **INSTRUMENT OD**

	G, B	, K: OD	WITH	FILL	
:	•	•	•		G
		•	•	:	В
				:	
:				:	к
	•			•	
	٥V	/ERDRI	VE	-	

The graphic above shows the guitar, bass, keys, and drums tracks stacked togther.

### NO DRUM UNISON / OD WITH FILLS

Drums cannot have a **Unison** or **Overdrive** phrase at the same time as a drum fill.

### NO OD WITH FILL D

NO OVERDRIVE

NO UNISON

NO UNISON WITH FILL

D



NO DRUM OD

**TOUCHING FILLS** 

Overdrive phrase that touches a

Drums should not have an

drum fill.

This is because an Overdrive off note happens at the same time as a drum fill on note.

This rule exists in the CARV validation scripts in CAT. For more information about CARV see page 762.

AND DRUM FILLS Guitar, bass, and keys can have Overdrive phrases at the same time as a drum fill.

### UNISON AND OVERDRIVE FREQUENCY

For each instrument author an Overdrive phrase

• •	NO	OD PHI	RASES	IN THE	E LAST	EIGHT	MEAS	URES
0	•	•	•	•		•	•	•
	1						8	3



### FREQUENCY OF

about every forty beats.

### The frequency of Overdrive and Unison phrases is based on:

PHRASES

 The number of beats in a song

For Rock Band instruments a good estimate is one Overdrive phrase every forty beats. This is one Overdrive phrase every ten measures of 4/4.

**Note:** The number of phrases can be less if an instrument is not playing for a large part of the song.

For other time signatures the number of phrases will vary. See table on the facing page.

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#### IDLE INSTRUMENTS

You may find songs where an instrument is idle (not playing) for a large part of the song.

In this case you should:

Re-calculate the amount of
 Overdrive phrases needed

To do this, subtract the number of idle measures from the total number of song measures.

For example, if the song is 100 measures long and the drums play for 50:

- 100 50 = 50 measures played
- 50 / 10 = 5 Overdrive phrases needed

•	•	•	4/4: 0	NE OVE	ERDRIV	E EVE	RY TEN	MEAS	URES
			•	•	•	•	•	•	•
1								1	0

#### EVEN PHRASE SPACING

Unison and Overdrive phrases should be spaced evenly throughout the song.

For example, we don't want eight phrases in the first half of the song, and only two in the second half.

A good way to check is to zoom out so that you can see the whole song. Make sure that:

- Phrases are evenly spaced
- The number of phrases in each half of the song is about the same

#### END OF THE SONG

Unison and Overdrive phrases should not be played at the end of a song:

- Do not place Unison phrases in the last twelve song measures \*
- Do not place Overdrive phrases in the last eight song measures \*

\* Try to stick to these guidelines as best you can.

#### VOCAL OVERDRIVE

For vocals, one Overdrive phrase every five vocal phrases is recommended.

Overdrive phrases should not be played at the end of the song:

 Do not place Overdrive phrases in the last eight measures

#### FREQUENCY OF OVERDRIVE / UNISON PHRASES BY TIME SIGNATURE

es end	Time Signature	Beats Per Measure	Overdrive / Unison Phrase Calculation	Phrase Frequency (Measures)
ases	2/4	2	40 beats / 2 beats per measure = 20	20
:	3/4	3	40 beats / 3 beats per measure = 13.3	13
lines	4/4	4	40 beats / 4 beats per measure = 10	10
	5/4	5	40 beats / 5 beats per measure = 8	8
nrase	6/4	6	40 beats / 6 beats per measure = 6.6	6 or 7
ot be ng:	7/4	7	40 beats / 7 beats per measure = 5.7	5 or 6

### UNISON AND OVERDRIVE FREQUENCY (CONTINUED)

### UNISON AND OVERDRIVE WORKFLOW

Calculate Unison and Overdrive frequency for other time signatures by counting beats.

#### OTHER TIME SIGNATURES

For time signatures not shown on the previous page you need to count beats:

- Count the number of beats in a measure, or
- Use the beat track as a reference \*

\* See next topic to use this method.

For example, a measure of 7/8 is counted like this:

 One, Two, One, Two, One, Two, Three

The beats are highlighted in bold. As you can see, 7/8 has three beats in a measure.

#### COUNT BEATS WITH THE BEAT TRACK

Use the beat track to count beats as follows. First make sure that the time signature is set in the timeline:

1120, 7/8 7<u>1.1.00</u> 0:00.000

Next create the beat track:

- Press F9 to open CAT
- Click the Create BEAT Track button
- Click the Create BEAT Track notes button
- Finally, open the BEAT track:Double click on the BEAT

track MIDI

The BEAT track will open and shows up beats and downbeats with MIDI notes:



Downbeats

Up beats

The example above is a measure of 7/8. It has one downbeat and two up beats.

Three beats per measure means that 7/8 has the same Overdrive / Unison frequency as 3/4. (See table on the previous page).

#### The graphics below show how to author Overdrive and Unison phrases:

- Stack your instrument tracks together
- Author Overdrive for guitar
- Change each Overdrive into a Unison phrase
- Break Unison phrases apart into Overdrive phrases

The next few topics discuss this workflow in more detail.

To set up the Unison phrase action see pages 85 — 86.





### UNISON AND OVERDRIVE TIPS AND TRICKS

### START WITH THE GUITAR TRACK

It is usually best to start authoring Overdrive / Unisons with the guitar track. This is beacuse it tends to have the most interesting parts to author.

#### LOOK FOR PARTS OF INTEREST

Look for measures where the whole band plays an interesting part together:

- A lead line
- Breakdown
- Pickup
- Build up to a chorus or solo

#### SHORT UNISON PHRASES

Unison phrases can be less than a measure long, if needed. This can happen for:

- Breaks
- Pickups

The opening pickup for "Supreme Girl" by The Sterns is a good example:



#### SUBSET UNISON PHRASES

A subset Unison phrase is when a Unison is not authored for all instruments.

This can happen when an instrument does not play often during a song. Most often this happens with keys.

In this case you can author a subset Unison for the other instruments. For example, a Unison phrase for drums, guitar, and bass (but not keys).

You should only do this if:

 A standard Unison is not possible, or very nonmusical to create

A two-instrument Unison is possible - but very unusual. **Note**: You need a special circumstance to justify this.

### KEYBOARD OVERDRIVE

If you author Pro keys:

- Author Unison / Overdrive to the PART KEYS and PRO REAL\_KEYS\_X tracks \*
  - \* The sections must be the same for both tracks.

For vocal Overdrive see

page 559.





### **UNISON VS OVERDRIVE** PHRASE RATIO



#### "GET UP, STAND UP" "LIVING IN AMERICA" "WHIP IT" 5 5 5 5 4 4 Ratio: 1 : 1.25 Ratio: 1 : 1 Ratio: 1 : 1.25



As you can see, most of the songs sampled have close to a 1 : 1 ratio. It is not unusual for a song to have one or two more Overdrive phrases than Unison phrases. "25 or 6 to 4" appears to be a special case. It has a few empty measures after one Overdrive. Other Overdrive phrases are followed by some very low note density measures.

### **UNISON VS OVERDRIVE**

As per the official Rock Band Network docs, the number of Unison and Overdrive phrases is usually about the same:

 "adjust every other [Unison] phrase to be an Overdrive phrase"

**Remember**: You need Overdrive for gold stars in-game. Too much Overdrive is not good, and neither is too little.

Ideally, you should only adjust the Overdrive / Unison ratio based on scoring.

With that in mind let's take a quick look at Overdrive and Unison phrases in a random selection of songs.

Key:





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### STACK INSTRUMENT TRACKS TO AUTHOR UNISON & OD

Stack instrument tracks as follows:

- Press and hold the Ctrl key
- Select instrument tracks one at a time \*

\* In this example the **drums**, **guitar** and **bass** tracks are selected

Note: Make sure that you select instrument MIDI tracks. If you select the track control panels the next step will not work:

Press Ctrl + Alt + E

The selected tracks appear in a single editor window. One track is displayed as normal. The others are greyed out in the background. Author Overdrive / Unison phrases as follows:

Select the guitar track \*

\* Press **Alt** + **N** to cycle through tracks if needed

- **Draw** an Overdrive phrase
- **Select** the Overdrive phrase
- Press the U key to convert the Overdrive phrase to a Unison phrase









Repeat step 2 until you have authored Unison phrases for the whole song.

Now break every other Unison phrase apart into individual Overdrive phrases:

- Press Alt + N to cycle through the instruments
- Keep one phrase in place.
   Drag the others into adjacent measures

This converts Unison phrases into separate Overdrive phrases. This also keeps phrases evenly spaced throughout the song.

Zoom out to review your charts:

 Press and hold Alt and use the scroll wheel to zoom out

You should see:

- Alternating Unison and Overdrive phrases
- Evenly spaced phrases

To close background tracks:

- Right click the track tab
- Click Contents > Close all interactive media items

### BIG ROCK ENDINGS

Big Rock Endings (BRE) happen at the end of a song. The whole band rocks out before a final hit.

### BIG ROCK ENDING OVERVIEW

Author BREs on notes 120 (C8) to 124 (E8):

DRUMS *, GUITAR, BASS, & KEYS	
BRE	
BRE	
BRE	
BRE	
BRE (use all 5 lanes)	

Below you can see a BRE for four measures. \* **Note:** On PART DRUMS use the same rows as you would for a drum fill.



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### WHEN TO AUTHOR A BRE?

Author a Big Rock Ending at the end of a song when:

- The part is too difficult to author, or
- The part is too difficult and you cannot play it in a way that feels good

### THE [CODA] TEXT EVENT

A **[coda]** text event is needed at the start of a BRE:

 Author the [coda] command in the EVENTS track



#### THE BRE FINAL HIT

The final hit of the BRE should happen after the BRE markers end. This is required for:

- Drums, guitar, bass, and keys
- Expert, Hard, Medium, and Easy

The final hit is very important. Without a final note (or hit) the BRE score will not count.

**Note**: The final hit can be more than one note. Do not use sustain notes.



### PRO KEYS BRE MARKER

If you are using Pro keys:

 Author a BRE on note 120 (C8) in PART REAL\_KEYS\_X

### NO OVERLAPPING NOTES

Notes should not overlap the start or end of a BRE marker.

Check your song in-game to make sure this is not happening.



### NO VOCALS DURING A BRE

Do not author vocal parts during a Big Rock Ending. If a vocal part overlaps you must choose how to proceed. Choose **one** of the folowing options:

- Author the BRE but not the vocal phrase that overlaps
- Do not author the Big Rock Ending
- Author all the instruments and vocals through to the end of the song



All instruments need character animations to be authored during a Big Rock Ending.

#### Guitar and bass:

 Author Expert notes during the BRE to generate rhythms for left-hand animations

#### Drums\* and keys:

Only require animation notes

\* For drums you can author the Expert part and use CAT to generate animations.



### SOLOS

### SUMMARY MARKERS

Solo markers are used for drums, guitar, bass, and keys.

#### SOLO MARKER OVERVIEW

Author solo markers on note 103 (G6):

### DRUMS, GUITAR, BASS, & KEYS

SOLO

Solo markers should start and end with the first and last notes of the solo.

### WHEN TO AUTHOR A SOLO?

SOLOS AT THE

END OF A SONG

For songs that end with a solo

make sure that you end the solo

marker as soon as possible. This

gives time for the solo score

marker to appear before the

end of the song.

Solos should be dictated by the music. Avoid putting solos on:

Small fills

Repeated lead lines

Only use a solo marker for an obvious solo.

For example, the first two measures of the guitar solo from "Here I Go Again" by Whitesnake.



- Author drum solos first, then drum fills, Unisons, and Overdrive markers.
- Drum fills can be authored once every four measures.
- You can author drum fills to match the style of the song.
- Unison and Overdrive phrases are typically one measure.
- Do not author a Unison phrase or a drum overdrive with a drum fill.
- Author one Unison or Overdrive every ten measures for 4/4.
- Do not author Unisons in the last twelve song measures.
- Do not author Overdrive in the last eight song measures.
- Start by authoring Overdrive / Unisons for the guitar track. It usually has the most interesting parts.
- Big Rock Endings need a final hit for each instrument.
- Do not author vocals during a Big Rock Ending.
- Author animation notes for all instruments during a BRE.

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### VOCAL HARMONIES

- Harmony phrase markers
- Vocal range Shift
- Rock Band Harmonies Project

Authoring vocal harmonies is an option for songs with many vocal parts. You do not have to author vocal harmony parts if you do not want to.

Lead vocal parts are authored in the PART VOCALS track. We covered this process in chapter 16. Here we discuss the how the PART VOCALS track and the harmony tracks work together. The main topics covered in this chapter are as follows:

- Phrase markers in harmony tracks
- How to use range shift markers
- New special lyric characters
- The Rock Band Harmonies Project and example harmonies from "New Kid in School"
- The snap to key feature

To identify vocal and harmony tracks we use these symbols:



### VOCAL HARMONIES

### HARMONY AUTHORING

Vocal harmonies are made up of the lead vocal part and up to two harmony parts.

#### HARMONIES OVERVIEW

We author Vocal harmonies on the following tracks:

#### HARMONIES

- HARM1 HARM2 HARM3
- HARM1 contains the lead vocal part. It is represented by the blue line in-game. This track is usually similar to the PART VOCALS track
- HARM2 is for two part harmony songs. It is represented by the red line in-game. In three part songs this track is usually for high pitch harmony parts

#### AUTHORING HARMONIES

Author harmonies the same way that you author lead (or solo) vocals. Keep the following things in mind though:

- When authoring harmonies quantize your notes to a 1/64 note grid. This will keep your authoring clear and easier to read
- Author block harmonies with the exact same timing \*

\* Block harmonies are harmonies that are sung in the same rhythm. We author them with the same timing even if the audio timing is not exactly the same. This keeps the vocal HUD clear, and makes it easier to read.

#### PART VOCALS AND HARM1

Author harmonies after you have completed your PART VOCALS track. Use PART VOCALS as the starting point for HARM1.

Your HARM1 track will usually be the same as your PART VOCALS track. But, there are some differences that you need to be aware of:

- The game will use Overdrive phrases and Events from PART VOCALS. These elements do not need to be in the HARM1 track. If you do copy these elements to HARM1 they must be identical to the PART VOCALS track
- The phrase markers in HARM1 are used for vocal scoring. The same is true in PART VOCALS. The difference is that in HARM1 the lead and harmony notes must be under a HARM1 phrase marker

#### This means that phrase markers in HARM1 must cover all the notes in HARM2 and HARM3.

For example, if you have a call and response part:

 Extend the phrase markers in HARM1 to cover the notes in HARM2

The best way to do this is to copy the phrase markers from PART VOCALS to HARM1. Then extend the phrase markers to also cover notes in HARM2.

You can see a simple example on the facing page:

- PART VOCALS has the lead part and phrase marker
- HARM1 has the lead part. The phrase marker is extended to also cover HARM2 notes
- HARM2 has the harmony notes

#### PART VOCALS AND HARM1 PHRASE MARKERS EXAMPLE



### HARMONY AUTHORING (CONTINUED)

HARM2 uses phrase markers for static vocals mode. HARM3 does not use phrase markers.

#### HARM2 AND 3 PHRASE MARKERS

Phrase markers are required in HARM2, but they do not control scoring:

- HARM2 phrase markers control when lyrics shift in Static Vocals mode \*
- Extend HARM2 phrase markers to include all HARM3 notes

\* Static Vocals mode displays lyrics in static chunks:

- HARM1 phrase markers and lyric shift markers control lead vocal lyric chunks
- HARM2 phrase markers control harmony lyric chunks

Note: Most songs will not need adjustments for Static Vocals. Simply copy HARM1 phrase markers to HARM2.

### STATIC VOCALS

The lyric shift note sets extra shift points for lyrics in **static vocals mode**.

You can find the lyric shift note at the bottom of the vocal MIDI templates:

I YRIC SHIFT

Lyric Shift Range Shift

Lyrics shift automatically with each new phrase marker. But sometimes there are too many lyrics in a phrase. In this case add lyric shift notes to create extra shift points.

**Note:** Use this feature sparingly. Harmonix used it to add extra polish to songs:

 To make lead and harmony lyrics line up in certain situations

For most songs, lyric shift notes are not needed at all.

#### VOCAL RANGE SHIFT

When a song has a large vocal range the vocal HUD will zoom out to show all the notes.

The zoom level is set at the start of the song, based on the vocal range of the whole song. This makes small changes in pitch much harder to read.

The zoom does not adjust itself to different vocal ranges during the song.

The solution to this problem is to author **range shift** notes.

**Note:** The Range shift note is under the Lyric Shift note at the bottom of vocal MIDI templates.

The range shift note tells the vocal HUD to adjust the zoom level to the vocal notes that come after it. This means that you can separate vocal ranges from each other with a range shift note. Use range shift notes to make small pitch changes easier to see.

### VOCAL RANGE SHIFT EXAMPLE

Note: The speed of the HUD

of the range shift note.

change is based on the duration

Use the range shift note to keep

HUD small. This will make small

Note: Range shifts are only used

when there significant changes

The graphic to the right shows

range shift. This is because the

the perfect situations for a

two ranges do not overlap.

With a range shift note the

zoom level of the HUD will be

set to the size of the red box.

up where you place the range

Without a range shift note the

vocal range would be from the

lowest to the highest note in

shift note.

the chart.

ranges. The vocal HUD will slide

This is the larger of the two

in vocal range in a song.

the range of vocal notes in the

changes in pitch easier to see.



Add Range Shift Note Here

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### HARMONY AUTHORING (CONTINUED)

### THE ROCK BAND HARMONIES PROJECT

Use the \$ symbol to hide lyrics in HARM2 or 3 when needed.

#### HIDE LYRICS FROM THE HUD

We use the \$ sign to hide lyrics in **HARM2** and **HARM3** tracks:

∎ \$

Add the \$ sign at the end of lyric text events.

Use the \$ symbol if HARM2 and HARM3 are singing different parts at the same time. Hide the harmony lyric that you do not want to display.

For example, to hide the lyric "harmony":

- ∎ har-\$
- ∎ mo-\$
- ∎ ny\$

You can edit lyric events manually to hide them. Or you can use the **Hide Lyrics** function in CAT to do it for you. CAT can **hide all**, or **selected** lyric events in HARM2 and HARM3.

#### HARMONY OVERDRIVE BUG

Vocal Overdrive for PART VOCALS and HARM1 can be authored separately. But a Rock Band 3 bug prevents this from being practical.

When PART VOCAL and HARM1 Overdrive phrases do not match:

 PART VOCAL Overdrive visuals are applied to HARM1

This means that Overdrive visuals in-game may not synchronize with HARM1 Overdrive phrases.

Because of this issue **Overdrive phrases must be identical** in PART VOCALS and HARM1.

### PHRASE MARKER END POINT

In Rock Band 2 the end of a phrase was calculated based on the position of the last note in the phrase.

This is not the case in Rock Band 3. In RB3 the end of a phrase marker marks the end of a phrase. This is important because the end of a phrase can trigger:

- Animations and sound effects, and
- Vocal score calculations (if applicable)

For this reason authors should try to **end phrase markers** on strong beats, such as:

- Quarter notes, and
- Eighth notes

This allows animations and sounds to sync to the rhythm of the song.

### RBHP PROJECT OVERVIEW

The Rock Band Harmonies Project (RBHP) is a fan project. It aims to upgrade all pre-RB3 disc and DLC tracks with harmonies.

The project may also make other improvements to tracks, including:

- Pro drums
- Pro keys
- Pro guitar / bass
- Other chart fixes

You can download RBHP MIDI files from Github:

 github.com/FujiSkunk/rbhp forked from github.com/ rbhp-espher/rbhp

The RBHP is a great resource to study harmony MIDIs for your favorite Rock Band songs!



ROCK BAND: HARMONIES PROJECT "NEW KID IN SCHOOL" BY THE DONNAS

### "NEW KID IN SCHOOL" HARM1

### **ROCK BAND: HARMONIES** PROJECT

HARM1 contains the lead vocal part. This was first authored in the PART VOCALS track.

When you copy PART VOCALS to HARM1 the following elements are required:

- Phrase markers
- Lead vocal MIDI notes
- Lyric text events

Typically you will copy the whole MIDI track from PART VOCALS to HARM1.

This means that HARM1 will also contain items that are not needed in HARM1:

Overdrive markers

Animation text events

It is fine to leave these items in HARM1 only if they remain identical to PART VOCALS.



If you copy Overdrive from PART VOCALS to HARM1 and need to extend the phrase marker:

Do not extend Overdrive to match the phrase marker

The HARM1 Overdrive marker must be the same as the one in PART VOCALS.

In this example, the harmony is a block harmony:



Do you feel lonely?

The blue line shows the HARM1 (lead vocal line). On the following pages we look at how to author the harmony in HARM2 and 3.

If the harmony was a call and response we would extend the phrase marker to cover the HARM2 and 3 notes. In this case we do not need to extend the phrase marker.

HARM1 Properties:

Phrase markers: Must cover lead **and** HARM2 /3 notes

### "NEW KID IN SCHOOL" HARM2

### **ROCK BAND: HARMONIES** PROJECT

HARM2 contains the main harmony part for this song.

HARM2 requires the following elements:

- Phrase markers
- Harmony MIDI notes
- Lyric text events

The phrase markers are copied from HARM1. In this example the phrase marker is not extended. This is because this is a block harmony part. Common intervals for harmony parts are:

- Minor 3rd (3 half steps)
- Major 3rd (4 half steps)
- Perfect 5th (7 half steps)
- Octave (12 half steps)

If you compare the pitches in this part to HARM1 you will see that this part is a perfect 5th (seven half steps) higher.



You can see this in the screenshot below:



The red line shows the HARM2 harmony part.

In other parts of the song the lead and harmony part sing at the same pitch.

Harmony parts can be higher, lower, or the same pitch as the lead vocal part.

### "NEW KID IN SCHOOL" HARM3

### ROCK BAND: HARMONIES PROJECT



### SNAP TO KEY

Snap to key can be very helpful when authoring vocals and harmonies.

#### KEYS AND SCALES IN MUSIC

In western music we organise groups of notes into keys. The key tells you the notes that belong to a specific scale.

For example, the notes for the C major scale are:

■ C, D, E, F, G, A, and B

There are no sharp or flat notes in the C major scale. The root note of the scale is C.

Compare this to the C minor scale which has three flat notes:

C, D, Eb, F, G, Ab, and Bb

There are many different keys to choose from. In this topic we will cover:

- How to set the key to a song
- The keys available in REAPER
- Snap to key in REAPER

#### You select song key in REAPER using two drop down menus:

**REAPER MIDI EDITOR** 

**KEYS AND CHORDS TYPES IN THE** 

Note

Scale

🗹 Scale: C 🗸

Use the note menu to select the root note of the scale.

Major

The scale drop down lists the following scale types:

- Chords
- Major
- Minor
- Natural minor
- Melodic minor
- Harmonic minor
- Pentatonic

#### Blues

The chord types are:

- Major triad
- Minor triad
- Major 7th
- Minor 7th
- Dominant 7th
- Diminished triad
- Diminished 7th
- Augmented 5th triad

**Note**: If you select the wrong key you will author incorrect notes.

### THE SNAP TO KEY FEATURE

The snap to key feature restricts the notes that you author to the selected key.

To use this feature:

- Check the Scale checkbox to enable snap to key
- Select a root note
- Select a scale

For example, the C major scale:



Your MIDI notes are now locked to the selected scale.

This can save you time when authoring vocal parts. For example, "New Kid in School" is in A# Major. If you copy the lead part up a perfect 5th you get the notes for the harmony part. You can see this in the graphic to the right.

#### Remember: When snap to key is enabled it applies to all of your MIDI tracks. Uncheck the Scale check box to turn off snap to key:

**Turn off** snap to key to author other instruments:



SNAP TO KEY

□ Scale: C ∨



- HARM1 is usually the same as the PART VOCALS track.
- Block harmonies are harmonies sung with the same rhythm. Author them with the same timing (even if the timing is not exactly the same in the audio).
- Add range shift notes for songs with a large vocal range.
- Use the \$ sign to hide HARM2 and HARM3 lyrics if needed. There is a CAT function that will do this for you.
- HARM1 should have phrase markers, lead vocal MIDI notes, and lyric text events.
- If you copied Overdrive markers to HARM1 do not extend them to match extended phrase markers.
- HARM2 should have phrase markers (from HARM1), harmony MIDI notes, and lyric text events.
- HARM3 should have harmony MIDI notes and lyric text events only.

### EVENTS TRACK

Text events

19

- Crowd animations
- Practice Mode

### OVERVIEW

Sample events are pre-set

in the C3 Template. It is very

unlikely that they are in the

correct place for your song.

these events to their correct

removed and replaced.

graphic below:

You will need to move some of

position. Others, wil need to be

The first few text events in the

EVENTS track are shown in the

### Text events in the EVENTS track structure your custom song.

Practice sections form part of the structure of your custom song. They provide a few benefits:

- They divide your song into sections that players can practice. For example, parts of the chorus, or guitar solo
- They structure the venue cues that Magma generates

You can author text events to create practice sections, or Magma can generate them for you. I recommend that you author practise sections. This is better for players, if they want to practise your song. It is also better for Magma, if you choose to have Magma generate your venue.

Other text events in the EVENTS track mark important functions such as:

- When the song audio starts and ends
- When the crowd should cheer at the start and end of your song
- When the score screen should appear
- Crowd animation

The last part of the chapter includes a full list of practise sections. I have edited the list it to make it more readable and to take up less space. The full list of practice sections is available in the RBN Docs if you need it.

#### EVENTS TRACK OVERVIEW

The C3 Template contains many sample text events in the EVENTS track.



They have different purposes and affect the main functions of the game. Along with the tempo map they form the structure of your custom song.

Text events in the EVENTS track fit into four groups:

- Crowd audio
- Crowd animation
- Practice sections
- Big Rock Endings (see pages
   609 610)

### events. They are used to control crowd audio, crowd animations, and practice sections.

The EVENTS track typically contains only text

#### EXAMPLE TEXT EVENTS

Text events in the EVENTS track include:

- [crowd\_normal]
   Sets a crowd animation state
- [music\_start]
  Controls crowd audio
- [prc\_intro]
   Practice section type event
- [music\_end]
   Controls crowd audio
- [end]
   End of song events
- EVENTS [prc\_intro] [crowd\_normal] [EVENTS] [music\_start] [prc\_verse\_1a]

### THE [END] TEXT EVENT

# THE [MUSIC\_START] AND [MUSIC\_END] TEXT EVENTS

The [music start] and [music end] text events

The [end] text event is an important element in your custom song.

The [end] event is the most important text event in your song. It sets the point where:

- Sound playback stops,
- Tracks are removed from the screen, and
- Scores are tabulated

To avoid clicks and pops in the audio place the [end] event after all audio stems have faded completely.

If it takes some time for the audio to fade you can fade the last note a little early.

Bass parts usually ring out the longest, so they are most often faded short.

You can find the [end] event at measure 92.4 in the EVENTS track. Drag it to the correct place at the end of your song. Or if you prefer you can delete it and create a new one.

**Note**: The [end] text event must be the last item in your project:

 There must not be any MIDI notes or text events after the [end] text event Once the [end] event is in the right place, use CAT to create a new BEAT track:

- Press F9 to open CAT
- Click the Create BEAT track button

The **Manage Beat Track** window will open:

 Click the Create BEAT track notes button

Check that the last note of the BEAT track occurs one beat before the [end] text event. The **[music\_start]** text event has two functions, it:

- Shifts the crowd audio from the "intro" state to the "play" state, and
- Triggers a 'big cheer' sound effect

The "intro" audio state is the crowd milling about the club waiting for the band to play.

The "play" audio state is when the crowd reacts to how well you are playing the song. The crowd will cheer if you are doing well, and boo if you are not. The "big cheer" happens at the start of the "play" audio state.



You can find the [music\_start] event at measure three of the EVENTS track.

control crowd audio.

Move the [music\_start] event to the following place in your song:

 Where the crowd would recognize the song and get excited

This is usually when a main riff starts or when the whole band starts to play together. The **[music\_end]** event also has two functions, it:

- Shifts the crowd audio from the "play" state to the "outro" state, and
- Triggers a 'big cheer' sound effect

The "outro" audio state is the crowd cheering your performance. A "big cheer" also happens at the start of the "outro" audio state.

You can find the [music\_end] event at measure ninety-one.

Move the [music\_end] event to the following place in your song:

 Right after the last note or when the crowd would start cheering at the end of a song



The BEAT track ends one beat before the [end] text event. **OVERVIEW** 

intensity levels:

mellow

normal

intense

mellow out.

Crowd animations are a lot like

the player animation events.

want the animation to start.

You must place one of these

events near the start of your

song. A good place would be

where you want the crowd to start jumping up and down.

will go crazy. If not, they will

If you want more control over

more text events to the song.

The crowd will react based on

your band meter. The intensity

of the crowd will never go above

the crowd intesity you can add

If you are playing well the crowd

set in the EVENTS track. You place text events where you Remember: Crowd text events stay Crowd animations have three in effect until you place another one on the track It is a good idea to:

### quiet parts of the song

the crowd to be going crazy at that point

 Gradually increase the crowd intensity

**normal]** for a pre-chorus and [crowd\_intense] for the chorus. The extra crowd intensity during the chorus can work very well.

The crowd will normally clap along with the song when your band meter is full. The clap

the intensity level that you have tempo will be the same as the

■ Use [crowd\_mellow] for

It would look unatural for

For example, use [crowd\_

### notes in the BEAT track. If you need the crowd to stop

clapping anywhere in the song use the [crowd\_noclap] event.

If you want the crowd to start clapping again place the [crowd\_clap] event.

You should also use the [crowd\_ noclap] event as follows:

Place the [crowd\_noclap] event just before the last note of the song

> This stops the crowd from clapping after the last note of the song

If you do not do this the crowd will continue to clap until the [end] event. This usually sounds quite odd.

### TEXT EVENT

### CROWD ANIMATION

[crowd_realtime]	The crowd is animated without moving to a beat. This is the default animation for the beginning of a song.
[crowd_intense]	Allows for maximum crowd intensity. The crowd will go crazy and jump around if you are doing well.
[crowd_normal]	The crowd will sway and put their hands up, but will never get really crazy.
[crowd_mellow]	The crowd sway to the song and stay pretty mellow.
TEXT EVENT	CLAPPING SOUND
[crowd_clap]	A clapping sound will play with the song when you are doing really well. This is the default state.
[crowd_noclap]	This turns off the clapping sound effect, no matter how well you are doing. Use this when the crowd wouldn't clap along. For example, during a rhythm break down, or during a quiet section.

### THE EVENTS LIST

The Events list is a text file that includes the crowd animation and clapping sound text events. Load the list as follows: Double-click in the EVENTS

The Add Text Event window opens:

track text event area

- Click the **Load** button
- Browse to C:\Reaper\Data\ Text\_strings\
- Select the Text Events List - Events.txt file
- Click Open

The **Text** drop down menu will now show crowd animation text events and practice sections.

Note: There must be at least one practice section authored for a song to compile correctly.

### CROWD ANIMATION TEXT EVENTS

Load the EVENTS list for crowd animation and

clapping sound text events.

The crowd intensity is controlled by text events in the EVENTS track.

CROWD ANIMATIONS
# PRACTICE MODE TIMEKEEPING NOTES

If you are using stems you can add timekeeping notes for Practice Mode.

#### PRACTICE MODE **OVFRVIFW**



# PRACTICE SECTIONS

Practice sections are text events. If you author them as lyric events they will not work.

### PRACTICE **SECTIONS**

4.4

Practice sections are authored in the EVENTS track:



Author practice sections as text events.

#### AUTO-GENERATED **SECTIONS**

If you do not author practice sections then Magma will generate some for you.

Magma will divide the song into five, ten, or twenty parts. This depends on the length of the song. Practice sections are named based on the number of divisions. For example:

■ "10-20%", or "10-15%"

### LOAD EVENTS **TEXT EVENTS**

The Events list includes the full list of practice sections. Load the list as follows:

Double-click in the EVENTS track text event area

The Add Text Event window opens:

- Click the Load button
- Browse to C:\Reaper\Data\ Text\_strings\
- Select the Text Events List - Events.txt file
- Click Open

The Text drop down menu will now show practice sections. Type your search in the **text** field to select practice sections from the list.

**Note**: There must be at least one practice section authored for a song to compile correctly.

### **AUTHORED SECTIONS**

Ideally you should author practice sections. Place a text event at the start of a song section and select a practice section name.

For example, place a "Chorus" practice section at the start of the song chorus.

You can place the same practice section name more than once. but this is not recommended. Sections will not appear as unique sections in-game if you do this. Instead, author each section with a unique name. For example, you could divide a chorus into two sections:

- [prc\_chorus\_1]
- [prc\_chorus\_1a]

As you place sections think about how a player might want to practice different parts of the song. Divide your song into logical sections.

# C3 TEMPLATE: EVENTS TRACK

# VENUES, TEXT EVENTS, AND PRACTICE SECTIONS

The C3 Template includes default practice sections in the EVENTS track.

The EVENTS track in the C3 Template includes the following practice sections:

- [prc\_intro]
- [prc\_verse\_1a]
- [prc\_verse\_1b]
- [prc\_bridge\_a]
- [prc\_verse\_2a]
- [prc\_verse\_2b]
- [prc\_chorus\_1a]
- [prc\_gtr\_solo]
- [prc\_verse\_3a]
- [prc\_verse\_3b]
- [prc\_verse\_3c]
- [prc\_chorus\_2a]
- [prc\_outro]

These text events serve as an example song structure. You can see that verses are divided in to two sections each. While the intro, bridge, chorus, solo, and outro have one section each.

Your song may have its own unique structure. You can organize your practice events in a way that makes the most sense for your song.

You may find that a practice section around every four measures might work well for your song. A practice section after a riff repeats twice can also work well for some songs.

Let's take a closer look at some common practice sections:

- Intro: The first part of the song. It sets up the song and leads into the verse.
- Verse: Contains the main lyric back story. Each verse has different lyrics. The music is usually identical.

- Bridge:
   Also known as the prechorus. Connects the verse to the chorus. Often uses the IV or ii chord to lead into the chorus. Can also use new patterns or harmonies. In pop music the bridge is a section that contrasts with the verse. It breaks up the repetitive pattern of words and music in the song. A common bridge is the middle eight (usually placed after the second chorus).
- Chorus: The part of the song that repeats the most. It contains the main idea of the song musically and lyrically. Most choruses are eight measures long. The chorus may also double in length later on in the song.
- Outro: The last part of the song. Often this may be the chorus repeated to fade ("outro chorus"). Otherwise, the outro may be a new section that closes the song.

Magma will generate a venue if you do not author one. But, to do this, Magma needs at least one of the following practice sections:

- [prc\_intro]
- [prc\_verse]
- [prc\_chorus]
- [prc\_bridge]
- [prc\_outro]

Variations of these sections will also work. For example:

- [prc\_chorus\_1], or
- [prc\_intro\_a]

**Note:** The text events list is in alphabetical order. This means that practice sections are not always grouped together properly.

Add Text	Event	×
Text:		~
Type:	[prc_a4] [prc_a5] [prc_a6]	
Position:	[prc_a7] [prc_a8] [orc_a9]	

For example, if you were searching for an **intro** practice sections you would type:

[prc\_intro

The initial results would be:

[prc\_intro] [prc\_intro\_a] [prc\_intro\_b] [prc\_intro\_chorus] [prc\_intro\_chorus\_a] [prc\_intro\_chorus\_b] [prc\_intro\_chorus\_c] [prc\_intro\_chorus\_d] [prc\_intro\_d]

As you can see the **intro\_chorus** group interrupts the **intro** practice sections list.

[prc\_intro\_e]

The rest of this chapter contains a list of practice section text events. This list has been abbreviated to save space. For example:

ORIGINAL LIST

[prc\_intro] [prc\_intro\_a] [prc\_intro\_b] [prc\_intro\_c] [prc\_intro\_d] [prc\_intro\_e]

Lighting in auto-generated venues requires

specific practice section(s) to work.

ABBREVIATED LIST

[prc\_intro] \_a, \_b, \_c, \_d, \_e

This keeps the list compact. It also lets you see events and their variations at a glance.

Keywords are highlighted in bold. The descriptive names for practise sections are not included. For example, the descriptive name for [prc\_intro\_ slow\_a" is "Intro slow a".

# INTRO, FADE, ENTERS, VERSE

# VERSE, CHORUS, BRIDGE

[prc\_**intro**] \_a, \_b, \_c, \_d, \_e

[prc\_intro\_**slow**] \_a, \_b, \_c, \_d, \_e

[prc\_intro\_**fast**] \_a, \_b, \_c, \_d

[prc\_intro\_**heavy**] \_a, \_b, \_c, \_d

[prc\_**quiet**\_intro] \_a, \_b, \_c, \_d

[prc\_**noise**\_intro] \_a, \_b, \_c, \_d

[prc\_**drum**\_intro] \_a, \_b, \_c, \_d

[prc**\_bass**\_intro] \_a, \_b, \_c, \_d

[prc\_**vocal**\_intro] \_a, \_b, \_c, \_d

[prc**\_gtr**\_intro] \_a, \_b, \_c, \_d, \_e

[prc**\_violin**\_intro] \_a, \_b, \_c, \_d

[prc\_**strings**\_intro] \_a, \_b, \_c, \_d

[prc\_**orch**\_intro] \_a, \_b, \_c, \_d

[prc**\_horn**\_intro] \_a, \_b, \_c, \_d [prc**\_harmonica\_**intro] \_a, \_b, \_c, \_d

> [prc**\_organ**\_intro] \_a, \_b, \_c, \_d

[prc**\_piano**\_intro] \_a, \_b, \_c, \_d

[prc\_**keyboard**\_intro] \_a, \_b, \_c, \_d

[prc\_**dj**\_intro] \_a, \_b, \_c, \_d

[prc\_intro\_**hook**] \_a, \_b, \_c, \_d

[prc\_intro\_**riff**] \_a, \_b, \_c, \_d

[prc**\_fade\_in**] \_a, \_b, \_c, \_d

[prc\_drums\_enter] [prc\_bass\_enters] [prc\_gtr\_enters] [prc\_rhy\_enters] [prc\_band\_enters] [prc\_syth\_enters] [prc\_organ\_enters] [prc\_piano\_enters] [prc\_kick\_it]

[prc\_intro\_chorus] \_a, \_b, \_c, \_d [prc\_verse] \_a, \_b, \_c, \_d, \_e, \_f a, b, c, d, e, f [prc\_**verse\_**2] a, b, c, d, e, f

[prc verse 1]

[prc**\_verse\_**3] a, b, c, d, e, f

[prc**\_verse\_**4] a, b, c, d

[prc**\_verse\_**5] a, b, c, d

[prc**\_verse\_**6] a, b, c, d

[prc**\_verse\_**7] a, b, c, d

[prc**\_verse\_**8] a, b, c, d

[prc**\_verse\_**9] a, b, c, d

[prc\_**alt**\_verse] \_a, \_b, \_c, \_d

[prc\_**quiet**\_verse] \_a, \_b, \_c, \_d

[prc**\_preverse**] \_a, \_b, \_c, \_d

[prc**\_preverse\_**1] a, b, c, d

[prc**\_preverse\_**2] a, b, c, d [prc**\_preverse\_**3] a, b, c, d

#### [prc**\_preverse\_**4] a, b, c, d

[prc**\_preverse\_**5] a, b, c, d

[prc**\_postverse**] \_a, \_b, \_c, \_d

[prc**\_postverse\_**1] a, b, c, d

[prc**\_postverse\_**2] a, b, c, d

[prc**\_postverse\_**3] a, b, c, d

[prc**\_postverse\_**4] a, b, c, d

[prc**\_postverse\_**5] a, b, c, d

[prc**\_chorus**] \_a, \_b, \_c, \_d

[prc**\_chorus\_**1] a, b, c, d

[prc**\_chorus\_**2] a, b, c, d

[prc**\_chorus\_**3] a, b, c, d

[prc**\_chorus\_**4] a, b, c, d [prc**\_chorus\_**5] a, b, c, d

[prc**\_chorus\_**6] a, b, c, d

[prc**\_chorus\_**7] a, b, c, d

> [prc**\_chorus\_**8] a, b, c, d

[prc**\_chorus\_**9] a, b, c, d

> [prc\_chorus\_**break**] \_a, \_b, \_c, \_d

[prc\_**breakdown**\_chorus] \_a, \_b, \_c, \_d

[prc\_**alt**\_chorus] \_a, \_b, \_c, \_d

[prc**\_prechorus**] \_a, \_b, \_c, \_d

> [prc**\_prechorus\_**1] a, b, c, d

[prc**\_prechorus\_**2] a, b, c, d

[prc**\_prechorus\_**3] a, b, c, d

> [prc\_**prechorus\_**4] a, b, c, d

[prc**\_prechorus\_**5] a, b, c, d [prc**\_postchorus**] \_a, \_b, \_c, \_d

[prc**\_postchorus\_**1] a, b, c, d

[prc**\_postchorus\_**2] a, b, c, d

[prc**\_postchorus\_**3] a, b, c, d

[prc**\_postchorus\_**4] a, b, c, d

[prc**\_postchorus\_**5] a, b, c, d

[prc**\_bridge**] \_a, \_b, \_c, \_d

[prc**\_bridge\_**1] a, b, c, d

[prc**\_bridge\_**2] a, b, c, d

[prc**\_bridge\_**3] a, b, c, d

[prc**\_bridge\_**4] a, b, c, d

prc**\_bridge\_**5] a, b, c, d

[prc**\_bridge\_**6] a, b, c, d

[prc**\_bridge\_**7] a, b, c, d

# BRIDGE, SOLO

# SOLO, PART

[prc**\_bridge\_**8] a, b, c, d

[prc**\_bridge\_**9] a, b, c, d

[prc**\_gtr\_solo**] \_a, \_b, \_c, \_d, \_e, \_f, \_g, \_h, \_i, \_j, \_k, \_l, \_m, \_n, \_o, \_p, q, \_r, \_s

[prc**\_gtr\_solo\_**1] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**2] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**3] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**4] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**5] a, b, c, d, e, f, g, h, i, j, k, l, m, n

prc**\_gtr\_solo\_**6] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**7] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**8] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc**\_gtr\_solo\_**9] a, b, c, d, e, f, g, h, i, j, k, l, m, n

[prc\_**slide**\_solo] \_a, \_b, \_c, \_d [prc**\_slide\_**solo\_1] a, b, c, d

> [prc\_**slide**\_solo\_2] a, b, c, d

[prc\_**slide**\_solo\_3] a, b, c, d

[prc\_**slide**\_solo\_4] a, b, c, d

[prc\_**drum**\_solo] \_a, \_b, \_c, \_d

[prc**\_drum\_**solo\_1] a, b, c, d

[prc**\_drum\_**solo\_2] a, b, c, d

[prc\_**drum**\_solo\_3] a, b, c, d

[prc**\_drum\_**solo\_4] a, b, c, d

[prc\_**perc**\_solo] \_a, \_b, \_c, \_d

[prc**\_perc\_**solo\_1] a, b, c, d

[prc**\_perc**\_solo\_2] a, b, c, d

[prc\_**perc**\_solo\_3] a, b, c, d

[prc**\_perc**\_solo\_4] a, b, c, d [prc\_**bass**\_solo] \_a, \_b, \_c, \_d

[prc**\_bass\_**solo\_1] a. b. c. d

[prc\_**bass**\_solo\_2] a, b, c, d

[prc**\_bass\_**solo\_3] a, b, c, d

[prc**\_bass\_**solo\_4] a, b, c, d

[prc**\_organ\_**solo] \_a, \_b, \_c, \_d

[prc**\_organ\_**solo\_1] a, b, c, d

[prc**\_organ\_**solo\_2] a, b, c, d

[prc**\_organ\_**solo\_3] a. b. c. d

[prc**\_organ\_**solo\_4] a, b, c, d

[prc**\_piano\_**solo] \_a, \_b, \_c, \_d

[prc**\_piano\_**solo\_1] a, b, c, d

[prc**\_piano**\_solo\_2] a, b, c, d

[prc**\_piano**\_solo\_3] a, b, c, d prc\_**piano**\_solo\_4] a, b, c, d [prc\_**keyboard**\_solo] \_a, \_b, \_c, \_d [prc**\_keyboard**\_solo\_1]

[prc**\_keyboard\_**solo\_2] a, b, c, d

a. b. c. d

[prc\_**keyboard\_**solo\_3] a, b, c, d

[prc**\_keyboard\_**solo\_4] a, b, c, d

[prc\_**synth**\_solo] \_a, \_b, \_c, \_d

[prc**\_synth\_**solo\_1] a, b, c, d

[prc**\_synth\_**solo\_2] a, b, c, d

[prc\_**synth\_**solo\_3] a, b, c, d

[prc\_**synth**\_solo\_4] a, b, c, d

[prc**\_harmonica\_**solo] \_a, \_b, \_c, \_d

[prc**\_harmonica**\_solo\_1] a, b, c, d

[prc\_**harmonica**\_solo\_2] a, b, c, d [prc**\_harmonica**\_solo\_3] a, b, c, d

[prc**\_harmonica\_**solo\_4] a, b, c, d

[prc\_**sax**\_solo] \_a, \_b, \_c, \_d

> [prc**\_sax\_**solo\_1] a, b, c, d

> > [prc**\_sax\_**solo\_2] a. b. c. d

[prc\_**sax**\_solo\_3] a, b, c, d

[prc\_**sax**\_solo\_4] a, b, c, d

> [prc**\_horn**\_solo] \_a, \_b, \_c, \_d

[prc**\_horn**\_solo\_1] a, b, c, d

[prc**\_horn**\_solo\_2] a, b, c, d

[prc**\_horn**\_solo\_3] a, b, c, d

[prc**\_horn**\_solo\_4] a, b, c, d

[prc**\_flute**\_solo] \_a, \_b, \_c, \_d

[prc**\_flute\_**solo\_2] a, b, c, d [prc**\_flute\_**solo\_4] a, b, c, d

[prc\_**noise**\_solo] \_a, \_b, \_c, \_d

[prc flute solo 3]

a, b, c, d

[prc\_**noise**\_solo\_2] a, b, c, d

[prc\_**noise**\_solo\_3] a, b, c, d

[prc**\_noise**\_solo\_4] a, b, c, d

[prc\_**dj**\_solo] \_a, \_b, \_c, \_d

[prc**\_dj\_**solo\_2] a, b, c, d

[prc**\_dj\_**solo\_3] a, b, c, d

[prc\_**dj**\_solo\_4] a, b, c, d

[prc\_**slow**\_part] \_a, \_b, \_c, \_d

[prc**\_slow**\_part\_2] a, b, c, d

[prc\_**slow**\_part\_3] a, b, c, d

[prc\_**slow**\_part\_4] a, b, c, d

# PART, BREAK

# BREAK, INTERLUDE, SOUNDSCAPE, JAM

[prc**\_fast\_**part] \_a, \_b, \_c, \_d

[prc\_**fast**\_part\_2] a, b, c, d

[prc\_**fast**\_part\_3] a, b, c, d

[prc\_**fast**\_part\_4] a, b, c, d

[prc\_**quiet**\_part] \_a, \_b, \_c, \_d

[prc\_**quiet**\_part\_2] a, b, c, d

[prc\_**quiet**\_part\_3] a, b, c, d

[prc\_**quiet**\_part\_4] a, b, c, d

[prc\_**loud**\_part] \_a, \_b, \_c, \_d

[prc\_**loud**\_part\_2] a, b, c, d

[prc\_**loud**\_part\_3] a, b, c, d

[prc**\_loud\_**part\_4] a, b, c, d

[prc\_**heavy**\_part] \_a, \_b, \_c, \_d

[prc **heavy** part 2]

a. b. c. d

[prc\_fast\_

a, b, c, d

[prc**\_spacey\_**part\_3] a, b, c, d

> [prc\_**spacey**\_part\_4] a, b, c, d

[prc heavy part 3]

[prc heavy part 4]

[prc\_**spacey**\_part]

[prc **spacey** part 2]

\_a, \_b, \_c, \_d

a, b, c, d

a. b. c. d

[prc\_**trippy**\_part] \_a, \_b, \_c, \_d

[prc**\_trippy**\_part\_2] a, b, c, d

[prc\_**trippy**\_part\_3] a, b, c, d

[prc\_**trippy**\_part\_4] a, b, c, d

[prc**\_break**] \_a, \_b, \_c, \_d

[prc**\_break\_**1] a, b, c, d

[prc**\_break\_**2] a, b, c, d

[prc**\_break\_**3] a, b, c, d [prc**\_break\_**4] a, b, c, d

[prc**\_breakdown**] a, b, c, d

[prc**\_breakdown\_**1] a, b, c, d

[prc**\_breakdown\_**2] a, b, c, d

[prc**\_breakdown\_**3] a. b. c. d

[prc**\_breakdown\_**4] a, b, c, d

[prc\_**gtr**\_break] \_a, \_b, \_c, \_d

[prc**\_gtr\_**break\_1] a, b, c, d

[prc**\_gtr\_**break\_2] a, b, c, d

[prc**\_gtr\_**break\_3] a. b. c. d

[prc**\_gtr\_**break\_4] a. b. c. d

[prc\_**bass**\_break] \_a, \_b, \_c, \_d

[prc**\_bass**\_break\_1] a, b, c, d

[prc\_**bass**\_break\_2] a, b, c, d [prc**\_bass**\_break\_3] a, b, c, d

[prc**\_bass**\_break\_4] a. b. c. d

#### [prc\_**drum**\_break] \_a, \_b, \_c, \_d

[prc**\_drum\_**break\_1] a, b, c, d

[prc**\_drum\_**break\_2] a, b, c, d

[prc**\_drum\_**break\_3] a, b, c, d

[prc**\_drum\_**break\_4] a, b, c, d

[prc\_**organ**\_break] \_a, \_b, \_c, \_d

[prc**\_organ\_**break\_1] a, b, c, d

[prc**\_organ\_**break\_2] a, b, c, d

[prc**\_organ\_**break\_3] a, b, c, d

[prc**\_organ\_**break\_4] a, b, c, d

[prc\_**synth**\_break] \_a, \_b, \_c, \_d

[prc\_**synth**\_break\_1] a, b, c, d [prc\_**synth**\_break\_2] a, b, c, d

[prc\_**synth**\_break\_3] a, b, c, d

[prc\_**synth**\_break\_4] a, b, c, d

[prc\_**piano**\_break] \_a, \_b, \_c, \_d

[prc**\_piano\_**break\_1] a, b, c, d

> [prc**\_piano**\_break\_2] a, b, c, d

[prc**\_piano\_**break\_3] a, b, c, d

[prc\_**piano**\_break\_4] a, b, c, d

[prc\_**keyboard**\_break] \_a, \_b, \_c, \_d

[prc\_**keyboard**\_break\_1] a, b, c, d

[prc\_**keyboard**\_break\_2] a, b, c, d

[prc\_**keyboard**\_break\_3] a, b, c, d

[prc\_**keyboard**\_break\_4] a, b, c, d

\_break\_4]

[prc**\_jam\_**1] a, b, c, d

[prc**\_horn**\_break] [prc**\_sctrach\_**break] [prc**\_perc\_**break] [prc**\_dj\_**break]

[prc\_interlude] \_a, \_b, \_c, \_d

[prc**\_interlude\_**1] a, b, c, d

[prc\_interlude\_2] a, b, c, d

[prc**\_interlude\_**3] a, b, c, d

[prc**\_interlude\_**4] a, b, c, d

[prc\_**soundscape**] \_a, \_b, \_c, \_d

[prc**\_soundscape\_**1] a, b, c, d

[prc**\_soundscape\_**2] a, b, c, d

[prc**\_soundscape\_**3] a, b, c, d

[prc\_**soundscape\_**4] a, b, c, d

[prc**\_jam**] \_a, \_b, \_c, \_d

# JAM, VAMP, BUILD UP, SPEED UP, TENSION, RELEASE

# CRESCENDO, MELODY, RIFF

[prc <b>_jam_</b> 2]	[prc <b>_build_up_</b> 1]	[prc_ <b>release</b> ]	[prc <b>_melody_</b> 4]	[prc <b>_main_</b> riff_3]	[prc <b>_chorus_</b> riff_2]
a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d, e, f	a, b, c, d
[prc <b>_jam_</b> 3]	[prc_build_up_2]	[prc_ <b>release</b> _1]	[prc_ <b>lo</b> _melody]	[prc <b>_main</b> _riff_4]	[prc_ <b>chorus</b> _riff_3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d,	a, b, c, d
[prc <b>_jam_</b> 4]	[prc_build_up_3]	[prc_release_2]	[prc_ <b>lo</b> _melody_1]	[prc <b>_main</b> _riff_5]	[prc_ <b>chorus</b> _riff_4]
a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d,	a, b, c, d
[prc <b>_space</b> _jam]	[prc <b>_build_up_</b> 4]	[prc_ <b>release</b> _3]	[prc <b>_lo_</b> melody_2]	[prc <b>_main</b> _riff_6]	[prc <b>_gtr_</b> riff]
_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d,	_a, _b, _c, _d
[prc_ <b>space</b> _jam_1]	[prc_ <b>speedup</b> ]	[prc_ <b>release</b> _4]	[prc <b>_lo_</b> melody_3]	[prc <b>_main_</b> riff_7]	[prc <b>_gtr_</b> riff_1]
a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d,	a, b, c, d
[prc <b>_space</b> _jam_2]	[prc_ <b>speed_up_</b> 1]	[prc_ <b>crescendo</b> ]	[prc <b>_lo_</b> melody_4]	[prc <b>_main_</b> riff_8]	[prc <b>_gtr_</b> riff_2]
a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d,	a, b, c, d
[prc <b>_space</b> _jam_3]	[prc <b>_speed_up_</b> 2]	[prc_ <b>crescendo_</b> 1]	[prc <b>_hi</b> _melody]	[prc <b>_main_</b> riff_9]	[prc <b>_gtr_</b> riff_3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d,	a, b, c, d
[prc <b>_space</b> _jam_4]	[prc <b>_speed_up_</b> 3]	[prc_ <b>crescendo_</b> 2]	[prc_ <b>hi</b> _melody_1]	[prc_verse_riff]	[prc <b>_gtr_</b> riff_4]
a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d
[prc <b>_vamp</b> ]	[prc <b>_speed_up_</b> 4]	[prc_ <b>crescendo_</b> 3]	[prc_ <b>hi</b> _melody_2]	[prc_verse_riff_1]	[prc <b>_bass_</b> riff]
_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d
[prc <b>_vamp_</b> 1]	[prc_ <b>tension</b> ]	[prc_ <b>crescendo_</b> 4]	[prc <b>_hi</b> _melody_3]	[prc <b>_verse_</b> riff_2]	[prc <b>_bass</b> _riff_1]
a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d
[prc_ <b>vamp_</b> 2]	[prc_ <b>tension_</b> 1]	[prc_ <b>melody</b> ]	[prc <b>_hi_</b> melody_4]	[prc_ <b>verse_</b> riff_3]	[prc <b>_bass</b> _riff_2]
a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d
[prc <b>_vamp_</b> 3]	[prc_tension_2]	[prc_ <b>melody_</b> 1]	[prc <b>_main_</b> riff]	[prc_verse_riff_4]	[prc <b>_bass</b> _riff_3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d, _e, _f	a, b, c, d	a, b, c, d
[prc <b>_vamp_</b> 4]	[prc <b>_tension_</b> 3]	[prc <b>_melody_</b> 2]	[prc <b>_main_</b> riff_1]	[prc_chorus_riff]	[prc <b>_bass_</b> riff_4]
a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d, e, f	_a, _b, _c, _d	a, b, c, d
[prc <b>_build_up</b> ]	[prc <b>_tension_</b> 4]	[prc <b>_melody_</b> 3]	[prc <b>_main_</b> riff_2]	[prc_ <b>chorus</b> _riff_1]	[prc <b>_big_</b> riff]
_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d, e, f	a, b, c, d	_a, _b, _c, _d

# RIFF, HOOK

# HOOK, DRUM ROLL, GTR, VOCAL

[prc <b>_big_</b> riff_1] a, b, c, d	[prc <b>_fast_</b> riff] _a, _b, _c, _d	[prc <b>_swing_</b> riff_4] a, b, c, d	[prc <b>_hook_</b> 3] a, b, c, d	[prc_gtr <b>_fill_</b> 2] a, b, c, d	[prc_gtr_ <b>line_</b> 1] a, b, c, d
[prc_big_riff_2]	[prc_ <b>tast</b> _ritt_1]	[prc_ <b>chunky</b> _riff]	[prc <b>_hook_</b> 4]	[prc_gtr_fill_3]	[prc_gtr_ <b>line_</b> 2]
a, b, c, u	a, b, c, u	_a, _b, _c, _u	a, b, c, u	a, b, c, u	a, b, c, u
[prc <b>_big_</b> riff_3]	[prc <b>_fast_</b> riff_2]	[prc <b>_chunky_</b> riff_1]	[prc_drum_roll]	[prc_gtr_ <b>fill_</b> 4]	[prc_gtr_ <b>line_</b> 3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d
[prc <b>_big_</b> riff_4]	[prc <b>_fast_</b> riff_3]	[prc_ <b>chunky_</b> riff_2]	[prc_drum_roll_1]	[prc_gtr_ <b>hook</b> ]	[prc_gtr_ <b>line</b> _4]
a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d
[prc <b>_bigger_</b> riff]	[prc <b>_fast_</b> riff_4]	[prc <b>_chunky_</b> riff_3]	[prc_drum_roll_2]	[prc_gtr_ <b>hook_</b> 1]	[prc_gtr_ <b>lick</b> ]
_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d
[prc <b>_bigger_</b> riff_1]	[prc_ <b>slow</b> _riff]	[prc_ <b>chunky_</b> riff_4]	[prc_drum_roll_3]	[prc_gtr_ <b>hook_</b> 2]	[prc_gtr_ <b>lick_</b> 1]
a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d
[prc <b>_bigger_</b> riff_2]	[prc_ <b>slow_</b> riff_1]	[prc_odd_riff]	[prc_drum_roll_4]	[prc_gtr_ <b>hook_</b> 3]	[prc_gtr_ <b>lick_</b> 2]
a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d
[prc <b>_bigger_</b> riff_3]	[prc_ <b>slow</b> _riff_2]	[prc <b>_odd</b> _riff_1]	[prc_gtr_ <b>lead</b> ]	[prc_gtr_ <b>hook_</b> 4]	[prc_gtr_ <b>lick</b> _3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d
[prc <b>_bigger_</b> riff_4]	[prc_ <b>slow</b> _riff_3]	[prc_odd_riff_2]	[prc_gtr_ <b>lead_</b> 1]	[prc_gtr_ <b>melody</b> ]	[prc_gtr_ <b>lick</b> _4]
a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d
[prc <b>_heavy_</b> riff]	[prc_ <b>slow_</b> riff_4]	[prc_odd_riff_3]	[prc_gtr_ <b>lead_</b> 2]	[prc_gtr_ <b>melody_</b> 1]	[prc_vocal <b>_break</b> ]
_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d
[prc <b>_heavy</b> _riff_1]	[prc_ <b>swing_</b> riff]	[prc_odd_riff_4]	[prc_gtr_ <b>lead_</b> 3]	[prc_gtr_ <b>melody_</b> 2]	[prc_vocal_ <b>break_</b> 1]
a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d	a, b, c, d
[prc <b>_heavy</b> _riff_2]	[prc_ <b>swing_</b> riff_1]	[prc <b>_hook</b> ]	[prc_gtr_ <b>lead_</b> 4]	[prc_gtr_ <b>melody_</b> 3]	[prc_vocal_ <b>break_</b> 2]
a, b, c, d	a, b, c, d	_a, _b, _c, _d	a, b, c, d	a, b, c, d	a, b, c, d
[prc <b>_heavy</b> _riff_3]	[prc_ <b>swing_</b> riff_2]	[prc <b>_hook_</b> 1]	[prc_gtr_ <b>fill</b> ]	[prc_gtr_ <b>melody_</b> 4]	[prc_vocal_ <b>break_</b> 3]
a, b, c, d	a, b, c, d	a, b, c, d	_a, _b, _c, _d [prc_gtr_ <b>fill_</b> 1]	a, b, c, d	a, b, c, d
[prc <b>_heavy_</b> riff_4]	[prc_ <b>swing</b> _riff_3]	[prc <b>_hook_</b> 2]	a, b, c, d	[prc_gtr_ <b>line</b> ]	[prc_vocal <b>_break_</b> 4]
a, b, c, d	a, b, c, d	a, b, c, d		_a, _b, _c, _d	a, b, c, d

EVENTS TRACK 654

# AH, YEAH, OOHS, PRAYER, CHANT, SPOKEN, OUTRO ...

[prc <b>_ah</b> ]	[prc <b>_chant_</b> 3]	[prc <b>_ending</b> ]
[prc <b>_yeah</b> ]	a, b, c, d	_a, _b, _c, _d
[prc_oohs]	[prc <b>_chant_</b> 4]	[prc <b>_bre</b> ]
_a, _b, _c, _d	a, b, c, d	
		[prc_fade_ <b>out</b> ]
[prc <b>_oohs_</b> 1] a, b, c, d	[prc_spoken <b>_word</b> ] a, b, c, d	_a, _b, _c, _d
	_ / _ / _ / _	[prc a]
[prc <b>_oohs_</b> 2] a, b, c, d	[prc_spoken_ <b>word</b> _1] a, b, c, d	1, 2, 3, 4, 5, 6, 7, 8, 9
		[prc <b>b</b> ]
[prc <b>_oohs_</b> 3]	[prc_spoken_ <b>word</b> _2]	1, 2, 3, 4, 5, 6, 7, 8, 9
a, b, c, d	a, b, c, d	
		[prc_ <b>c</b> ]
[prc <b>_oohs_</b> 4] a, b, c, d	[prc_spoken_ <b>word</b> _3] a, b, c, d	1, 2, 3, 4, 5, 6, 7, 8, 9
		[prc_ <b>d</b> ]
[prc <b>_prayer</b> ] _a, _b, _c, _d	[prc_spoken <b>_word_</b> 4] a, b, c, d	1, 2, 3, 4, 5, 6, 7, 8, 9
		[prc <b>_e</b> ]
[prc <b>_prayer_</b> 1]	[prc <b>_outro</b> ]	1, 2, 3, 4, 5, 6, 7, 8, 9
a, b, c, d	_a, _b, _c, _d	
		[prc <b>_f</b> ]
[prc <b>_prayer_</b> 2]	[prc <b>_outro_</b> 1]	1, 2, 3, 4, 5, 6, 7, 8, 9
a, b, c, d	a, b, c, d	
		[prc <b>_g</b> ]
[prc <b>_prayer_</b> 3] a, b, c, d	[prc <b>_outro_</b> 2] a, b, c, d	1, 2, 3, 4, 5, 6, 7, 8, 9
		[prc <b>_h</b> ]
[prc <b>_prayer_</b> 4] a, b, c, d	[prc <b>_outro_</b> 3] a, b, c, d	1, 2, 3, 4, 5, 6, 7, 8, 9
		[prc i]
[prc <b>_chant</b> ]	[prc_outro_4]	1, 2, 3, 4, 5, 6, 7, 8, 9
_a, _b, _c, _d	a, b, c, d	
		[prc <b>_j</b> ]
[prc <b>_chant_</b> 1]	[prc_outro_ <b>solo</b> ]	1, 2, 3, 4, 5, 6, 7, 8, 9
a, b, c, d	_a, _b, _c, _d	
		[prc <b>_k</b> ]
[prc <b>_chant_</b> 2]	[prc_outro_ <b>chorus</b> ]	1, 2, 3, 4, 5, 6, 7, 8, 9
a, b, c, d	_a, _b, _c, _d	

# SUMMARY EVENTS TRACK

- Place the [end] event at the end of the song (after the audio stops playing).
- Make sure that there are no notes or text events after the [end] event.
- Place the [music\_start] event where the crowd would recognize the song and get excited.
- Place the [music\_end] event where the crowd would start to cheer at the end of a song.
- Add crowd animations to the EVENTS track. Your crowd should be excited about the song they are listening to.
- Place the [crowd\_noclap] event just before the last note of the song.
- Only add special timekeeping notes for Practice Mode if your song uses stems.
- Add practice sections to your song. This improves venue generation in Magma, and helps players practice your song.



- Generated venues
- Camera and lights

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Reference images

# THE VENUE TRACK

Authoring a venue is optional. It lets you control the camera cuts and lighting for your song. If you do not want to author a venue Magma will generate one for you.

There are a couple of different approaches that you can take to venue authoring. You can update a theme, or create a new one. Or you can update a generated venue, or create a new venue from scratch.

This chapter covers the following topics:

- How to customize Magma themes to create your own custom theme
- Explore the camera cuts, lighting, and post processing effects that you can use
- Install venuegen to create custom venues from scratch
- Discover how to import Magma generated venues and use them as a template for a custom venue
- See which camera cuts take priority over others
- Learn from community authored examples



Magma will not generate any lighting if the [lighting ()] text event is in your VENUE track.

#### VENUE TRACK **OVERVIEW**



The VENUE track has two text events at the start of the track:

- [lighting ()] The old default lighting event (see page 705).
- VENUE The track name text event.

MAGMA will create a venue if you don't add any other text events to the VENUE track.

- Remove the [lighting ()] text event so that Magma can generate your venue
- Far

### INTRO TO CAMERA, LIGHTS, POST PROCESSING, AND PYROTECHNICS

near

Close-up

Close-up head

Directed cuts contain a range

Lighting events allow you

to control on-stage lights.

Post processing effects are

used to compliment camera

cuts. Pyrotechnics trigger an

explosion and sound effect.

of special character animations.

The VENUE track controls the camera and

To author a venue add text events to the VENUE track. Venue events include:

lighting for Rock Band.

- Camera cuts
- Directed cuts
- Lighting
- Post processing effects
- Pyrotechnics

Camera cuts are pre-defined. You can choose from many different cuts, for example:

- Band shots
- Individual musicians
- Pairs of musicians

Camera cuts can have several different positions, such as:

- Behind

# For autogen Magma

venues make sure that the only text event in the VENUE track is the track name.

# VENUE AUTOGENERATION

# Magma provides a variety of venue themes to choose from when you compile your song.

If you have not authored a venue you can pick one from Magma's theme list:

- Open Magma
- Click on the **Game Data** tab
- Click the Auto generation
   Theme drop down menu

The included themes are:

- Default
- Aggressive Metal
- Arena Rock
- Dark Heavy Rock
- Dusty Vintage
- Edgy Prog Rock
- Feel Good Pop Rock
- Garage Punk Rock
- Psych Jam Rock
- Slow Jam
- Synth Pop

Each theme contains different lighting, camera shots, and camera effects. You can change how your song looks and feels with a single click.

Themes can also be edited and shared. You can create your own themes and add as much or as little to it as you would like.

Creating your own themes is a great way to get into authoring a venue of your own!

🔞 I

File

Magma: C3 Roks Edition v3		
e Options Help		
	DIO GAME DATA	<b>_</b> *
MIDI		
AUTOGENERATION THEME	Arena Rock 🔹	
	Default	L L
	Aggressive Metal	Г
	Dark Heavy Rock	
ANIMATION SPEED	Dusty Vintage	
	Edgy Prog Rock	
HOPO THRESHOLD	Feel Good Pop Rock	
	Garage Punk Rock	
VOCAL GENDER	Slow Jam	
COCKE GENDEN	Synth Pop	
VOCAL PERCUSSION	Tambourine •	

To use autogen and

custom themes you

must author practice

sections for your song.

See pages 642 - 655.

You can find Magma themes in the themes folder of your Magma installation. For example:

C:\Magma\themes

Themes all have the following file extension:

- .rbtheme
- To open a theme with Notepad:
- **Right-click** on a theme
- Click Open with in the context menu
- Select Notepad from the list of applications
- Click the Always button to always open themes with Notepad

You can open autogenerated themes with a text editor such as Notepad.

HOW TO OPEN THEMES

*ArenaRo	ck.rbtheme - Note	pad	— U	~
File Edit	View			Ę
;the default ;can be one ; 'minimal (camera_paci	camera pacing of the followin ', 'slow', 'med ng medium)	g: ium', 'fast',	or 'crazy'	
(section_pre	sets			
(default (allow (allow (light )	ed_lightpresets ed_postprocs Pr preset_blendin	loop_warm loo oFilm_a.pp) 2)	p_cool)	
(intro (allow (allow (light )	ed_lightpresets ed_postprocs P preset_blendin	silhouettes_s roFilm_a.pp) 4)	spot loop_war	m)
(preverse (allow (allow (light (keyfr )	ed_lightpresets ed_postprocs Pr preset_blendin ame_rate 4)	manual_warm) oFilm_a.pp) 2)		
(voncol	10.0%	lindows (CDLE)		

Themes are divided into three sections. Only a few elements make up each theme.

To the	the right you can see part of e SynthPop Magma theme.	(camera_pacing medium)
		(extra_sections
lt I	has been edited and color	(spacey
со	ded so that it is easy to	<pre>(practice_sections "*spacey*")</pre>
un	derstand:	)
_	Thomas can have up to	)
	Inemes can have up to	
	three sections:	(section_presets
		(default
	1. Camera pacing	(allowed_lightpresets harmony sweep)
	2. Extra sections	<pre>(allowed_postprocs ProFilm_a.pp)</pre>
	3. Section presets	(lightpreset_blendin 2)
		(postproc_blendin 2)
	Inemes have a <b>nested</b>	)
	bracket structure	(intro
_	Continue of the second	<pre>(allowed_lightpresets silhouettes_spot)</pre>
	Section names are in green	<pre>(allowed_postprocs ProFilm_a.pp)</pre>
	Baramaters are blue	<pre>(lightpreset_blendin 2)</pre>
	Falameters are blue	<pre>(postproc_blendin 2)</pre>
	Parameter options are pink	)
_	Total atomic de la companya	(
	lext strings are orange	(spacey
No	te: We pair peremeters and	(allowed_lightpresets dischord)
NO	te. we pair parameters and	(allowed_postprocs clean_trails.pp)
pa		(lightpreset_blendin 2)
to	select venue effects. Some	(keyframe_rate 2)
Ра ор	rameters have more than one tion to choose from.	(postproc_blendin 2)
		)

### CAMERA PRESET

The first section of a theme is **camera pacing**. This controls the pace of camera cuts. There are five options to choose from:

Minimal

1

2

3

.

- Slow
- Medium
- Fast
- Crazy

The syntax for medium camera

pacing is:

(camera\_pacing medium)

All preset Magma themes use medium camera pacing except for the SlowJam theme.

Camera pacing is a **required element** found at the start of each theme.

### EXTRA SECTIONS

2 Extra sections are optional. Use them to add uncommon practice sections to your theme (see page 665). Extra sections have two main elements:

- A section name, and
- Named practice section(s)

Both of these elements are user defined. For example, spacey and \*spacey\* on the previous page. Here the section name spacey is mapped to the practice section(s) "\*spacey\*".

Note: The asterisk \* is a wild card character. Any **practice section** with **spacey** in its name will be linked to the **spacey section name**.

**Tip:** Add asterisks to expand the range of practice sections. Remove asterisks to exclude practice sections.

### SECTION PRESETS

3 Section presets use section names to group practice sections and venue events together. For example:

#### (intro

(allowed\_lightpresets silhouettes\_spot) (allowed\_postprocs ProFilm\_a.pp) (lightpreset\_blendin 2) (postproc\_blendin 2)

The intro section name has lighting and post processing events defined. These venue events are used for any practice sections in the EVENTS track that have intro in their name.

## COMMENT LINES

Add a semicolon at the start of a line to turn it into a comment. Comments must be single lines of text. Comment lines are ignored by Magma:

; This is a comment

# BUILT-IN PRESETS

Magma themes have built-in presets for

# **BUILT-IN SECTION PRESETS**

common practice sections.

Magma themes have a **builtin extra section** that links to common practice sections:

- Default
- Intro
- Preverse
- Verse1
- Verse2
- Verse3
- Bridge
- Solo
- Prechorus
- Chorus1
- Chorus2
- Chorus3
- Postchorus
- Main\_riff
- Outro

#### Built-in presets typically have a standard mapping to practice sections. For example:

(intro
(practice\_sections
"\*intro\*")
}

The intro preset maps to all practice sections with **intro** in their name, from:

■ [prc\_intro] \_a, \_b, \_c, \_d, \_e

to

■ [prc\_intro\_riff] \_a, \_b, \_c, \_d

This logic applies to all the built-in presets. It should be noted that presets can have more than one option. This is the case with the **verse3** and **chorus3** presets. They both have many **text string options.** 

### For example:

(chorus3

(practice\_sections "\*chorus\_3\*" "\*chorus\_4\*" "\*chorus\_5\*" "\*chorus\_6\*" "\*chorus\_7\*" "\*chorus\_8\*" "\*chorus\_9\*")

The \*chorus3\* preset is mapped to seven practice sections from:

[prc\_chorus\_3]
 a, b, c, d

to

■ [prc\_**chorus\_**9] a, b, c, d

Note: The chorus3 preset does not include the **prechorus** and **postchorus** practice sections. This is because they both have their own built-in presets.

The **default** preset is for any practice sections not found in any other presets.

### THEME NAME

To start your own custom theme first create a copy of the **SynthPop** theme:

- Open the SynthPop theme using Notepad
- In Notepad:
- Click File > Save as
- In the Save as window, type a unique filename for your custom theme
- Make sure that the filename has the .rbtheme file extension
- Click the Save button

When you next open Magma your theme will appear in the auto generation theme drop down menu.

# WHAT TO CUSTOMIZE?

Make sure the practice sections in your song match the section presets in your theme. You may need to:

own custom theme.

- Remove existing section presets that do not match your practice sections
- Customize the extra\_ sections if needed:

(extra\_sections
 (spacey
 (practice\_sections

"\*spacey\*") ...

 Add custom section\_presets if needed:

(spacey
(allowed\_lightpresets
silhouettes\_spot) ...

 Remove the extra-section if it is not used The next step is to review venue parameters and options. Look through different themes to see which venue elements they use. For example:

#### DarkHeavyRock

(allowed\_lightpresets silhouettes\_spot) (allowed\_postprocs photo\_ negative.pp)

#### FeelGoodPopRock

(allowed\_lightpresets harmony silhouettes\_spot) (allowed\_postprocs ProFilm\_a. pp)

#### PsychJamRock

(allowed\_lightpresets loop\_warm) (allowed\_postprocs posterize.pp)

Experiment with lighting and post-proc effects to give your theme its own look and feel.

# MAKING A CUSTOM THEME

Use the SynthPop theme as a template for your

THEME BLUEPRINT	
Build a custom theme using these <b>parameters</b> in any section preset.	

ALLOWED LIGHT PRESET allowed_lightpresets sets the light preset to be used:	Parameter Option(s) (allowed_lightpresets searchlight	ts manual_warm sweep)
ALLOWED POST PROCS allowed_postprocs sets the post processing to be used:	(allowed_postprocs video_trails.	pp posterize.pp)
KEYFRAME RATE keyframe_rate is used for manual light presets. It sets a "next" keyframe every N beats. See Manual Lighting Calls on page 677.	(keyframe_rate 2)	<b>Note</b> : A keyframe_rate of 2 will flash lights on beats one and three. A keyframe_rate of 1 will flash lights on each beat. Themes use 2 on verses and 1 on choruses.
LIGHT PRESET BLEND IN lightpreset_blendin is used to create a smooth transition between different lighting presets. The transition begins N beats before the start of the current section:	(lightpreset_blendin 1)	

Review pages 669 — 699 to decide which options (post processing, lighting presets, and directed cuts) to use.

DIRECTED CUT AT START	Parameter Option(s)	
dircut_at_start sets a directed cut to be used at the start of the section:	<pre>(dircut_at_start directed_all)</pre>	
BONUS FX AT START bonusfx_at_start will cause a bonusfx cue to be placed at the start of the section:	(bonusfx_at_start)	
CAMERA PACING camera_pacing overrides the default camera pacing for this section only. Use one of the following:	(camera_pacing slow)	
<ul> <li>minimal</li> <li>slow</li> <li>medium</li> <li>fast</li> <li>crazy</li> </ul>		<b>Note:</b> If more than one option is set a random one will be chosen from the options specified.

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# **BASIC POST-PROCESSING** EFFECTS

Post-processing effects are video effects added to an existing camera shot.



The default post process effect. No notable effects.







LIGHTING	TEXT EVENT	LIGHT	ING	TEXT EVENT
Default	[ProFilm_a.pp]	Shitty_	_TV	[shitty_tv.pp]
Color_Muted	[ProFilm_b.pp]	Bloom		[bloom.pp]
Video_Grainy	[video_a.pp]	Sepia_	Ink	[film_sepia_ink.pp]
16mm Film	[film_16mm.pp]	Silvert	one	[film_silvertone.pp]







Reduces colors to a wide range of yellowish-grey shades.



Reduces colors to a wide range of grey shades.

# BASIC POST-PROCESSING EFFECTS (CONTINUED)

LIGHTING	TEXT EVENT	LIGHTING	TEXT EVENT
Film_BW	[film_b+w.pp]	Blue_Filter	[film_blue_filter.
Video_BW	[video_bw.pp]	Desat_Blue	[desat_blue.pp]
Contrast_BW	[contrast_a.pp]	Video_Security	[film_sepia_ink.p
Photocopy	[photocopy.pp]		



Reduces colors to a range of grey tones. **Note**: The range of grey tones is smaller than Silvertone.



Reduces colors to grey shades. Slightly grity. A smaller range of grey than Silvertone.

PHOTOCOPY



A choppy, low-frame-per-second effect.

BLUE\_FILTER

Reduces colors to a wide range of blue shades.



Slightly gainy image, with a blue tinge.



Grainy video. Colors are reduced to a wide range of green shades.

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# SPECIAL POST-PROCESSING EFFECTS

These are special video effects that are added to an existing camera shot.



Brightens to bloom-esque effect. Lightens dark colors.



Flattens colors (most noticable in shadows).



Creates a small video feed delay, like a visual "echo".



Creates a video feed delay. A longer delay than Clean\_Trails.

LIGHTING	TEXT EVENT	LIGHTING	TEXT EVENT
Bright	[bright.pp]	Flicker_Trails	[flicker_trails.pp]
Posterize	[posterize.pp]	Desat_Posterize	[desat_posterize_trails.pp]
Clean_Trails	[clean_trails.pp]	Film_Contrast	[film_contrast.pp]
Video_Trails	[video_trails.pp]	Film_Contrast_Blue	[film_contrast_blue.pp]







Makes dark colors darker, and light colors lighter.



Makes dark colors darker, and light colors lighter. Adds a slight blue hue.

# SPECIAL POST-PROCESSING EFFECTS (CONTINUED)

LIGHTING	TEXT EVENT	LIGHTING
Film_Contrast_Gr	[film_contrast_green.pp]	Mirror
Film_Contrast_Red	[film_contrast_red.pp]	Psych_Blue_Red
Horror_Movie	[horror_movie_special.pp]	Space_Woosh
Photo_Negative	[photo_negative.pp]	

LIGHTING	TEXT EVENT	
Mirror	[ProFilm_mirror_a.pp]	
Psych_Blue_Red	[ProFilm_psychedelic_ blue_red.pp]	
Space_Woosh	[space_woosh.pp]	



Makes dark colors darker, and light colors lighter. Adds slightly green hues.



Makes dark colors darker, and light colors lighter. Adds slightly red hues.



Polarizes colors to either red or black.



Inverts colors.



The left side of the screen mirrors the right side. Changes colors to a variety of oranges, greens, and yellows.





Lightens colors dramatically. Creates three small video feed delays in red, green, and blue.

# MANUAL LIGHTING CALLS

Manual lighting presets use keyframe rates or triggers to cycle through their colors.



Tends towards soft yet full blends, such as orange and green. Varies between venues.



Tends towards stark, dramatic colors, such as saturated blue and red. Invokes a peak state. Varies between venues.



IGHTING	TEXT EVENT
Dischord	[lighting (dischord)]
Stomp	[lighting (stomp)]



Harsh lighting with a blend of dissonant colors.



All lights are either on or off. This lighting preset cannot be used in Magma themes. It only responds to the [next] trigger.



Cool temperature lighting.



Warm temperature lighting.

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# AUTOMATIC LIGHTING CALLS

These presets are set lighting cues. Many of them cycle automatically over time.



LOOP\_WARM

A blend of warm temperature colors.



A blend of lights with a harmonious color palette.



Frenetic, dissonant lighting that alternate quickly.

LIGHTING	TEXT EVENT	LIGHTING	TEXT EVENT
Loop_Cool	[lighting (loop_cool)]	Silhouettes	[lighting (silhouettes)]
Loop_Warm	[lighting (loop_warm)]	Silhouettes_Spot	[lighting (silhouettes_spot)]
Harmony	[lighting (harmony)]	Searchlights	[lighting (searchlights)]
Frenzy	[lighting (frenzy)]	Sweep	[lighting (sweep)]





Dark, atmospheric lighting. Shows illuminated character silhouettes.



Searchlights that sweep individually. In this scene the left and right banks of lights alternate on and off.



# AUTOMATIC LIGHTING CALLS (CONTINUED)

LIGHTING	TEXT EVENT	LIGHTING	TEXT EVENT
Strobe_Slow	[lighting (strobe_slow)]	Blackout_Spot	[lighting (blackout_spot)]
Strobe_Fast	[lighting (strobe_fast)]	Flare_Slow	[lighting (flare_slow)]
Blackout_Slow	[lighting (blackout_slow)]	Flare_Fast	[lighting (flare_fast)]
Blackout_Fast	[lighting (blackout_fast)]	BRE	[lighting (bre)]



Strobe lights that blink on every eighth note.



Strobe lights that blink on every sixteenth note.



Darken the stage slowly to blackout. The fade takes 2 seconds. Does not work if previous light state is too close.



Darken the stage quickly to blackout. The fade takes 0.2 seconds.



A blackout state with added underlighting.



Bright white flare that fades slowly into the next lighting preset.



Bright white flare that fades quickly into the next lighting preset.



Frenetic lighting for a Big Rock Ending. Looks like frenzy, only crazier.

# INTRODUCTION TO DIRECTED CUTS

Directed cuts are special camera shots that often have a unique animation.

### DIRECTED CUTS OVERVIEW

Directed cuts contain many unique animations. For example:

- Drummer twirling drum sticks
- Band mates jumping into the air
- Guitarist kicking towards the camera

Other directed cuts do not contain unique animations. Instead, they contain unique camera angles. For these shots we use this icon:

#### PRE-ROLL AND POST-ROLL

Directed cuts can have pre-roll and post-roll animation:

- Pre-roll is animation that starts before the 'hit'.
- Post-roll is animation that continues after the 'hit'

Some cuts do not have any pre-roll. They start immediately where the text event is called. Others may have only a few seconds of pre-roll.

### THEME VS VENUE

Directed cuts in themes use this syntax in section presets:

#### (dircut\_at\_start directed\_ all)

Venuegen uses **MIDI notes**, for example **D\_All**. The VENUE track uses **text events**:

[directed\_all]

### THE DIRECTED CUT HIT

In venuegen, place a MIDI note where you want the 'hit' of the animation to be.

The 'hit' in each animation will vary. If the shot is the bassist jumping, the beat that they land on is the hit. If the guitar player is kicking the camera, the hit is the impact of the kick.

Not all directed cuts have a distinct hit though.

Note 1: A directed cut can have several animations. For example, a cut may have band mates jump in the air or kick at the camera. This means that the length of the animation can vary, even for the same cut. The amount of pre-roll and postroll can also vary for different animations in the same cut. Keep this in mind when you place a cut in your VENUE track.

**Note 2**: In Magma themes the 'hit' is at the start of the practice section.

### DIRECTED CUT SUFFIXES

_cls	Close-up shot	_b	Bass player
_lt	Long duration cut (long time)	_g	Guitar player
_np	Character is not playing	_kb	Keyboard / bass
_pnt	Character points at camera	_kd	Keyboard / drummer
_pr	Longer pre-roll shot <sup>1</sup>	_kg	Keyboard / guitar
_pt	Longer post-roll shot <sup>2</sup>	_kv	Keyboard / vocalist
_kd	Drummer's kick drum		

Directed cuts often have suffixes. The table above lists the most common suffixes with a brief explanation. Easily understood suffixes such as "guitar" and "drums" are not included in the table above. <sup>1</sup> Vocal and guitar shots with the \_pr suffix have longer preroll. There is likely to be more animation before the text event. <sup>2</sup> Vocal and guitar shots with the \_pt suffix have longer postroll. They have more animations after the text event.

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# EXAMPLE DIRECTED CUTS

Many directed cuts have unique animations.









CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_All	[directed_all]	D_Drums	[directed_drums]
D_All_cam	[directed_all_cam]	D_Drums_LT*	[directed_drums_lt]
D_All_Yeah	[directed_all_yeah]		









# EXAMPLE DIRECTED CUTS (CONTINUED)

CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_Vocals	[directed_vocals]	D_Guitar	[directed_guitar]
		D_Gtr_Cam_PT	[directed_guitar_cam_pt]
		D_Gtr_Cam_PR	[directed_guitar_cam_pt]

Some directed cuts have many animations. For example, directed vocals.

















# EXAMPLE DIRECTED CUTS (CONTINUED)

Use close-up directed cuts for technical parts and solos.









CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_Bass_CLS*	[directed_bass_cls]	D_Crowd_Bass	[directed_crowd_b]
D_Gtr_CLS*	[directed_guitar_cls]	D_Duo_Gtr	[directed_duo_guitar]
D_Drums_Point	[directed_drums_pnt]	D_Crowd*	[directed_crowd]









# DIRECTED CUTS: FULL BAND AND CROWD SHOT

Full band cuts are very dramatic. They are for special moments in the song.

CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_All	[directed_all]	D_BRE	[directed_bre]
D_All_Cam	[directed_all_cam]	D_BRE_Jump	[directed_brej]
D_All_LT*	[directed_all_lt]	D_Crowd*	[directed_crowd]
D_All_Yeah	[lighting (frenzy)]		

D\_BRE\_Jump

Endings:

This is another cut for Big Rock

■ The characters jump, stomp,

or bang the drums on the

final note of the BRE

Sometimes the band drops to

the floor dramatically before the

### FULL BAND

# D\_All

#### D\_All\_Cam

Shots where guitar, bass, keys and vocals interact. This includes band mates:

- Jumping into the air
- Kicking towards the camera or crowd
- Dramatically dropping to their knees

These shots work well for:

 Exciting parts of the song, especially ones with singalongs

**Note**: D\_All\_Cam typically lasts longer. The band interacts with the camera and rocks out together.

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# D\_All\_LT\*

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A long panning shot of the entire band. It is more dynamic than standard camera shots like All\_Near or All\_Far.

### D\_All\_Yeah

A very dramatic cut:

- Singer points into the air in slow motion
- Pans to show rest of the band in slow motion

On bigger venues the guitarist leaps into the air and then slides on their knees (like Pete Townshend from The Who).

**Note:** This does not happen if the keys player is on the stage.

D\_All\_Yeah is tricky to time correctly. It works well with BONUSFX for glam metal songs and other big bands.

Harmonix has used it in:

- "Won't Get Fooled Again" (RB1)
- "Thunderstruck (Live)"
- "Bohemian Rhapsody".

**Note**: Use full band cuts sparingly. Over-use can make the cuts look forced and cause them to feel less special.

### D\_BRE

This cut is for Big Rock Endings:

- The guitarist swings their guitar into the floor, jumps on the guitar, and then back slams the guitar
- The drummer wildly hits the kit with their sticks

The hit in this cut is the guitar player falling backwards onto the guitar. Most of the animation is pre-roll.

You should place this text event on the final note of the BRE.

This cut is in:

- "Run To The Hills" (RB1)
- "Let There Be Rock" (RB2)
- "Young Man Blues (Live at Leeds)" and "Do You Feel Like We Do (Live)" (DLC)

# CROWD SHOT

#### D\_Crowd\*

A dynamic shot that includes the crowd:

<

- A wide stage shot that includes the crowd
- On bigger venues, an individual shot with a few crowd members

final hit. As with the previous cut, you should place this on the final notes of a BRE. It is generally

You can find this cut in some songs without BREs, such as "Aqualung" and "Visions" in RB2.

used in most BREs.

# DIRECTED CUTS: SINGLE CHARACTER

These directed cuts feature individual characters.

### INDIVIDUAL CHARACTER HITS

In the following shots a character performs an action. The action happens where the text event is placed in the VENUE track.

#### D\_Bass

The bass player animation here is like the guitar player in D\_Gtr. Most of the same animations are used:

- Bass player does not slide on their knees
- Bass player animations are less theatrical

#### D\_Drums

The drummer hits the cymbals on their kit. Sometimes they twirl their sticks first.



A dynamic, **panning shot** of the drummer. Use for drum solos or interesting drum parts.

# D\_Gtr

The guitarist performs a wide variety of actions:

- Slide on their knees
- Kick over the camera
  - Bump camera with guitar

There are more actions but these are the most common.



The keyboard player jumps in the air or slams their hands on the keyboard.

D\_Vocals

The vocalist has a wide variety of animations:

- Point into the air
- Point to the crowd
- Kick into the air
- Kick the camera

There are also actions that are specific to certain genres.

CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_Bass	[directed_bass]	D_Bass_NP	[directed_bass_np]
D_Drums	[directed_drums]	D_Drums_NP	[directed_drums_np]
D_Drums_LT*	[directed_drums_lt]	D_Gtr_NP	[directed_guitar_np]
D_Gtr	[directed_guitar]	D_Keys_NP	[directed_keys_np]
D_Keys	[directed_keys]	D_Vox_NP	[directed_vocals_np]
D_Vocals	[directed_vocals]		

### INDIVIDUAL CHARACTER NOT PLAYING

In these shots the characters perform an animation while not playing. Use when the character is in an [idle] state.

#### D\_Bass\_NP

The bass player animations are similar to the guitarist in D\_Gtr\_NP].

#### D\_Drums\_NP

The drummer has a range of idle animations:

- Swirl drumsticks
- Stick tricks
- Motion to camera

There are other animations that involve camera interaction that are genre specific.

#### D\_Gtr\_NP

The guitarist performs a wide variety of idle actions:

- Kick
- Kick into the air (but not at the camera)

There are a lot of genre specific animations:

 Take hand off guitar with actions or mannerisms that fit the genre

#### D\_Keys\_NP

There are very few animations for this directed cut:

 Keyboardist rocks back and forth

Most venues only have a single animation.

#### D\_Vox\_NP

The vocalist has a couple of idle actions:

- Kick into the air
- Jump

The vocalist holds the mic, but not up to their face.

There are other actions that do not involve singing into the mic.

693 VENUE AUTHORING

■ Kick into the air

# DIRECTED CUTS: SINGLE CHARACTER (CONTINUED)

CAMERA	TEXT EVENT		CAMERA	TEX
D_Bass_Cam	[directed_bass_cam]		D_Crowdsurf	[dire
D_Gtr_Cam_PR	[directed_guitar_cam_pr]		D_Stagedive	[dire
D_Gtr_Cam_PT	[directed_guitar_cam_pt]			
D_Keys_Cam [directed_keys_cam]				
D_Vox_Cam_PR	m_PR [directed_guitar_cam_pr]			
D_Vox_Cam_PT	[directed_vocals_cam_pt]			

CAMERA	TEXT EVENT
D_Crowdsurf	[directed_crowdsurf]
D_Stagedive	[directed_stagedive]

### INDIVIDUAL CHARACTER CAM SHOTS

Cam shots involve a character performing an action. The character may show off or interact with the crowd.

Cam shots are not usually tied to a hit. You can use them at any point in the song.

#### D\_Bass\_Cam

The bassist shows off for the camera. This is usually more relaxed than the guitar player. Animations include:

Hit camera with instrument

Bass has fewer animations and does not have \_pr or \_pt shots.

Bass has a lot of genre specific animations.

#### D\_Gtr\_Cam\_PR

There are a large range of guitar animations:

- Drop to the floor
- Show off to camera
- Show off for crowd

These shots are generally used for exciting guitar parts:

- Guitar solos
- Technical guitar parts

There are several grenre specific animations.

#### D\_Gtr\_Cam\_PT

Like D Gtr Cam PR but with:

- Longer post-roll
- Shorter pre-roll

#### D\_Keys\_Cam

The keyboardist rocks out and grooves.

#### D\_Vox\_Cam\_PR

Like D\_Vox\_cam\_PT but with longer pre-roll, and shorter post-roll:

 More animations that land on the hit

#### D\_Vox\_Cam\_PT

A large range of animations used for exciting vocal moments:

- Interact with crowd or camera
- Rock the mic

Many genre-specific animations.

# **VOCALIST STAGEDIVE / CROWDSURF**

The vocalist dives off the stage and leaps into the crowd or crowd-surfs, or both.

Note: Use this cut with caution. The next shot should cut away from the vocalist. Otherwise it will appear that the vocalist has teleported back onto the stage. Take care, as the vocalist can still appear in the background of the next shot.

After this cut, try to follow this recommendation. Leave sixteen, or more, measures before the vocalist:

- Sings
- Plays the tambourine or cowbell

Note: There is no lip-sync during a stage dive cut. The vocalists mouth will not move.

#### D\_Crowdsurf

Like D\_Stagedive but includes the vocalist crowd-surfing.

Sometimes it shows the vocalist crowd-surfing without jumping off the stage.

#### D\_Stagedive

The vocalist runs off the stage and jumps into the crowd.

This shot usually cuts away as soon as the vocalist jumps into the crowd.

# DIRECTED CUTS: SINGLE CHARACTER (CONTINUED) / TWO CHARACTER SHOTS AND CROWD SHOTS

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	3	C	Л	3		5

Use close-up shots for special moments. For example:

- Interesting vocal parts
- Fast or technical guitar, bass, or heavy drum parts

D\_Bass\_CLS\*

Close-up of the bassist's fretboard.

### D\_Drums\_KD\*

Close-up of the drummer's kick pedal.

<

<

### D\_Gtr\_CLS\*

VENUE AUTHORING

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Close-up of the guitarist's fretboard.

# D\_Vox\_CLS

A dramatic animation that includes:

- Close-up of vocalist holding the mic
- Holding the mic with both hands, moving head back and forth
- Falling to the floor or to their knees holding the mic

#### Generally used for the vocalist hitting high notes, or even screamed or yelled parts.

The cut also has genre-specific animations.

### POINTING

#### D\_Drums\_Point

Drummer points to the camera with their sticks.

**Note**: In some animations the drummer is not playing, so use this with care.

#### CROWD INTERACTIONS

#### D\_Crowd\_Bass

The same as D\_Crowd\_Gtr, but for the bassist.

#### D\_Crowd\_Gtr

Guitarist interacts with the crowd. This includes high fives and showing off.

CAMERA	TEXT EVENT	CAMERA	TEXT EVENT
D_Bass_CLS*	[directed_bass_cls]	D_Duo_Bass	[directed_duo_bass]
D_Drums_KD*	[directed_drums_kd]	D_Duo_Drums	[directed_duo_drums]
D_Gtr_CLS*	[directed_guitar_cls]	D_Duo_Gtr	[directed_duo_guitar]
D_Vox_CLS	[directed_vocals_cls]	D_Duo_GB	[directed_duo_gb]
D_Drums_Point	[directed_drums_pnt]	D_Duo_KB	[directed_duo_kb]
D_Crowd_Bass	[directed_crowd_b]	D_Duo_KG	[directed_duo_kg]
D_Crowd_Gtr	[directed_crowd_g]	D_Duo_KV	[directed_duo_kv]

### TWO CHARACTER SHOTS

Sing-along shots that include two band mates interacting.

Use these shots with the singalong MIDI notes found in the VENUE track:

# VENUE Guitarist Sing Along

Drummer Sing Along Bassist Sing Along

In these shots the guitarist and bassist will interact with the vocalist. The drummer has their own set of solo shots.

For more on sing-along notes see page 711.

#### D\_Duo\_Bass

The same as D\_Duo\_Gtr, but for the bassist.

#### D\_Duo\_Drums

Drummer turns to the camera or interacts with it.

- Use only when the drummer is singing. It looks awkward if the drummer is not singing
- Does not include other band members

#### D\_Duo\_Gtr

The guitarist and vocalist interact. This includes:

- Guitarist and vocalist jamming together
- Guitarist and vocalist leaning into each other
- Guitarist singing into the vocalist's mic

There are also genre-specific animations.

#### D\_Duo\_GB

Guitarist and bassist jam out together. Works well for engaging moments.

#### D\_Duo\_KB

Bassist and keyboardist rock out together.

#### D\_Duo\_KG

Guitarist and keyboardist rock out together.

#### D\_Duo\_KV

Vocalist and keyboardist rock out together.

# PYROTECHNICS

# VENUE CREATION

Pyrotechnic calls trigger an explosion and a sound effect. They should be used sparingly.

### **PYROTECHNICS**

Use pyrotechnics to accent certain parts of the song. You can use them two or three times per song, if appropriate.

#### BONUSFX

Triggers the explosion effect:

Only seen in arena venues.
 BONUSFX is not triggered in smaller venues

#### BONUSFX\_Opt

The same as BONUSFX but only triggered when the player is doing well.

### BIG ROCK ENDING

Do not author [bonusfx] in Big Rock Endings. The effect will be triggered automatically:

When players finish a BRE in an arena the effect is triggered if they hit the last note(s) to score bonus points. If any player misses the last BRE note(s) then the effect is not triggered

### AUTHORING

Use MIDI notes in the venuegen LIGHTING track:

LIGHTING

BONUSFX BONUSFX\_Opt

For reference, the text events for pyrotechnics are [bonusfx] and [bonusfx\_optional]. For themes refer to page 668.



### THEMES VS VENUES

So far in this chapter we have covered:

- Lighting
- Directed cuts
- Post Processing

These elements can be used for **themes and venues**. For the rest of the chapter we will focus on venues using venuegen.

#### INSTALL VENUEGEN

Download venuegen from github.com/kueller/venuegen:

- Download the .zip file
- Extract it to C:\Venuegen

### A BRIEF INTRODUCTION TO VENUGEN

Venuegen is used to create venues. You can

use lighting, directed cuts, post-procs, and

Before venuegen was created authors made venues by placing text events. This was a cumbersome process:

basic cuts in your venue!

- Scroll through a long list of text events
- Place text events precisely
- Navigate densely packed and often hard to read text events in the VENUE track

With venuegen these issues are no longer a problem. Authors place MIDI notes in the CAMERA and LIGHTING tracks. This makes venue authoring much like authoring any other instrument. Venuegen then converts these MIDI notes to text events in the VENUE track.

It is assumed that you will use venuegen to author your venue.



# VENUEGEN SETUP

To setup venuegen we need the latest Python 2.x with ReaScript enabled:

- Python 2.x installation (pages 29 - 30)
- Enable ReaScript (pages 91 — 92)

Open REAPER to verify these dependencies:

- Press Ctrl + P
- Select Plugins > ReaScript
- Make sure that ReaScript is enabled and python27.dll is installed

Add two new tracks above your VENUE track:

- Select the VENUE track
- Press CTRL + T twice
- Name the tracks CAMERA and LIGHTING

Add MIDI items to each track and then mute them both:

- Click the Insert menu > New MIDI item
- Click the **Mute** buttons

Resize the MIDI items to the length of your song.



O HARM1	/0	M	MS	13	
O DRYVOX1	/0	M	M S	14	
O HARM2	/0	M	M S	15	
DRYVOX2 I	/0	M	MS	16	
O HARM3	/0	M	M S	17	
DRYVOX3 I	/0	M	M S	18	
PART KEY:	/0	M	M S	19	
O EVENTS	/0	-inf	MS	20	
CAMERA	/0	M	M S	21	
Lighting 1	/0	M	M S	22	
VENUE	/0	-inf	MS	23	
💿 BEAT 🛛 I	/0	-inf	MS	24	00 00 00 00 00 00 00 00 00 00 00 00 00



		Class	Dedahadarat	Continue M			
ter:		Clear	Find shortcut	Section: M	ain	~	
Shortcut	Description		^				
Shift+Q	Custom: Advance	ced Tempo	Mapping				
-9	Custom: CAT.py	,					
Alt+Q	Custom: Scroll 1	Гетро Мар	ping				
Q Custom: Set tempo by bar							
T Custom: Set tempo by bar (new time signature)							
Shift+Tab	t+Tab Custom: Tab to next transient						
_eft	Custom: Trim Left to Mouse Cursor						
Right	Custom: Trim Right to Mouse Cursor						
	Custom: Zoom h	norizontally					
-10	Custom: venueg	gen.py					
	Action: Modify I	AIDI CC/mo	ousewheel: +10%				
	Action: Modify I	AIDI CC/mo	ousewheel: -10%				
Shortcuts for selected action							
F10 Add	Cust	om actions	: New	Edit	Delete	Сору	
Delete		ReaScript	: New/load	Edit	Delete	Сору	

Load MIDI note names:

- Double-click the CAMERA track to open it
- Right click the CAMERA track tab
- Click File > Customize note names > Load note names from file in the menu
- Browse to the venuegen install folder and select CAMERA.TXT

Repeat these steps for the LIGHTING track and select the LIGHTING.TXT file.

Add an action for Venuegen:

- Click the Actions menu >
   Show action list
- Click the New/load button
- Browse to the venuegen install folder and select venuegen.py
- Add the F10 shortcut key:
- Select Custom: venuegen.py from the Actions list
- Click the Add button
- Press the F10 key
- Click OK

# THE VENUEGEN INTERFACE

Use venuegen to create venues with MIDI notes. You can import existing venues into venuegen.

dialogue.

To map CAMERA and LIGHTING

Click the Generate button

To transfer these text events to

MIDI notes to text events:

Click the two Apply to

**VENUE** buttons

the VENUE track:

### TEMPLATE, MIDI, AND TEXT EVENTS

There are three main elements to venuegen CAMERA and LIGHTING tracks:

- The note names in the left hand panel
- MIDI notes in the MIDI editor grid
- Text events generated in the lower panel





# VENUEGEN DIALOGUE



Press F10 to open the venuegen To copy an existing venue into venuegen:

- Export the MIDI from an existing custom and import it into REAPER (see pages 731 — 732)
- Click the two Apply to **CAMERA/LIGHTING** buttons to create MIDI notes in venuegen

#### CAMERA TRACK BASICS

You can author individual or stacked camera cuts in venuegen:



	STACKED	ситѕ
V_Cl G_H	oseup and	• • •

Individual cuts happen in sequence. Stacked shots are chosen according to cut priority. They are used to account for band members who may not be present (see page 714).

**Note**: Venuegen will generate single text events for the majority of camera cuts.

### PREDITCABLE DIRECTED CUTS

MIDI notes in venuegen.

Most directed cuts have an unpredictable start and end time. This is due to pre and post roll footage in these cuts.

The following directed cuts can have predictable start and end times though:

- All cuts that end with LT\*
- D\_Bass\_CLS\*
- D\_Gtr\_CLS\*
- D Drums CLS\*
- D\_Crowd\*

Author predictable cuts as follows:



Author individual and stacked camera cuts with

VENUE CAMERA CUTS

In this example you can see that D\_Gtr\_CLS\* is one measure long.

The two text events generated by venuegen are both the same. They are positioned at the start and end of the MIDI note.

The duration of this cut does not matter so long as it ends before the next cut starts.



# VENUE LIGHTING

# MANUAL LIGHTING CALLS WITH KEYFRAME TRIGGERS

Each in-game venue has its own preset stage lighting setup.

Venue lighting cues change the lights in each venue. But each venue has its own preset lighting arrangement:

- Smaller venues have a small variety of lights
- Larger venues have dozens of lights available

Lighting cue text events are formatted as follows:

[lighting ( )]

For example, a fast strobe would be:

[lighting (strobe\_ fast)]

**Note**: The following text events used in Rock Band 1 are no longer valid:

- [lighting ()]
- [verse]
- [chorus]

If [lighting ()] is at the start of your VENUE track change it to one of the following:

[lighting (intro)]

[lighting (harmony)]

Note: The Verse and Chorus MIDI notes in Venuegen produce updated [verse] and [chorus] text events:

[lighting (verse)]

SMALL VENUE LIGHTING EXAMPLES

[lighting (chorus)]

These presets use keyframe triggers to cycle through their colors.



### MANUAL LIGHTING: FIRST, NEXT, AND PREVIOUS

Manual lighting presets use triggers to cycle through keyframes.

In venuegen these triggers are first, next, and previous.

Their usage is as follows:

- Call the first keyframe at the start of the lighting cue with first
- Call subsequent keyframes with next
- Call previous keyframes with previous

In the example above the keyframes are called on quarter notes. You can space your venue keyframes as close or far apart as you want.

**Note**: If your keyframes are very close together the effect may be jarring.

# LIGHTING AND POST PROCESS BLENDING

Most lighting and post processing cues can generate up to two text events. This allows for blending between cues.

### LIGHTING & POST PROCESS BLENDING

By default lighting and postprocessing cues switch quickly from one to another:



In this example cue **A** generates a single text event. This is because cue **A** is touching cue **B**. The switch between these cues occurs at cue **B**.

The text events in the VENUE track are shown below:



When there is space between notes the cues blend together. For example:



Here cue **A** generates two text events. One at the start of the note and one at the end. The blend between cues happens in the gap between the two notes.

The blend occurs between the blue text events below:



# DIRECTED CUTS

You can use the blending method to make a directed cut last for a custom duration:



# RANDOM CAMERA CUTS

The RANDOM MIDI note generates a random camera cut.

RANDOM

G\_Near

[coop\_g\_near]

RANDOM

[coop\_dg\_near]

### RANDOM CUTS OVERVIEW

The RANDOM MIDI note is at the top of the LIGHTING track template. It generates a random standard camera cut. **Note**: Standard cuts do not include directed cuts.

### STACKED CUTS WITH RANDOM

When a RANDOM note is stacked with other cuts:

 A random cut is chosen that is lower in priority than the other stacked cut(s)

### RANDOM CUT GENERATION

Random generated cuts will be different than the previous and next camera cuts.

This is also true if there are stacked cuts before and after a random cut.

# RANDOM CUTS IN A ROW

[coop\_b\_behind] [coop\_v\_closeup]

B\_Behind

K\_Near

[coop\_k\_near]

Random cut generation looks at other random cuts.

Even with a whole venue of random cuts no camera cut will repeat twice in a row.

### VENUEGEN CUT GENERATION

RANDOM CAMERA CUTS

G\_Near

[coop g near]

[coop\_k\_behind]

K Behind

New random cuts will generate each time you click the **Generate** button in venuegen.

If you like the cuts generated change them to static cuts.

# AUTOSTROBE

The STROBE note in venugen gives you more control over strobe lighting effects.

### STROBE NOTE OVERVIEW

The STROBE note is at the bottom of the LIGHTING track template. STROBE is similar to the Strobe\_Slow and Strobe\_Fast effects, but with more variation. This variation is provided by a range of note velocities.

To start, author a STROBE note with the desired duration.

Note: Pay close attention to where STROBE notes begin. Generated text events are placed in relation to the position of the STROBE note. They do not automatically sync to the MIDI editor grid.

Next, adjust the velocity of the STROBE note:

- Select the STROBE note and right click it
- Navigate through the Note velocity context menu to set a value: {4, 8, 16, 32, 104, 108, 116, 132}

			NOT	E VELOCITY
			•	2
• •				4
• •			•	5
•			•	6
<ul> <li>Insert note at mouse cursor</li> </ul>	Insert		•	8
Insert note at edit cursor	Shift+I		•	9
Сору	Ctrl+C		:	10
Cut	Ctrl+X		•	11
Paste	Ctrl+V		•	12
Paste preserving position in measure	Ctrl+Shift+V		•	13
Select all notes			•	14
Delete notes			•	15
Split notes	S		•	16
Split notes under mouse cursor	Shift+S		•	17
Join notes	J		•	18
Mute events	Alt+M		•	19
Select previous note			:	20
Select next note			•	21
Select previous note with same note value			•	22
Select pert note with same note value			•	23
Select all notes with same note value			•	24
			•	25
Note properties	Ctrl+F2		•	26
Note channel	>		•	27
Note velocity	>	1-3	51 >	28
STROBE		32-	-05 >	29
		04·	127	21
		~ 90-	-12/ >	51



# STROBE NOTE EXAMPLES

The examples to the left show note velocity and STROBE rates. For example, the 1/4 note strobe has a velocity of 4. This turns the strobe on once every quarter note. (The strobe turns off between each quarter note).

For clarity, on and off symbols have been added to the top of each text event. The lighting calls used are below:

> Flare\_Fast [lighting (flare\_fast)]

Blackout\_Fast [lighting (blackout\_fast)]

The 1/8 and 1/16 note strobes here are like the regular strobe lighting effects:

- Strobe\_Slow
   8th note flash
- Strobe\_Fast
   16th note flash

# SING-ALONGS

Sing-along notes apply the lip-sync animation of the vocalist to other in-game characters.

### SING-ALONG MIDI NOTES

There are three options for singalong notes in the VENUE track:

VENUE 87 D#5 Guitarist Sing Along \* 86 D5 Drummer Sing Along 85 C#5 Bassist Sing Along \*

\* **Note**: If these players are absent from the game then the keys character will sing along instead.

Extend these notes for the duration of the sing-along.

If harmony vocal parts are present:

- Guitarist lip-syncs HARM 2
- Bassist lip-syncs HARM 3
- Drummer lip-syncs HARM 1

The keyboardist will fill-in for guitar or bass if they are absent.



SING-ALONG EXAMPLE

VOCAL AND BASS SING-ALONG



#### SPOTLIGHT MIDI NOTES

Spotlight notes can be used one at a time or together in any combination:



40 E1 Spotlight on Vocals39 D#1 Spotlight on Guitar38 D1 Spotlight on Bass37 C#1 Spotlight on Drums

Author spotlight notes for the duration of time that the spotlight is on. When the note ends the spotlight will turn off.

Note: Spotlights take about a second to be fully lit. If you want the spotlight to sync better with the music:

- Move spotlight notes so that they start a 32nd note before the spotlight hits \*
  - \* Move notes back a 16th note at higher tempos

### SPOTLIGHT EXAMPLE





# SPOTLIGHTS

Spotlights highlight one or more of the characters on the stage.
## VENUE CREATION TIPS

## STACKED CAMERA SHOTS AND SHOT PRIORITY

instruments are being played.

Stack camera shots together so that you can get the shots that you want, no matter which

Follow these tips for great looking venues!

## CUT FOCUS

 Place a new camera cut every two to four seconds

•	•	•	•
-	•	•	•
•	•	•	•
-	•	•	•
•	•	•	•

◄··· 2 to 4 seconds ···▶

This gives time for the shot to be established. It also allows time for camera movement in the shot. For example, an inward zoom, or pan to the left.

**Note:** Many shots veer away from their focus when held for too long. A four second limit prevents this from happening.

## **POST-PROCS**

 Double-check lighting cues when using post-procs

Make sure that onstage action is visible. A blackout with the photocopy post-proc results in a black screen, for example.

## DIRECTED CUTS

 At least one-twelfth of cuts should be directed cuts



Note: You do not have to manually add directed cuts. They are included in the pool of randomly produced cuts.

## SPECIAL MOMENTS

 Aim for two or three special moments each minute



◄····· One Minute ·····►

Add filler shots around these moments until the pace of cuts feels right.

## CUT PACING

 Use the feel of the song to place cuts



◄····· Seconds ···· ►

**Above**: Some songs have cuts that last almost twelve seconds.

**Below**: "Hello There" by Cheap Trick has cuts that average 1.5 seconds each.



◄······ Seconds ·····►

The venue track should reflect the mood and feel of the song.

## STACKING SHOTS

You may often need to author more than one camera shot at a time in your venue. There are a couple of reasons for this:

- Only four band members are on stage at any given time
- Specific shots usually include the guitarist, bassist, or keyboard player
- You cannot guarantee which band members will be present in the song

For example, if you would like a two shot with:

Vocalist and guitarist

You should also stack similar shots, such as:

Bassist and keyboard player

This way, If the guitarist is not playing, you will still get a shot of the bass and keys players.

## GV\_Near BK\_Near





Note: BK Near has priority over

GV Near.

The shots on the following pages are listed in priority order, from most generic to most specific.

## SHOT PRIORITY

Stacked shots are prioritized by the camera system. The chosen shot is the one that:

 Most closely matches the band members present on the stage

If none of the stacked shots match the band members on the stage:

 A suitable generic shot is chosen. (One that most closely matches the band members on the stage)

VENUE AUTHORING

EXAMPLE CAMERA SHOTS

Get creative with camera angles and the pacing of your shots!









LIGHTING	TEXT EVENT	LIGHTING	TEXT EVENT
All_Behind	[coop_all_behind]	B_Hand	[coop_b_closeup_hand]
All_Near	[coop_all_near]	B_Head	[coop_bd_near]
D_Near	[coop_d_near]	BD_Near	[coop_bd_near]
V_Behind	[coop_v_behind]	GV_Behind	[coop_gv_behind]









## CAMERA SHOT PRIORITY (GENERIC TO SPECIFIC)

## FOUR CHARACTER SHOTS

All_Behind
All_Far
All_Near

If no other shot can be matched, one of these is used.

Note: It is also possible that a three-character shot may be selected instead.

## **3 CHARACTERS** (NO DRUMS)

### Front\_Behind

### Front\_Near

These shots are also low priority. They work well in all contexts and are quite general. They are slightly more specific than four character shots.

## ONE CHARACTER STANDARD SHOTS

D_Behind	D_Hand
D_Near	D_Head
V_Behind	V_Closeup
V_Near	B_Hand
B_Behind	B_Head
B_Near	G_Head
G_Behind	G_Hand
G_Near	K_Hand
K_Behind	K_Head
K_Near	Two character combinations

take priority. These shots take priority over more general single There are fairly specific shots character shots. For example, a (but less specific than some bass close-up beats a general two character combinations). keyboard shot. Again, drums Drums and vocals are lower and vocals are lower priority. priority (they are always present).

ONE CHARACTER

**CLOSEUP SHOTS** 

## TWO CHARACTER SHOTS



## BK\_Near **GK\_Behind** GK\_Near These shots are the most

specific of the basic (nondirected) camera shots.

Shots that include drums and vocals are lower priority. They are always valid, and so, more general.

Note 1: A single keys shot will have priority over these shots.

Note 2: If a band member is missing when one of these shots is called (and there are no other shots stacked):

The camera will fall back to a single shot of the remaining band member

Turn to page 721 to see tables that convert venugen names to VENUE text events.

## DIRECTED CUTS PRIORITY (GENERIC TO SPECIFIC)

Directed cuts are always more specific than normal shots. This list attempts to arrange them in order from least to most specific.

## AUTHORING DIRECTED CUTS



## FULL BAND / **CROWD SHOTS**





## D Crowdsurf D\_Bass D\_Crowd\_Bass D\_Bass\_NP D Bass Cam D\_Bass\_CLS\* < D\_Gtr D\_Crowd\_Gtr D\_Gtr\_NP < D\_Gtr\_CLS\* D\_Gtr\_Cam\_PR

## D\_Gtr\_Cam\_PT D\_Keys D\_Keys\_Cam D\_Keys\_NP

D_Duo_Dru	ums
D_Duo_Gti	r
D_Duo_Ba	ss
D_Duo_KV	
D_Duo_GB	
D_Duo_KB	
D_Duo_KG	

TWO CHARACTER

SHOTS

## VENUEGEN CAMERA TO VENUE TEXT EVENTS

These tables list venuegen camera cuts and their associated text events.

CAMERA CUT	TEXT EVENT	CAMERA CUT	TEXT EVENT
RANDOM	Generates a random camera cut	G_Behind	[coop_g_behind]
All_Behind	[coop_all_behind]	G_Near	[coop_g_near]
All_Far	[coop_all_far]	K_Behind	[coop_k_behind]
All_Near	[coop_all_near]	K_Near	[coop_k_near]
Front_Behind	[coop_front_behind]	D_Hand	[coop_d_closeup_hand]
Front_Near	[coop_front_near]	D_Head	[coop_d_closeup_head]
D_Behind	[coop_d_behind]	V_Closeup	[coop_v_closeup]
D_Near	[coop_d_near]	B_Hand	[coop_b_closeup_hand]
V_Behind	[coop_v_behind]	B_Head	[coop_b_closeup_head]
V_Near	[coop_v_near]	G_Head	[coop_g_closeup_head]
B_Behind	[coop_b_behind]	G_Hand	[coop_g_closeup_hand]
B_Near	[coop_b_near]	K_Hand	[coop_k_closeup_hand]

CAMERA CUT	TEXT EVENT	CAMERA CUT	TEXT EVENT	
K_Head	[coop_k_closeup_head]	BK_Behind	[coop_bk_behind]	
DV_Near	[coop_dv_near]	BK_Near	[coop_bk_near]	
BD_Near	[coop_bd_near]	GK_Behind	[coop_gk_behind]	
DG_Near	[coop_dg_near]	GK_Near	[coop_gk_near]	
BV_Behind	[coop_bv_behind]	D_All	[directed_all]	
BV_Near	[coop_bv_near]	D_All_Cam	[directed_all_cam]	
GV_Behind	[coop_gv_behind]	D_All_LT*	[directed_all_lt]	
GV_Near	[coop_gv_near]	D_All_Yeah	[directed_all_yeah]	
KV_Behind	[coop_kv_behind]	D_BRE	[directed_bre]	
KV_Near	[coop_kv_near]	D_BRE_Jump	[directed_bre_jump]	
BG_Behind	[coop_bg_behind]	D_Drums_NP	[directed_drums_np]	
BG_Near	[coop_bg_near]	D_Bass_NP	[directed_bass_np]	

## VENUEGEN CAMERA TO VENUE TEXT EVENTS (CONTINUED)

CAMERA CUT	TEXT EVENT	CAMERA CUT	TEXT EVENT
D_Gtr_NP	[directed_guitar_np]	D_Gtr_Cam_PT	[directed_guitar_cam_pt]
D_Vox_NP	[directed_vocals_np]	D_Keys_Cam	[directed_keys_cam]
D_Keys_NP	[directed_keys_np]	D_Bass_Cam	[directed_bass_cam]
D_Drums	[directed_drums]	D_Stagedive	[directed_stagedive]
D_Drums_LT*	[directed_drums_lt] <	D_Crowdsurf	[directed_crowdsurf]
D_Vocals	[directed_vocals]	D_Vox_CLS	[directed_vocals_cls]
D_Bass	[directed_bass]	D_Bass_CLS*	[directed_bass_cls] <
D_Gtr	[directed_guitar]	D_Gtr_CLS*	[directed_guitar_cls] <
D_Keys	[directed_keys]	D_Drums_KD*	[directed_drums_kd] <
D_Vox_Cam_PR	[directed_vocals_cam_pr]	D_Drums_Point	[directed_drums_pnt]
D_Vox_Cam_PT	[directed_vocals_cam_pt]	D_Crowd_Gtr	[directed_crowd_g]
D_Gtr_Cam_PR	[directed_guitar_cam_pr]	D_Crowd_Bass	[directed_crowd_b]

CAMERA CUT	TEXT EVENT
D_Duo_Drums	[directed_duo_drums]
D_Duo_Gtr	[directed_duo_guitar]
D_Duo_Bass	[directed_duo_bass]
D_Duo_KV	[directed_duo_kv]
D_Duo_GB	[directed_duo_gb]
D_Duo_KB	[directed_duo_kb]
D_Duo_KG	[directed_duo_kg]
D_Crowd*	[directed_crowd]

These directed cuts do not contain unique animations. Instead they contain unique camera angles.

## VENUE EXAMPLE: SIM "THE RUMBLING"

This custom venue really matches the mood of the song!

This is a dramatic song that changes mood often:

- Mid range vocal, guitar, and more restrained drums
- Low growling vocal, chunky guitar, and heavy drums

The transitions between these moods works very well. For example, dramatic hits on the drums are paired with chords on the guitar and keys. This is captured in the venue with:

- Great use of random camera cuts in time with the drums
- Stomp, spot lighting, blackouts, and fast strobes
- Bright and flicker trails postprocessing

Many thanks to C3 author Linos Melendi for permission to use this venue!







Photo\_Negative



RANDOM Stomp Bright





## **VENUE EXAMPLE:** SIM "THE RUMBLING" CAMERA CUTS

This MIDI combines two sequences of cuts for an intense section. At note A we are near the end of the "mellow" section and cut to the drummer. The first sequence is fast and bright. Notes  $\mathbf{B} - \mathbf{D}$  follow the drum hits with random cuts, Bright and Stomp. Film\_Contast\_Red and Blackout\_Spot add the finishing touches. The effect is very dramatic!



The second sequence is faster with blurred colorless cuts. Notes **E** follow the drum fill with random cuts, Strobe\_Fast and Flicker\_Trails. Most of the color is removed by Flicker\_Trails giving an almost black and white look. Flicker\_Trails also blurs the transition between cuts. In motion this effect looks amazing!











## VENUE EXAMPLE: SIM "THE RUMBLING" BLENDING AND DIRECTED CUT

This example makes great use of **blending between lighting cues**. The notes **A** do not exist in the MIDI - they are used to show the fade between **Sweep** and **Strobe\_Slow**. These slow strobe notes are 8th notes. They match the authored random cuts and are in time with the instruments and drum parts. The strobe flashes increase with intensity as the music builds up.



**Note**: The bright part of each strobe hits a little after each cut. Here that works very well.

This is followed by **Blackout\_ Spot** (note **B**). The music stops. The stage is dark and under lighting illuminates the characters. The characters jump into the air. This is controlled by the **D\_All** cut (note **C**) that hits with the climax of the build up. So satisfying!









А

## IMPORT AN EXISTING VENUE INTO VENUEGEN

You can import authored and auto-generated venues into REAPER. Both of these options require a compiled custom:

- Open Nautilus
- Drag and drop the custom song file onto the Nautilus user interface

RBtoUSB	Visualizer	Setlist Manager	Advanced Art Converter	Upgrade Bun
Pack Creator	MIDI Cleaner	Batch Extractor	CON/RBA Converter	Video Prepa
Quick Pack Editor	File Analyzer	Batch Renamer	Wii Converter	Mogg Make
Quick DTA Editor	Audio Analyzer	Batch Processor	PS3 Converter	Mini Studi
CON Creator	Volume Normalizer	Event Manager	YARG/CH/PS Converter	Batch Crypt
CON Explorer	Save File Image Editor	File Indexer	RBA Editor	Stems Isolat

A new window will open:

Click the **Contents** tab

 Click songs > [custom song name] 2

In the lower panel:

- Select the .mid file
- Right-click the selected file and choose Extract selected files from the menu
- Click the **Save** button

The .mid file is saved to the same folder as the custom song.







#### Open REAPER:

- Open a new project
- Select and then delete the existing MIDI items
- Drag and drop the .mid file into the PART DRUMS track at measure 1.1.00
- The **MIDI file import options** window will open:
- Click **OK** to confirm

The venue (highlighted in yellow) is one of the imported MIDI items.

To import the VENUE into venuegen:

- Press F10 to open venuegen
- Click the Pull LIGHTING from VENUE and Pull CAMERA from VENUE buttons

## **IN-GAME VENUES**

A reference gallery of in-game venues.























735 VENUE AUTHORING















































<image>







**Note**: Music videos are not included in the venue gallery.

## SUMMARY VENUE AUTHORING

- Themes work off practice sections in your EVENTS track.
- Use existing Magma themes as a template.
- Themes have three sections. Add lighting and post-procs to section presets.
- Use venuegen to author full venues with MIDI notes.
- Manual lighting calls use keyframes or triggers to cycle through their colors.
- Automatic lighting calls cycle automatically over time.
- Add post-proc effects to change the look of a camera shot.
- Directed cuts can be very dramatic. Use them for special moments in the song.
- Stack shots to account for instruments that are not being played in-game.
- Use note velocity to control strobe light rates.
- Blend lighting and post-proc calls for subtle transitions.



Animation

## CAT

## The C3 Automation Tool (CAT) provides a huge list of functions to make your authoring life easier!

Take a look at the screenshot on the facing page and you will see how many functions CAT has to offer. The grid of various size buttons is not pretty, but the functions are very useful.

At first glance it may not be obvious what some of the functions actually do. This chapter guides you through the basics of CAT, button by button.

The only buttons not discussed are:

- Pro instrument buttons, and
- Automatic drum animations \*

\* Automatic drum animations were previously discussed on pages 367 — 368.

One final note. It is essential that tracks are named correctly for CAT to work. The C3 Template to takes care of this for you. Also, be sure that the [end] event in the EVENTS track is correctly placed. If not, some CAT functions will not work as expected.

At the end of this chapter you will know how to use 40+ CAT functions. This knowledge will help you save a lot of time as you author your custom songs!

CAT is an essential tool for custom song authors. It has almost fifty functions divided into the following sections:

- Animation and systems
- 5-lane Instruments
- Drums
- Vocals
- Supersets
- Pro Guitar/Bass
- Validation \*

\* The C3 Automatic Rules Validator (CARV) is included in CAT version 1.3.0. See page 762 for details.

County DEAThorn		Courte deservations					
Create BEAT track	Create animations events	Create drums anima	tions	reate pro keys animat	ions Ken	nove invalid markers	
5-lane:							
Remove notes	Reduce to triple hits	Fix sustains	F	ix trills/rolls	Edit	by MBT	
Polish notes	Reduce chords Lo	wer frets complexity	r frets complexity Add missing solo/OD to pro Clean i		Clean up i	up notes' length	
Reduce by patter	n Reduce pr	o keys note density ba	sed on 5-la	ne			
Remove kicks	Leave single spare bits Flip	disco beats Unflin d	isco heats	Reduce 2x bass ne	dal		
Vocals:							
Add slides	Add space between tubes	Remove illegal pun	ctuation	Capitalize first lyric i	n phrases	Check/fix capitalization	
Hide lyrics	Change notes to non-pitched	Create phrase markers Trim phrase markers Compa		Compact harmonies			
Fix text events	Add overdrive phrases	Delete empty ph	rases	Compact phra	ases	Change notes to pitched	
Export lyrics	Show lyrics	Create sing-a-long	g notes				
Supersets:	1.0	1.1		1	1	1	
Automatic reduct	tions (5-lane) Automatic red	uctions (drums) Au	tomatic ar	imations Vocals c	lean up	Seneral clean up	
Pro Guitar/Bass: -						1	
Generate Koot INC	Generate Fret Hand Pos	Copy OD/Soli	o iviarkers i	rom 5-lane Reduc	e from 5-lar	ie	
Validation:							
	D.L. M.F.L. (CADIA)						

Use CAT to automate common authoring tasks.

To install CAT refer to pages 33 — 34. To setup CAT dependencies see pages 29 — 30, and 91 — 94.

Press **F9** to open CAT in REAPER.

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## CREATE BEAT TRACK

## A beat track is needed for all custom songs.

## CREATE BEAT TRACK

This function creates downbeats and upbeats in the BEAT track:

- One downbeat per measure
- One upbeat per beat

Notes in the BEAT track end one beat before the [end] event in the EVENTS track. Make sure that you place your [end] event correctly in the EVENTS track (see page 637).

To create the BEAT track:

Click the Create BEAT Track button

The Manage BEAT Track window will open:

Click the Create BEAT Track notes button

### HALVE BEAT TRACK

Halve BEAT track is used for animation purposes. It creates a half-speed BEAT track.

To halve the whole BEAT track:

Click the Halve BEAT track notes button

To halve selected measures:

- Select measures in the BEAT track
- Click the Halve selected BEAT track notes button

CAT: MANAGE BEAT TRACK 76 Manage BEAT track Create BEAT track notes Halve BEAT track notes Halve selected BEAT track notes **C<sup>3</sup>** Automation Tools



## **CREATE ANIMATION EVENTS**

Add character animation text events to the selected track.

## ANIMATION MARKERS

Create animation markers adds animation text events to the selected track.

Click the Select instrument button to choose a track:

- Drums
- Guitar Bass .
- Keys
- Pro Keys
- 2x Drums
- Rhythm
- Vocals

Click the Select expression button to choose an animation type:

- Mellow
- Intense

Play

- The **play** expression adds text events to appropriate positions in the track. For example:
- [play]
- [idle]
- [idle\_realtime]

Press the Create markers button to create animation text events.

The **mellow** expression will add:

- [mellow]
- [idle]
- [idle\_realtime]
- The **intense** expression will add:
- [intense]
- [idle]
- [idle\_realtime]

Use the **mellow** or **intense** expressions if they apply to the whole song. Otherwise use the **play** expression. Add any [mellow] and [intense] text events as needed.

74 Create animatio	n markers	CAT: CREATE ANIMATION	MARKERS
Rhythm 🖃	play 🖂	default	Create markers
Select instrument	Select expression	Pause in tick between notes to trigger an idle event	
C <sup>3</sup> Automa	tion Tools		



## **REMOVE INVALID MARKERS**

## **CAT FUNCTIONS: 5-LANE**

Invalid markers cause problems when you compile your custom song.

Index

27

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5-lane functions are for guitar, bass, and keys.

## **REMOVE INVALID** MARKERS

Imported MIDI data often includes data that is not needed in custom songs.

To remove this data with CAT:

Click the Remove invalid markers button

To review the event data in any MIDI track:

- Close CAT (if it is open)
- Press Alt + 3 (events view)

Note: This command does not remove SYSEX events from your MIDI. To delete SYSEX events use events view:

- Click SYSEX events \* \* Use the **Ctrl** or **Shift** keys to select multiple events
- Press the Delete key

To return to the default view:

Press Alt + 2

	CAT: ANIMATION AND SYSTEM
76 C3 Reaper Automation Project	CAT. ANIMATION AND STSTEM
- Animation and System:	
Create BEAT track Create animations events Create drums animatic	ns Create pro keys animations Remove invalid markers

Destination	E	EVENTS VIEW WITH CHANNEL MARKERS					
Position	Length	Channer	1300	rarameter			
25.1.52	0.0.52	3	Note	D4			
25.2.04	0.3.15	3	Note	C4			
25.2.79		3	Chan Aftertouch				
25.2.92		3	Chan Aftertouch				
25.3.05		3	Chan Aftertouch				
25.3.19		3	Chan Aftertouch				
25.3.32		3	Chan Aftertouch				
25.3.49		3	Chan Aftertouch				
25.3.61		3	Chan Aftertouch				
25.3.73		3	Chan Aftertouch				
25 4 71		2	Chara ABastanah				

		EVENTS V	IEW WITH	INVALID MA	RKERS REMOVED
Index	Position L	congui	Channer	(3be	r arameter
27	25.1.52	0.0.52	3	Note	D4
28	25.2.04	0.3.15	3	Note	C4
29	27.1.03	0.0.47	3	Note	G4
30	27.1.54	0.0.52	3	Note	D#4
31	27.2.04	0.0.44	3	Note	C4
32	27.2.58	0.0.43	3	Note	G4
33	27.3.20	0.1.54	3	Note	D#4
34	28.3.05	0.0.46	3	Note	C4
35	28.3.98	0.0.47	3	Note	D#4
36	28.4.98	0.0.33	3	Note	F4
27	29 1 64	0.0.27	2	Note	EA

## **REMOVE NOTES**

Use Remove notes to reduce the note density for two or more measures.

Use the Select grid drop down menu to choose the required note density:



## **REDUCE TO TRIPLE** HITS

Removes the 4th note from a steam of selected notes:



The example above is straight 16th notes. The notes removed are white.

## **FIX SUSTAINS**

Use this function to fix sustain note length on 5-lane charts. Choose the instrument and difficulty in the drop down menus. The general **sustain note** gap for each difficulty is:

- Expert and Hard: One sixteenth note
- Medium and Easy: A quarter note



Note: The sustain note gap that CAT produces depends on the BPM of the song. See pages 397 - 398 for details.

## FIX TRILLS / ROLLS

This function will **replace** authored notes under roll and trill markers. It produces:

- Eighth notes on Hard
- Quarter notes on Medium
- Quarter/half notes on Easy \*

\* Quarter notes for trills and half notes for rolls.

For example, a sixteenth note Green/Red trill fixed on all difficulties:



# CAT FUNCTIONS: 5-LANE (CONTINUED)

## CAT FUNTIONS: DRUMS

Drum only CAT functions. For drum reductions see the 'CAT Functions: Supersets' topic.

## EDIT BY MBT

Remove notes by measure, beat, or ticks. Use the Beat drop down menu to select the beat. The number of beats listed will depend on the time signature.

The ticks drop down menu shows ticks for grid sizes up to 32nd note triplets. For example:



Tick values repeat for each beat. The MBT counter in the Transport Bar shows ticks for the current play cursor position:

## 2.1.00 / 0:02.000

Use the checkboxes in the dialogue to select the note color to remove. You can remove all notes or selected notes.

## POLISH NOTES

This fuction fixes notes that are off grid by a defined amount. \* Grid options are:

1/16

1/32

■ 1/64

\* The default tolerance is 20 ticks (about a 1/128 note).

## **REDUCE CHORDS**

Reduce chords for Hard, Medium, and Easy. Click the **Enable option** checkbox to:

- Reduce three note chords to Green/Blue and Red/Orange chords (Hard)
- Allow Blue/Orange chords (Medium)
- Allow single Blue and Orange notes (Easy)

### LOWER FRETS COMPLEXITY

Focus charts to a range of 4 notes (Medium) or 3 notes (Easy). Results can be variable.

### REDUCE BY PATTERN

This function allows you to reduce parts of completed instrument charts:

- Click Reduce by Pattern
- Select one or more Expert measures in REAPER
- Select Hard, Medium or Easy from the drop-down menu
- Click Reduce by selected pattern

The reduction occurs:

- In the selected difficulty
- Wherever the selected pattern repeats in Expert

## REMOVE KICKS

Remove kicks paired with:

- Any note
- Snare
- Any tom
- Any snare or tom

## LEAVE SINGLE SNARE HITS

Leave only a single snare when paired with any note:

- Kick
- Tom
- Cymbal

Works for all, or selected notes, on selected difficulty.

## FLIP / UNFLIP DISCO BEATS

Flip disco notes based on disco flip markers. Applies to all, or selected notes. See pages 340 - 342 for more details.

Unflip transforms a disco beat to an 8th note single handed beat on Hard. This function un-flips Yellow and Red gems. It only works inside disco flip text events. Note: The Automatic reductions (drums) function also performs the Unflip function. It does this when it reduces Expert drums to Hard.

:



н

Reduces four straight 16th note kicks to three:



2X TO 1X

2X TO 1X

Removes every other 16th note triplet from a sequence:

**REDUCE 2X BASS** 

Reduces 16th note kicks to 8th

PFDAI

notes:

## CAT FUNCTIONS: VOCALS

CAT functions for vocals and harmonies.

### ADD VOCAL SLIDES

Adds a + text marker to any note without lyrics. This is useful when you:

- Add lyrics directly to each note. (You can avoid manually adding + markers)
- Find missing slides in a finished chart

### ADD SPACE BETWEEN TUBES

Add space between phrase markers that touch:

 Shorten the end of each touching tube by 1/64th note



### REMOVE ILLEGAL PUNCTUATION

Remove illegal punctuation from lyric events:

CAPITALIZE FIRST

Capitalize the first letter of the

PHRASE MARKER

CAPITALIZE LYRIC

long

first lyric per phrase marker:

A

LYRIC IN PHRASE

- , (comma)
- "" (quotation marks)

case:			
			ОК
		-	

or ignore the issue:

Upper case found

CHECK / FIX

CAPITALIZATION

Check for mid-phrase capital

window will open for each issue

found. Click **OK** or **Cancel** to fix

A word in the middle of the phrase is capitalized (God). Make it lower

Cancel

letters in lyrics. A dialogue

## HIDE LYRICS

Hide the selected lyric(s). Appends **\$** at the end of selected lyric(s) to hide them:

- Use to hide HARM2 and HARM3 lyrics when they differ \*
  - \* Generally hide the part that matches HARM 1. If neither match hide the easier part.

## CHANGE NOTES TO NON-PITCHED

Change lyrics to non-pitched. Append **#** or **^** at the end of each lyric. Use the drop down menu to select:

Normal non-pitched (#)

■ Loose non-pitched (^)

See also page 550.

## CREATE PHRASE MARKERS

Generate phrase markers based on lyric text events. Uses the @ character at the start of each phrase.



## TRIM PHRASE MARKERS

Adjust phrase markers to the nearest eighth note or quarter note. Use the drop down menu to select grid size.

•	TRIM MAR	RKERS
	•	•
•	•	•

COMPACT

HARMONIES

conditions are met:

difference.

at the same time

Set HARM2 and 3 to HARM1

phrase length when all these

HARM1. 2. and 3 notes start

 HARM1, 2, and 3 notes have the same lyrics attached

■ HARM1. 2. and 3 notes end

with less than 1/64th note

## FIX TEXT EVENTS

 Fix lyrics that are set as text events.

Converts text events that are not a Trackname and do not start with the character [ to lyric events.

Type: Lyrics

## ADD OVERDRIVE PHRASES

Create Overdrive phrases with a user defined frequency. The default frequency is one Overdrive phrase every four phrase markers.



## CAT FUNCTIONS: VOCALS (CONTINUED)

## CAT FUNCTIONS: SUPERSETS

Supersets are groups of functions that are run in series to complete complex tasks.

### **DELETE EMPTY** PHRASES

Remove empty pairs of phrase markers. Pairs are:

- HARM1 and HARM3, or
- HARM2 and HARM3

## COMPACT PHRASES

Try to make HARM1 and HARM2 phrase markers the same. \*

\* If there are no other overlapping phrases.



CHANGE NOTES TO PITCHED

Change un-pitched lyrics to pitched. Removes the **#** or **^** at the end of each lyric.

**EXPORT LYRICS** 

Export lyrics to a .txt file in the

custom song project folder.

function:

Export vocals

markers

vocal phrase.

There are two options for this

Export vocals with phrase

The later option adds the @

character to the start of each

## SHOW LYRICS

Show (un-hide) lyrics. Removes the **\$** character from hidden lyrics. The options are:

- Show all notes
- Show selected notes only

## CREATE SING-A-

Create sing-a-long markers for harmony parts (in the VENUE track). The options are:

- Harmony 2 (guitarist)
- Harmony 3 (bassist)
- Harmony 1 (drummer)

Note: Keys sings the missing guitar or bass part.

### **REDUCTIONS:** 5-I ANF

Create automatic reductions for Hard, Medium and Easy. I recommend that you reduce one difficulty at a time. Then review the chart before you reduce the next difficulty. Automatic reductions have the following options:

- Grid size
- Consecutive notes
- Sparse notes
- Fix pitch bend
- Reduce chords
- Allow Blue/Orange chords on Medium
- Simplify notes (Medium and Easy)

Note: Automatic reductions work best on songs without a lot of offbeat notes or accents.

### **REDUCTIONS:** DRUMS

Create Hard, Medium, and Easy reductions for drums. The options for drums are:

- Grid size
- Consecutive notes
- Sparse notes

- Remove kicks paired with percussion
- Unflip disco beat

This superset also simplifies rolls, starting from Hard.

HARD reductions:	AUTOMATIC 5-LANE
I Grid: 1/8 → Consecutive notes I Sparse notes	Fix pitch bend
🔽 If reducing chords, enable use of GB and RO when translating	g from 3-note chords
MEDIUM reductions:	
Grid: 1/4 - Consecutive notes G Sparse notes	Fix pitch bend
$\overleftarrow{\mathbf{v}}$ If reducing chords, enable use of BO chords	
EASY reductions:	
Image: Figure 3         Grid:         1/2         Image: Image: Image: Figure 3         Image: Image: Figure 3         Image: Image: Figure 3         Image: Image: Figure 3         Image: Figure 3	Fix pitch bend
$\overleftarrow{\checkmark}$ If reducing chords, keep the occasional B and O notes	
Options:	
Tolerance: 20 Guitar — Overwrite notes	Reduce
▼ Reduce chords (for all levels processed) ▼ Simplify Medium and	d Easy notes (for all levels processed)

LONG NOTES

## CAT FUNCTIONS: SUPERSETS (CONTINUED)

## CHART VALIDATION WITH CARV

Use the C3 Automatic Rules Validator (CARV) to check your REAPER project for errors.

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M/E

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### **AUTOMATIC ANIMATIONS**

The animation superset performs the following functions:

- Create drum animation notes
- Populate the BEAT track

761

 Add animation markers to all instruments

### VOCALS CLEAN UP

The vocals clean up supserset fixes many vocal issues.

Phrase and note fixes:

- Fix long phrase markers
- Trim phrase markers to downbeat
- Clean up empty phrase markers
- Compact harmonies
- Compact harmonies phrase markers

Lyric and text fixes:

- Remove invalid characters
- Fix text events
- Fix capitalization
- Fix lyrics set as text events

You can select one or more vocal tracks for clean up.

### **GENERAL CLEAN** UP

The general clean up superset fixes many general problems:

- Polish notes (excluding vocals)
- Fix sustains \* Fix only stubby sustains \* Fix stubby and too long sustains
- Simplify rolls, swells, trills, and tremolos
- Reduce double kick drum to single pedal
- Remove all invalid markers
- Copy missing Overdrive and solo markers to pro keys

You can select one or more instruments for clean up.

CARV checks for specific errors in your REAPER project. The output is presented in a web page in your default browser.

CARV does not check for every possible error. It does catch some significant errors though:

#### Drums:

- Fill checks: OD or drum rolls inside fills, OD touching fills
- Tom marker animation check (disabled by default)
- Three limb and two limb check for Medium and Easy

#### Keys:

- Check for > 3 note chords X/H
- Check for > 2 note chords M
- Check for chords

#### Guitar and Bass:

- Check for three note chords with Green and Orange gems
- Check for > 3 note chords
- Check for > 2 note chords
- Check for Green / Orange chords
- Check for 1 4 chords
- Check for a chord (if there is one in Expert)
- Check for forced HOPOs
- Check for chords

#### Pro Keys:

- Check for > 5 note chords X
  - Check for > 3 note chords
  - Check for > 2 note chords M
  - Check for chords



- Check lyrics for special characters
- Warn about periods in syllables
- Check for uppercase letter at the start of a phrase
- Check for uppercase syllables
- Check for 32nd note gap between notes
- Check for OD mismatch between PART VOCALS and HARM1

CARV does more than report errors. You can also use CARV to check your Overdrive phrases and song lyrics.

Е

- Create BEAT track is an essential function for every custom.
- Position the [end] event in your EVENTS track correctly before using CAT.
- Reduce instruments one difficulty at a time. Review the reduced chart before proceeding to the next difficulty.
- Take care when you use superset functions. There are many options enabled by default.
- Use the C3 Template so that all your track names are correct for CAT.



22

- Magma requirements
- Magma
- Magma errors

## Packaging your custom song with Magma is the final step in the authoring process.

Magma is a tool that combines your audio file(s), MIDI file, and song metadata together. The output file is a complete Rock Band song package.

Magma has three tabs to work through:

- Information (song metadata)
- Audio (song audio files, preview settings, and drum mix setting)
- Game Data (gameplay settings, MIDI file, and song ID)

This chapter walks you through these three tabs and some useful Magma settings. It also covers the Magma requirements and workflows that you need to complete before you start to package your custom. If you want to jump ahead, a walkthrough for a typical custom song is included.

This chapter also covers how to normalize your song audio. Pick the method that you like best.

By the end of this chapter you will have a complete custom song that is ready to play on your Xbox!

## GETTING STARTED

To package your custom song you need the following:

- A complete (or almost finished) custom MIDI
- A single, rendered audio file (unless you are using stems)
- Dry vox audio file(s), (if your song has vocals)
- Song metadata

The first few topics in this chapter will cover:

- REAPER MIDI export
- Song audio normalization
- Song audio export
- Dry vox export

## MIDI FILE

Magma expects a complete (or almost complete) MIDI file to package a custom song. If your MIDI is incomplete, you may need to add or adjust parts so that your MIDI will work with Magma. \*

\* Magma requirements are detailed in the Authoring chapters of this book. In most cases your song audio will be a single mixed audio file. The **song audio** requirements for Magma are:

.wav file format

**AUDIO FILES** 

- 44.1 Khz (41000 Hz) sample rate
- Stereo
- 16 or 24 bit depth

Use the **Render Song Audio** preset to export song audio from REAPER with these settings. **Note**: The above settings also apply to stems, except that stems can be mono.

The render settings for **dry vox audio** are as follows:

- .wav file format
- 16.0 Khz (16000 Hz) sample rate
- Mono
- 16 or 24 bit depth

For dry vox audio use the **Render Dryvox for Magma** Preset.

To create these presets see pages 67 — 70.

### DRY VOX PRIORITY

Your priority for dry vox vocal tracks is as follows:

- Vocal stems
- Self recorded dry vox
- .milo vocal midi expoort
- Separated vocals
- Mixed audio \*

\* It is OK to use mixed audio if you have no other option. Lip-sync results will vary. Mixed audio is fine to use if you plan to replace it with a .milo vocal MIDI lyric export.

### **TEXT & METADATA**

Text and metadata entered into Magma may only contain the following characters:

- ABCDEFGHIJKLMNOPQRSTU VWXYZ
- abcdefghijklmnopqrstuvwxyz
- #\$%&'()"+,-./
- :¿ÀÁÂÃÄÅÆÇÈÉÊÈÌÍĨĨĐÑÒÓÔ
   ÕØÙÚÛÜÝÞBàáâãäåæçèéêëiiî
   ïðñòóôõøùúûü
- ∎ !¡©®°

## MAGMA MIDI AND AUDIO FILES

## EXPORT PROJECT MIDI

2

Your project MIDI file is required by Magma to package your custom song.

Enable the following tracks in REAPER:

- PART DRUMS, PART GUITAR, PART BASS, PART KEYS \*
- PART VOCALS, HARM1, HARM2, HARM3 \*
- EVENTS, VENUE, and BEAT

\* Only include instrument and vocal tracks you have authored.

Make sure that all other tracks are muted:

 In the track controls click the M button

**Note:** You do not need to mute the SONG AUDIO and COUNTIN tracks. They are not exported.

Make sure that there are no tracks that are soloed:

 In the track controls toggle the solo button off



PART VOCALS	1/0	inf	MS		<< PART VOCALS
	-	2 16%R	FX U	11	
O DRYVOX1	I/O	-inf	MS	12	
O HARM1	1/0	M	M S	13	
O HARM2	I/O	M	MS	14	
O DRYVOX2	1/0	M	M S	15	
O HARM3	1/0	M	M S	16	
O DRYVOX3	1/0	M	M S	17	
PART KEYS	1/0	M	MS	2	
PART REAL KEY!	1/0	M	M S	19	
PART REAL KEY	1/0	M	MS	20	
O PART REAL KEY:	1/0	M	MS	21	
O PART REAL KEY:	1/0	M	MS	22	
PART KEYS ANIN	1/0		M S	23	
O PART KEYS ANIA	1/0		M S	24	
O EVENTS	1/0	-inf	MS	25	
O VENUE	1/0	-inf	MS	26	
O BEAT	1/0	-inf	MS	27	
PART REAL GUITAF	1/0	· · · · · ·	M S	28	



Wrote 7 tracks of MIDI to ."C:\Users\mikelane\Desktop\Candlemass -

MIDI export

Mirror Mirror v7.mid\*

Check your MIDI export settings:

Click File > Export project MIDI

The **Consolidate MIDI** window will open. Make sure that these buttons are checked:

- Entire project
- Consolidate MIDI Items: All
- Multitrack MIDI file
- Embed tempo map

Check your **filename** and **output directory** settings.

Export your Project MIDI:

Click the OK button

4

OK

The MIDI export dialogue will open.

Note the number of exported tracks. A full band custom with a single vocal track is eight tracks. A full band custom without keys is seven tracks.

Click the **OK** button

PACKAGE CUSTOM

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## RENDER SONG AUDIO FOR MAGMA

1

To render your song audio, solo your SONG AUDIO and COUNTIN tracks in REAPER:

 Click the S button in both track controls:



Check that there are no other tracks soloed

Open the Render to file window:

Click File > Render

Hotkey: Ctrl + Alt + R

The **Render to file** window will open.

Choose the **Render Song Audio** Preset:

Click the **Presets button** 

In the pop-up menu click:

 All Settings > Render Song Audio

ile	Edit View Insert	ltem	Track	Options	Actions	Help	[Remove lo	op/time selection]	[4
	New project				Ctrl+N				
	Open project				Ctrl+O		T152 921	T152 921	T152 215
	Save project				Ctrl+S		2.1.00	3.1.00	4.1.00
	Save project as			Ctrl	+Alt+S		0:01.570	0:03.140	0:04.711
	Project templates				>				
	Recent projects				>				
	New project tab			Ctrl+	Alt+N				
	Close project			C	Ctrl+F4				
	Close all projects							Custom Song.mp3	
	Save all projects							. از بال او و والا	ر ما بر غمسانه
	Project settings			Alt	+Enter				
	Render			Ctrl-	Alt+R			and the data of a data of	الأسبابة متعادين
	Show render queue		45					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	WT 1
	Save live output to disk	k (boun	ce)	Ctrl-	Alt+B				
	Consolidate/Export tra	cks						March March, March	When William Witch
	Export project MIDI								
	Clean current project d	lirector	/					na tan di anti	and share and
	Batch file/item convert	ter		Ctrl+S	Shift+F				
	Ouit				Ctrl+O				





Confirm your save settings and render your audio file:

- Set the output directory
- Set the file name
- Click the Render 1 file button



The Render window will open and process your audio:

 Wait for the render to finish, then click the Close button

## NORMALIZE SONG AUDIO: LUFS (MODERN REAPER)

Modern versions of REAPER can perform LUFS normalization.

## LUFS / REAPER OVERVIEW

LUFS normalization is a feature in newer versions of REAPER. It is simple to use, and automates the normalization process for you. I recommend this method for single (mixed audio) files.

Download the latest version of REAPER from:

https://www.reaper.fm/

Installation notes:

 Check the Portable install checkbox



## Change the Destination Folder \*

 Do not associate .rpp files with this installation

\* When you click the **Portable install** checkbox the install folder changes to C:\REAPER. **Do not** use this folder - (see the warning below).

A portable install isolates the latest version from your REAPER v4.22 installation.

**Do not** install this

v4.22 install.

version of REAPER to C:\REAPER. This will

overwrite your REAPER

Open a custom song project:

Open the new version of

REAPER that you installed.

NORMALIZE

Click File > Open Project

AUDIO WITH LUFS

- Browse and select your custom song .rpp file
- Click the **Open** button

Your project will open. Solo the SONG AUDIO track:

 In the SONG AUDIO track controls click the S button

#### 1 👩 SONG AUDIO 🙆 🛛 S 🔤 🛙

- Do not solo any other tracks
- Click on the audio waveform in the SONG AUDIO track

## 

Press F2 to open the Media Item Properties window

	52 O HMSF	Curve: Fade out: 0:00.0	0.00
Snap offset: 0:0	0.000	Curve	0.00
tem time <u>b</u> ase:	Track/project defa	ult timebase	Loop source     Mute
tem mix behavior	Project default item	mix behavior	✓ ✓ Lock
Active take: No	malize Media Items		× Play all takes
Take prope No	malize to: LUFS-I	~ -6.40	LU
Take name	ormalize each item sep	arately	~
Start in sou	lative volume of media	items may change.	0.000000
Playback ra			changing rate
Volume/par		OK Car	<u>N</u> ormalize
Channel mode:	Normal	<u>I</u> nvert phase	Take envelopes
- Take pitch shift	/time stretch mode		

To normalize audio:

- Click the Normalize button
- The **Normalize Media Items** dialogue will open. Use the following settings:
- Normalize to: LUFS-I
- -6.40 LU
- Normalize each item separately

**Note**: This will alter your SONG AUDIO track audio file. Make sure that you back-up this file before proceeding.

Click the OK button

The Normalize Media Items dialogue will close:

Click the OK button

Turn the page to render your normalized audio for Magma.

## NORMALIZE SONG AUDIO: W1 LIMITER

Normalize your song audio so that your Rock Band songs have a consistent volume.

## NORMALIZATION OVERVIEW

When you play Rock Band you likely have to adjust the TV volume from time to time. This is because there is no single standard that defines what song loudness should be.

This leaves the decision about what is loud enough, or too loud, to producers and audio engineers. The end result is that song loudness can be quite variable (depending on the songs that you are listening to).

There are various ways that you can normalize song volume, but you must do it properly. If not you will end up with audio that sounds flat or has unwanted noise from clipping.

To normalize our audio we will look at two methods:

- W1 Limiter
- LUFS normalization (see pages 773 774).

The W1 Limiter was previously discussed on page 296. This discussion looked at the use of the plugin and the recommended settings.

In this section we will detail the workflow and context for the recommended settings.

After reviewing both of the normalization methods you can decide which one you want to use. The W1 Limiter method can be used for single or multitrack audio. The LUFS method is for single track audio only.

I typically use the LUFS method as I do not have access to multitrack audio. I find the LUFS method easier to use.

To install the W1 Limiter see pages 39 — 40.

## W1 LIMITER

The W1 Limiter is a plugin for the SONG AUDIO track:

- Resize the SONG AUDIO track so that you can see the track controls
- Click the FX button on the SONG AUDIO track



The W1 Limiter has the following options:

- Ceiling
- Threshold
- Release

Use the recommended settings:

 Ceiling is an output level. The C3 Template sets the ceiling to -0.5dB. Set the ceiling to 0.0dB

- Threshold sets the level at which compression is applied. Try to keep your average volume around -6.4dBFS. No louder than -3.7dBFS and no softer than -8.9dBFS
- Release is the amount of time it takes for the limiter to stop after the audio signal falls below the threshold.
   If you are not experienced with limiters it is best not to change this setting



## RENDER DRYVOX AUDIO FOR MAGMA

To render your dry vocals, solo your DRYVOX in REAPER:

 Click the S button in the DRYVOX01 track:

 Make sure that no other tracks are soloed

Open the **Render to file** window:

Click File > Render

Hotkey: Ctrl + Alt + R



The **Render to file** window will open.

2

Choose the **Render Dryvox for** Magma Preset:

Click the Presets button

In the pop-up menu click:

 All Settings > Render Dryvox for Magma

	_	© Render to File X 2:11.498 2:11.796 2							
x U	11	Render:     Master mix     V       Render bounds     V     Last render settings       Entire project     V     Start: 0.000 (							
s	13	Output Options and format >							
s	14	Directory: C:\Users\mikelane\Document All settings > Render Dryvox for Magma File name: Dryvox Render Song Audio							
s	16	Render to: C:\Users\mikelane\Documents\Custom Song\Dŋvox.wav 1 Save preset							
s s	17 0	Options         Delete preset         >           Sample rate:         16000         Hz         Channels:         Mono         Full-speed Offline							
s s	19 20	Subse project sample rate for mixing and FX/synth processing     Resample mode (if needed): Better (192pt Sinc - SLOV)							
s	21	Multichannel tracks to multichannel files     Master mix: Dither Noise shaping							
S S	22 23	Output format: WAV v							
S	24 25	WAV bit depth: 16 bit PCM V Allow large files to use Wave64							
s	26	Do not include markers or regions  V Embed project tempo (use sparingly)							
8	27	Add items to new tracks in project when finished							



## Confirm your save settings and render your audio file:

- Set the output **directory**
- Set the file name
- Click the **Render 1 file** button



- The Render window will open and process your audio:
- Click the **Close** button

Repeat these steps for each of your dry vocal tracks.

## MAGMA CHECKLIST

Complete these tasks before you compile your custom song.

## OVERVIEW

A lot of work goes in to making a full band custom song. It is easy to miss a step or forget to complete something.

This checklist is a reminder of the tasks that you need to complete.

Work through this list to avoid many potential Magma errors.

Magma has a similar list that you can open and edit. Update the Magma list if you prefer. See page 782.

### AUTHOR REDUCTIONS

Use CAT to create reductions for Hard, Medium, and Easy. Review each reduction before proceeding to the next difficulty. This applies to drums, guitar, bass, and keys.

### CREATE BEAT TRACK

Use CAT to create a beat track. Make sure that you position the [end] text event correctly in your EVENTS track.

See pages 637 and 751.

### ADD DRUM FILLS

Author drum fills in the PART DRUMS track.

See pages 591 — 594.

## ADD DRUM ANIMATIONS

Use CAT to create drum animations. The CAT drum animations are better than the ones produced by Magma. See pages 367 — 369.

## ADD CHARACTER ANIMATIONS

Add character animation text events to each instrument MIDI. For example [play], [idle], [intense] and so on. For guitar and bass see pages 449 — 450. The process is the same for keys (but does not include the [play\_solo] text event).

## ADD CROWD ANIMATIONS

Text events in the EVENTS track control crowd animation. See pages 639 — 640.

## OVERDRIVE AND UNISON FOR INSTRUMENTS

Add Overdrive and Unison phrases for all instruments.

See pages 595 — 604.

## ADD VOCAL PHRASES

Add phrase markers to each vocal MIDI track. See pages 551, and 561 — 564.

## ADD VOCAL OVERDRIVE

Add Overdrive to PART VOCALS. HARM1 will have the same Overdrive as PART VOCALS. \*

\* There can be exceptions to this rule.

See pages 559 and 621.

## ADD PRACTICE SECTIONS

Add practice sections to the EVENTS track.

See pages 642 — 655.

## ADD SING-A-LONG NOTES

Use CAT to create sing-a-long notes for harmonies in the VENUE track.

See page 759.

### RENDER DRY VOCALS

Render stems for dry vocals if you have them. Otherwise render your own dry vocals or separated audio.

See pages 777 — 778.

For MIDI lip-sync / .milo dryvox see pages 583 — 584 and 799 — 800.

## NORMALIZE SONG AUDIO

Normalize your song audio for consistent in-game volume. See pages 775 — 774.

### RENDER SONG AUDIO

Render your song audio for Magma. See pages 771 —772.

## ALBUM ART

You will need the song album art to load into Magma. All album art is resized to a 256 x 256 pixel 24-bit .bmp file.

For consistency check the album art repository. Otherwise consider using the album art from existing customs. Other album art sources:

covers.musichoarders.xyz
 (use the Apple Music source)

■ fanart.tv

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## MAGMA SETTINGS

Review Magma settings before you build your first custom package file.

🔞 Magma: C3 Roks Edition v3

s Help

lse silence tracks by default

Analyze MIDI file for contents

Sign song as LIVE rather than CON

Override project file author

Magma has several options enabled by default:

- Use silence tracks by default
- Analyze MIDI file for contents
- Increase song version automatically
- Append ' rb3con' to file name
- Use ANSI encoding (default)
- Show toast notifications
- Override album art (\*.png\_ xbox)

There is typically no need to alter these options. A few of the options may need some further clarification though:

Silence tracks are enabled by default in Magma for drums, bass, guitar, and vocals. When players miss a note, the audio is not silenced. This is required for custom songs with a single audio source.





elect C3 CON Tools path

Magma will **analyze** your MIDI for errors. Not all MIDI errors are easily seen. It is strongly recommended that you keep this setting enabled.

File Path:

**ANSI** is the set of characters that you can use for song metadata. It includes the ASCII character set and 128 more characters. It is not the same as the UTF-8 character set.

MAGMA C3

Many Magma options are not enabled by default. Consider enabling the ones that you find most useful.

## **ENCRYPT**.MOGG FILE

Magma converts your custom song audio into .mogg files. These multitrack .ogg files are encrypted if you enable this option. You should encrypt your audio if you plan to upload your custom songs to RhythmVerse.

## APPEND SONG **VERSION TO** FILENAME

When you compile a custom song Magma keeps track of versions for you. Use this option to add the version number to the filename.

## enable .mogg encryption in Magma.

**DELETE RBA** 

Magma creates two custom

The .rbcon file is the one that

file. Audition files were used to

test songs for the Rock Band

Xbox. Enable this option to

file produced by Magma.

TO FILENAME

files on your PC.

Network. Most authors do not have audition mode on their

automatically delete the .rba

APPEND RB3CON

Use this option to add rb3con

to your custom song filename.

This makes it easier to identify

custom songs when you browse

file is a Rock Band Audition

you play on your Xbox. The .rba

FILE(S)

song files:

.rbcon file

.rba file

If you share your custom online you should

## USE UTF-8

Use this setting for metadata characters that are not included in the ANSI character set.

## **OPEN TO-DO LIST BY DEFAULT**

Enable this option to view Magma's To-Do list. Customize the list if you need to.

1.	Verify the accura
2.	Grab official *.png_xbox art file if applicable
3.	Chart reductions in all instruments
4.	Add drum fills
5.	Add overdrive for all instruments
6.	Add overdrive for vocals
7.	Create practice sessions [EVENTS]
8.	Draw sing-along notes in VENUE
9.	Record dry vocals for lipsync
10.	Render audio with RB limiter and count-in

#### PACKAGE CUSTOM 782

MAGMA: INFORMATION TAB

### Enter your song metadata into Magma.

### TITLE

Song title. Maximum length 99 characters.

### □ MASTER? CHECKBOX

Uncheck if the song is a cover version.

## ARTIST

Group or artist name. Maximum length 74 characters.

## □ ALBUM CHECKBOX

Uncheck this checkbox if the song is a single.

### ALBUM

The name of the album that the song originally appeared on.

Maximum length 74 characters.



## TRACK NUMBER

The song track number on the album from the "Album" field.

Number range 0 — 100.

## YEAR RELEASED

The year of the song release. Check the **re-release** box to add a re-release date.

## GENRE

The genre that best matches your song. This is subjective, but try to match your song to other songs in the Rock Band library.

### SUB-GENRE

The sub-genre that best matches your song. (Each genre has a list of sub-genres).

## LANGUAGES

Use the checkboxes for each language sung. Exceptions may include if a language:

- Only makes up a small part of the song, or
- Only uses a commonly understood word or phrase

## AUTHOR(S)

Enter the names of the authors who worked on the song.

### ALBUM ART

Click the ... button to load the song album art (see page 780).

### □ KARAOKE

Check if the song has separate vocals and backing stems.

## □ MULTITRACK

Check this box if the song has separate audio stems.

□ 2X

Check if the song has a 2x bass pedal chart.

## 

Check if the song is a conversion from another game.

## □ RHYTHM ON KEYS

Check if the song has rhythm guitar charted to keys.

## □ RHYTHM ON BASS

Check if the song has rhythm guitar charted to bass.

## □ CAT EMH

Check if your CAT reductions are un-altered.

### □ EXPERT ONLY

Check if the song only has the Expert difficulty authored.

### □ ENCRYPT

Check to encrypt the song audio.

### FILE PATH

The save directory and filename for your custom song.

783
Add your song audio files to Magma.

## **OVERVIEW**

In this tab you tell Magma where to find the audio tracks for your song.

For multitracks link each instrument to their respective audio stem.

If you have a single audio track:

- Link each instrument to a silent audio track
- Link your mixed audio track to the BACKING track

Magma includes silent audio tracks. To find them:

 Browse to your Magma installation folder and then click on the audio folder

There are **44.1** and **48kHz** silent audio files:

- Mono
- Stereo
- 16 bit
- 24 bit

😢 * Magn	a: C3 Roks Edition	v3 *	IV	IAGINA. AU	
File Op	tions Help				
INFOR	MATION	AUDIO GAME DATA		PAN	ATTENUATION
	DRUM MIX	Kit -			
	Kit	audio\stereo44.wav		Stereo	0.0 🖨
	Snare				
	Kick				
	BASS	audio\stereo44.wav		Stereo	0.0 🜩
	GUITAR	audio\stereo44.wav		Stereo	0.0 🜩
	KEYS	audio\stereo44.wav		Stereo	0.0 ≑
	VOCALS	audio\stereo44.wav		Stereo	0.0
SOLO/HAR	MONY 1 Dry Vocals	C:\Customs\Custom Song Dry Vocal.wav			
🗌 HAR	MONY 2 Dry Vocals				
HAR	MONY 3 Dry Vocals				
	BACKING	C:\Customs\Custom Song Render.wav			
	CROWD			0	
	Song Preview:	0 🔹 : 30 🔹 : 0 💠 Play		Recommended	Drum Mix
G	Song Length:	0:00 Audio Quality: 05 (default) 🖨		[mo	Add to MI

Note: All your audio files must match. They must have the same **sample rate** (kHz) and **bit depth**. Mixing the **number of channels** (stereo or mono) is not a problem. In the screenshot above we are using a single mixed audio file. It is the 16 bit, 44.1 kHz stereo audio file that we rendered with REAPER (see pages 771 — 772). The silence files are also 16 bit, 44.1kHz stereo files.

## DRUM MIX

If your song has a drum part:

 Check the drum mix checkbox

**Drums** has three potential file fields. The Drum Mix drop-down menu unlocks the snare and kick options:

- **Kit** use this option for a single mixed audio file
- Kit & Snare use this option for separate kit and snare stems \*
- Kit & Kick use this option for separate kit and kick stems \*
- Kit, Kick & Snare use this option for separate kit, kick and snare stems \*

\* The kit track usually contains an overhead recording of the rest of the kit.

DRUM MIX: KIT
t
ıdio∖stereo44.wav

## SILENT FILES

If you have a single mixed audio file for your custom audio - use a silent file in the **Kit** field:

- Click the red button with the ellipses (...)
- Browse to your Magma installation folder
- Open the audio folder
- Select the stereo44.wav file

**Tip**: Right click the file field to choose a silent file from the context menu:

Clear
Сору
Paste
44.1 kHz mono silence
44. 1 kHz stereo silence
48 kHz mono silence
48 kHz stereo silence
44.1 kHz mono silence (24-bit)
44. 1 kHz stereo silence (24-bit)
48 kHz mono silence (24-bit)
48 kHz stereo silence (24-bit)
Blank dryvox

### STEMS

If you have drum stems:

- Click the red button with the ellipses (...)
- Browse to and select your stem file(s)

For example, for three drum stems browse to each stem:

DRUM MIX	Kit, Kick & Snare
Kit	C:\Customs\kit.wav
Snare	C:\Customs\Snare.wav
Kick	C:\Customs\kick.wav

**Note**: Silent files are a substitute for stems. When a silent file is muted in-game it does not impact the game audio output.

## MAGMA: AUDIO TAB (CONTINUED)

Bass: Check this box if you have a bass guitar part.

Guitar: Check this box if you have a guitar part.

Keys: Check this box if you have a synth, keyboard, **or other track** in PART KEYS.

 Add a silent file, or multitrack audio file to the unlocked file fields

BASS	audio\stereo44.wav
GUITAR	audio\stereo44.wav
KEYS	audio\stereo44.wav

The screenshot above shows the setup for bass, guitar, and keys with a mixed audio file.

## □ BASS, GUITAR, ... □ VOCALS AND HARMONIES

Vocals: Check this box if your song has vocals.

 Add a silent file, or a mixdown of your lead and harmony parts

#### SOLO/HAMRONY 1 Dry Vocals:

 Add a .wav file of your lead vocal \*

\* This vocal should have no added effects. Magma uses this file for lip-sync animations. It is not included in your final song package. This file should not include any background vocals.

> Refer to pages 579 - 580 to review your options for a lead dry vocal track.

To render dry vocal see pages 777 — 778.

If you do not have a lead vocal stem:

- Record your own dry vocals
- Use MIDI lip-sync .milo file
- Use a separated vocal track \*
- \* For songs that have lead vocals only. Accurate animations are not guaranteed.

#### HARMONY 2 Dry Vocals:

 Add the dry vocal .wav file for HARM2

This option requires at least two vocal parts. You will need to author PART VOCALS, HARM1 and HARM2.

#### HARMONY 3 Dry Vocals:

 Add the dry vocal .wav file for HARM3

This option requires that you enable HARMONY 2. If HARM2 and 3 are the same (just different pitch) then use the same file.

## □ BACKING

**BACKING**: Enabled by default.

If you have a single mixed audio track:

- Add your rendered mixed audio track
- To render your SONG AUDIO

Add your backing track \*

track see pages 771 - 772.

- If you have multi-tracks:
- \* This track includes any audio that is not in the bass, drums, guitar, keys, and vocals tracks.

### □ CROWD

**Crowd**: If you have multitracks:

- Add the audio track for the crowd (if there is one) \*
- \* This is mostly found in live recordings.

Add a silent file for songs with only one instrument authored.

## SONG PREVIEW

The song preview controls let you to set the start point for the in-game song preview.

You can set a time in minutes. seconds, and milliseconds:

Set the song preview start time

Song previews are 30 seconds long:

 Check the Song Length time to make sure that the preview does not run past the end of the song

Song length is set by the longest audio file in the project (not including drv vocals).

Press the **Play** button to hear the song preview



#### The default audio quality is 5.

## AUDIO OUALITY

For Wii and PS3 versions of Rock Band 3 set the audio quality to 3.

Wii Mode sets the maximum quality setting to 3. Press Ctrl + W to enable Wii Mode.

### PAN/ATTENUATION

You can pan mono audio left and right. Values range from -1 (all left) to 1 (all right). Use this settings for final tweaks to your stem mix.

Use attenuation controls if your stems are too loud in-game. Adjust quiet stems in REAPER. Attenuation reduction ranges from 0 to -10db.

## **REC. DRUM MIX**

The **drum mix** selection defines your recommended drum mix value. Magma updates text events in PART DRUMS for you by default.

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### Set song game data and instrument difficulty tiers.

### MIDI PATH

Set this path to the MIDI file that you authored:

- Click the yellow button with the ellipses (...)
- Browse to your exported project MIDI file

To export your project MIDI file see pages 769 - 770.

## **AUTO-GENERATION** THEME

If you did not author a venue choose a theme from the dropdown menu:

- Aggressive metal
- Arena Rock
- Dark Heavy Rock
- Dusty Vintage
- Edgy Prog Rock
- Feel Good Pop Rock

Magma: C3 Roks Edition v3			MAGMA: GAME DATA
File Options Help		-	
INFORMATION	DIO GAME DATA	-¥	
		_	
MIDI			Song ID Version
AUTOGENERATION THEME	Arena Rock 🔹		1 🖨
	EXPORT TEST CLEAN		Difficulty
ANIMATION SPEED	Medium (100-160bpm) -		Drums: 🛛 🍽 🖉 😁
HOPO THRESHOLD	170 (default)		Bass: •••••••
VOCAL GENDER	Male •		Pro Bass: •••••••
VOCAL PERCUSSION	Tambourine •		Guitar: •••••••
VOCAL SCROLL SPEED	Nomal - 2300 -		Pro Guitar:
VOCAL GUIDE PITCH VOLUME	-3.0 - TUNING CENTS 0 - ()		
VOCAL TONIC NOTE	· · · · · · · · · · · · · · · · · · ·		Vocais:
MUTE VOLUME VOCALS	-12 🖨 MUTE VOLUME -96 🖨 🔇		Keys: 🔴 🔴 🍽 🔴 🛑
SONG RATING	4 - Unrated 🔹		Pro Keys:
DRUM KIT SFX	Hard Rock Kit (default)		Band: 🛛 🕶 🕶 😜 🌍
SOLOS	DRUMS GUITAR BASS  KEYS VOCAL PERCUSSION		Check for tempo map
PRO GUITAR TUNING			Auto-generate 'fake' pro-keys
	0 0 0 0		Auto-generate keys animations
File Path:			BUILD SONG

■ Garage Punk Rock Psych Jam Rock

- Slow Jam
- Synth Pop

## ANIMATION SPEED

This setting controls in-game

character animation speed:

Select the gender of the singer

Male

VOCAL

percussion:

PERCUSSION

Select an instrument for vocal

in your PART VOCALS track:

VOCAL GENDER

- Medium (100 160 BPM) Female
- Fast (> 160 BPM)

■ Slow (< 100 BPM)

The default is a medium tempo. Adjust the tempo to match the BPM of your song.

## HOPO THRESHOLD

This sets the threshold for

HOPO notes in milliseconds:

- Tambourine
  - Cowbell
  - Hand clap

This sets the percussion sample played in-game by the lead vocal character.

## **VOCAL SCROLL** SPFFD

This sets the scroll speed for lyrics in-game. The default setting is Normal - 2300. If lyrics crowd the vocal HUD in your song, you can set the scroll speed to Fast - 2000.

## **VOCAL GUIDE PITCH VOLUME**

This sets the guide pitch volume for the Audition and Training modes. The value range is:

■ -10.0 to 0.00

The default value of -3.0 works for most songs. Adjust the volume if you have particularly loud or soft vocal stems.

Note: To use Magma themes do not place any camera or lighting cues in the VENUE track. To create your own Magma themes see pages 663 -676.

- 90
  - 130
  - 170 (default)
  - **250**

For example, if you have a song that does not show 16th note HOPOS at the default threshold:

Increase the threshold

#### PACKAGE CUSTOM

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## MAGMA: GAME DATA (CONTINUED)

Tuning cents and vocal tonic notes are not used very often.

## TUNING CENTS

Tuning cents are not needed very often. They adjust the pitch of the whole vocal MIDI up or down by small amounts. This is for songs that are slightly off-key. Only use this feature if you are certain that your song needs it.

A value of 50 adjusts the vocal pitch up a quarter note. Minus 50 adjusts the pitch down a quarter note. It is best to adjust tuning cents in intervals of 10. The human ear cannot tell the difference between one or two tuning cents.

You should not use a value greater than 50 or less than -50. If you need to do this, it means that your vocal chart is wrong.

To test tuning cents, play your song on your Xbox. Use practice mode and turn on the pitch guide. Adjust the pitch in intervals of 10 until the pitch is correct.

## VOCAL TONIC

Enable the Vocal Tonic Note checkbox to view a more detailed vocal HUD in-game.

This will make harmony parts easier to read.

Very few customs and Rock Band Network songs use this HUD. It is best not to use this feature unless you are sure how to use it.

The tonic note represents the key of a song. The tonic note values are:

Many thanks to author Orange Harrison for information on Tuning Cents, Vocal Tonic Notes, and Mute Volume Vocals. ■ 1 - C#

■ 0 - C

- 2 D
- 3 D#

■ 4 - E

■ 7 - G

- 5-F
- \_ .
- 6 F#

■ 8-G#

- 9-A
- 10 A#
- 11 B

## DRUM KIT SFX

Drum kit SFX sets the drum sounds used before the drum track starts and for drum fills. The kit options are:

- Hard Rock Kit (default)
- Arena Kit
- Vintage Kit
- Trashy Kit
- Electronic Kit

Check the sound of the kits in-game. Pick the kit sound that best fits your custom song.

can specify a volume between -96.0 and 0. \*

\* Do not use numbers above zero. Missed notes are not muted when the volume is set to zero.

MUTE VOLUME ...

These two controls reduce the

MUTE VOLUME VOCALS -12 🚔

MUTE VOLUME -96 🖨 📿

The default in-game value for

instruments is -96.0. For vocals

it is -12.0 For each control you

volume of a **stem** when the

player misses a note:

For the singer, this will keep the vocal track playing (even if the singer fails).

If your song has 'fake stems' (produced by frequency banding):

 Adjust the Mute Volume control to make the game mute stems less harshly

## SONG RATING

Give your song an age appropriate rating.

The song rating shows the age rating for your song in-game:

- 1 Family Friendly
- 2 Supervision
  Recommended
- 3 Mature
- 4 Unrated

**Family Friendly** means that the song should be suitable for the whole family to play.

#### Supervision Recommended

means that lyrics or themes are not suitable for pre-teens.

Songs rated **Mature** contain strong explicit content. This includes explicit language, violence, and sex.

The **Unrated** rating is from the Rock Band Network. In-game it is treated the same as Mature.

## MAGMA: GAME DATA (CONTINUED)

Click checkboxes for solos and set a song ID.

## SOLOS

Check the boxes for the solos in your song. This identifies solos for use with game goals and challenges.

Vocal percussion counts as a solo. Make sure that instrument solos have solo markers in your MIDI project. Do not check a box for an instrument that does not have a solo.

Many thanks to author AddyMills for providing this information.

## PRO TUNING

Pro tuning lets the game know the tuning for Pro guitar and bass parts.

This is only needed if your Pro chart uses chord notation. The default tuning is below:

- E Standard
  - E A D G B E 0 0 0 0 0 0

#### For each string, raise or lower the numbers to change the tuning. For example, 1 raises the tuning for a string by half a step. Minus 1 lowers the tuning by a

Other common tunings:

half step.

- **Drop D** D A D G B E -2 0 0 0 0 0
- **D Standard** D G C F A D -2 -2 -2 -2 -2 -2 -2
- Drop C C G C F A D -4 -2 -2 -2 -2 -2
- Open G D G D G B D -2 -2 0 0 0 -2

## Many thanks to PimkinGuts92 for this information.

## SONG ID

It is important to give your song a unique ID. This is so that it does not conflict with any other Rock Band songs.

The maximum ID length is 25 characters.

For more information read the topic on page 798.

## VERSION

Use the version number to keep track of your song versions.

**Note**: By default the version number increases each time you compile your custom.

## DIFFICULTY

The difficulty rating is a tiered. Click a difficulty for each authored instrument:

- Warmup ●●●●● ●
- Apprentice ●●●●●
- Solid ●●●●●
- Moderate ●●●●●
- Challenging ●●●●●
- Nightmare ●●●●●●
- Impossible ●●●●● ●

Warmup is the default difficulty. Click the red dot to select the Impossible difficulty.

The band difficulty should be an average of the other parts.

## FAKE PRO KEYS

Use this checkbox if you have authored 5-lane keys but not Pro keys.

Magma will copy 5-lane keys to Pro keys to pretend that there are Pro keys.

## **KEYS ANIMATIONS**

Use this checkbox to let Magma auto-generate keys animations.

## FILE PATH

Set a song version and file path. Check the box for fake Pro keys and keys animations if needed.

Click the blue button with white ellipses (...) to set the file path for your custom song.

## **BUILD SONG**

Save your Magma project:

- Click File > Save
- Click the Save button

Click the **Build Song** button to compile your custom song.

Select a path and filename

Make sure that each version of your custom has a unique name and version number.

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## MAGMA WALK-THROUGH

### INFORMATION

Now that we are familiar with all the Magma forms, let's take a look at a typical custom song. These screenshots show a full band custom with drums, guitar, bass, and vocals. It does not include a 2x drum part or harmony vocals.



### AUDIO

This custom has a single mixed audio file for the backing track.

It is rendered to include the audio samples from the COUNT-IN track in REAPER. The dry-vox track is a separated audio track.



## MAGMA WALK-THROUGH (CONTINUED)

## GAME DATA

The Song ID is generated from the song filename.

To review Song ID read the topic on the facing page.



# MAGMA: SONG ID

To prevent duplicate song IDs, use your authorname, songname, and version in your filename.

## OVERVIEW

Unique IDs are used for onlineplay and to preserve scores in Rock Band 3. Authors used to have a unique **author ID** issued to them, which formed part of a unique song ID. When the limited number of author IDs ran out this caused issues. The result was that many authors could not take part in the author ID system.

Magma no longer uses author IDs. Instead Magma generates a unique **song ID** from the filename of the song.

## SONG ID

The new **Song ID** system is easy to use. In the **Game Data** tab type the filename for your song.

It is recommended that you use the following format:

 authorname\_songname\_ version#

For example:

■ doa\_ComingAround\_v1

To generate a unique Song ID click the **New ID** button.

## Song ID 2135879453 New ID

The same filename will always generate the same Song ID. As long as the author name or song name is unique there should not be any duplicate song IDs.

**Note**: Magma can add the version number to your song filename automatically. To enable this option click:

 Options > Append song version to file name.

Use **authorname\_ songname\_version#** to avoid any chance of duplicate song IDs.

**Note:** If two or more songs collide, only one of them shows up in the game.

### Use silence tracks by default Analyze MIDI file for contents Override project file author Delete .rba file(s) after converting Sign song as LIVE rather than CON Use unique numeric song ID Increase song version automatically

Append song version to song ID Append song version to file name Append '\_rb3con' to file name

## INJECT ONYX LIP-SYNC / .MILO INTO CUSTOM SONG

## BUILD CUSTOM SONG

Follow these steps if you used Onyx to create a .milo lip-sync file for your custom song.

**Note**: Your lip-sync file must be in the same folder as your REAPER .mid file.

In Magma:

Click Options > Advanced
 Settings > Override
 animations file (\*.milo\_xbox)

This setting adds your lip-sync to your custom song when you compile it.



After you build your custom song your lip-sync will be ready to review in-game!





When you have completed all three tabs in Magma:

1



The **Building your song** window will open.

If you are using an Onyx lip-sync file you will notice that Magma skips vocals auto-gen.

 Wait for the process to complete. This may take several minutes.

If you experience errors in Magma, turn the page. Common Magma errors are discussed in the next topic.

When the process is complete you can play-test your custom!

Click the **Build Song** button

## MAGMA ERRORS

Troubleshoot compile errors in Magma.

## TICK 0: GOT A TEXT EVENT ...

Tick: 0. Got a text event, but had no current track to put it into! str = [ProFilm\_a.pp], type = 1

This error means that the Venuegen LIGHTING track is not muted.

 Mute the LIGHTING track to fix this error

## CONFUSED BY VOCAL PHRASE ...

Confused by vocal phrase overlap around [xx:x:xxx]

This can refer to vocal phrase or other note overlap.

• Check vocal phrases and notes around the timestamp

**Note:** The timestamp may not be accurate. There is an overlapping note somewhere in your vocal chart(s).

### TIME DIVISION MUST BE 480 ...

Time division must be 480 ticks per quarter

The time division of 480 ticks is set in REAPER during the RBN Tools installation.

- Reinstall the RBN Tools
- Change the setting back to 480 ticks

You may find that a reinstall of the RBN Tools does not correct this issue. In this case change the setting in REAPER:

- Press Ctrl + P to open
  REAPER Preferences
- Select MIDI in the left hand pane (under Media)
- In the Ticks per quarter note for new MIDI items field enter: 480
- Click the **OK** button

## FOUND EVENT(S) AFTER THE ...

Found event(s) after the [end] event

The [end] event is a text event in the EVENTS track. It is part of the C3 Template.

The [end] event marks the end of your custom song. Position it after all MIDI notes in your project.

 Move the [end] event to the correct position

There should not be any tempo markers or MIDI notes after the [end] event.

## PART REQUIRED BUT NOT FOUND

Part [track] required but not found

There are a couple of reasons why Magma cannot find a required track:

- The track name text event is not in the correct position
- The track name text event no longer exists
- The track is muted in REAPER but expected by Magma

In the first two cases, open the problem track. Look at the text events at the start of the track. The track name should exist as a text event. The text event type should be Track name. If the text event does not exist:

#### Create the text event

- Enter the track name in the text field
- Set the **Type** to: Track name
- Position the text event at 1.1.00 (the start of the track)

dit Text E	vent
Text:	PART GUITAR
Туре:	Track name
Position	1100

For the later issue unmute the problem track:

 Click the M button in the track controls to unmute the track



## GEMS CANNOT APPEAR ...

Gems cannot appear before 2.50 seconds into the song

This error happens when there are notes in the first two and a half seconds of the song.

This is not allowed.

Fix this issue with one of the following methods:

 Add an extra measure (or more if needed) to the count-in \*

> \* Refer to the steps 3 and 4 on pages 307 — 308 for an example.

 Export your MIDI. Create a new project. Set the countin BPM. Import your MIDI at the end of measures one or two (depending on how much extra space you need).

## MAGMA ERRORS (CONTINUED)

## GEM ... DURATION ... MAX IS 120

Gem at [xx:xx:xx] in ... difficulty has a duration of 160 ticks; max is 120

Check your MIDI for sixteenth note triplet gems. A sixteenth note triplet is 160 ticks. A sixteenth note is 120 ticks.

Try quantizing the **selected** notes to a smaller size, for example sixteenth notes:

- **Select** the problem notes
- Press **Q** to Quantize
- Use the settings in the screenshots below:



If quantizing notes does not fix the issue try the following:

- Try deleting the problem notes and re-chart the section. Use a note size of a sixteenth note (or smaller if needed). Use the grid size of your choice
- Look for other issues in your project. For example, a time signature change that is not aligned correctly. This can appear to "eat" measures in REAPER and produce note length problems in Magma

# CORRECT MARKER

To review drum roll markers see pages 353 - 354.

## TOO FAR PAST ....

Roll extends too far past last gem ... at [xx:xx:xx]

**ROLL EXTENDS** 

A drum roll marker is too long. The roll marker should:

- End at the start of the last note of the roll, or
- Extend a little beyond the last note of the roll



## OTHER MAGMA ERRORS

For other Magma errors I recommend searching online for solutions. Follow links to: rhythmgamingworld.com/ forums/

When asking for help with Magma errors please use the Copy to Clipboard function.

## **ONLINE HELP**

For online help visit the C3 forum at:

#### rhythmgamingworld.com

Stay connected on the RhythmVerse Discord.

MAGMA ERROR SEARCH RESULTS Main Gaming world https://rhythmgamingworld.com/forums/topic/need... \*

#### Need Help with Magma/MIDI Errors - Rhythm Gaming World

Web May 29, 2020 · ERROR: MIDI Compiler: c:/users/steve/desktop/rb charting/magmac3v332/test/mr. mom 5.7.mid (PART REAL\_KEYS\_H): File: ...

Rhythm Gaming World

Solution for Invalid Author ID in Magma	Apr 17, 2018
I'm having some errors with magma.	Apr 28, 2015
Error in Magma C3	Nov 26, 2014
Magma: C3 Roks Edition v3.3.2 [07/28/15]	Jun 4, 2013
See more results	

Building your song	MAGMA ERROR
Building your song	· · · · · · · · · · · · · · · · · · ·
Everything looks good, continuing	
Nemo's MIDI AutoGen process started. Added drum mix events successfully. Nemo's MIDI AutoGen process completed.	
Loading MagmaCompilerC3.exe Reading the archive Project Compiler: Reading project 'C:\Users\mikelane\IDrive-Sync\Cu: \Samarithan\Samarithan.rbproj' Project Compiler: Entering Phase 1 of 5 Metadata Compiler: Starting Metadata Compiler: Done.	stoms\Candlemass
Project Compiler: Entering Phase 2 of 5 MIDI Compiler: Starting ERROR: MIDI Compiler: (PART DRUMS): Drum fill ending at [20:1:000 at the same tick; lane 5 ends at [20:1:120] MIDI Compiler: Done	0]: lanes do not all end
ERROR: Project Compiler: Midi compiler failed.	- I
Copy to Clipboard	CLOSE

- Export your project MIDI from REAPER.
- Normalize your song audio file.
- Render your audio for Magma.
- Render dry vocals for Magma.
- Enter song metadata into Magma.
- Add silent tracks and backing track.
- Add instrument and song ratings.
- Package your custom in Magma.
- Inject lip-sync .milo into packaged custom (optional).
- You can use Author ID if your ID number is less than 9999.
- Each version of your custom must have a unique name and version number.



Title Updates 4 and 5

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- Add customs to jump drive
- Play-test custom song

## We need to complete a few small steps to play your custom song on the Xbox 360.

This is the final chapter of the book, and my favorite part of the custom authoring process. I spend plenty of time with the RBN Preview window in REAPER. But, there's nothing like playing your custom song on the Xbox. It feels incredible to play your custom in-game for the first time!

In this chapter you will learn to:

- Format jump drives for the Xbox 360
- Add Title Updates to your jump drive(s)
- Copy custom songs to your jump drive using Nautilus
- Review your custom song charts for common mistakes

If you've worked through this book and made your first custom, congratulations! I hope that this book was helpful in guiding you through the process.

## GETTING STARTED

What do you need for custom and online play on the Xbox 360?

### XBOX 360

A modded Xbox 360 is not required. Your Xbox Operating System must be dated 04/30/2015 (or newer).

### JUMP DRIVE: 1GB

You only need a small jump drive for online play. We use this drive to store **Title Update #5**.

## JUMP DRIVE: 32GB

This jump drive will store **Title Update #4** as well as your custom songs.

## TITLE UPDATE 5

Title Update 5 was the last update for Rock Band 3. It included online play and access to the online store to purchase DLC. It **does not support playing custom songs**.

This update is in the downloadable version of Rock Band 3 and the MadCatz game disc.

## TITLE UPDATE 4

Title Update 4 is the update used to play custom songs.

Use Nautilus to copy Title Update files and custom songs to your jump drives.

### EA GAME DISC

NAUTILUS

The EA Rock Band 3 game disc supports playing custom songs.

**Title Update 4** is included on this disc.

**Note**: You do not need to download TU4 or TU5. They are bundled with Nautilus.

# FORMAT JUMP DRIVES

### Format your jump drives one at a time. If you do not play Rock Band online, you only need to format a single large jump drive.

## **OVERVIEW**

You can format your jump drive(s) on your Xbox 360 or on your PC.

**Note 1**: Jump drives need to be formatted to the FAT32 file system. 32 GB is the largest partition you can create using Windows Disk Management. With third party software you can create a 2TB partition.

Note 2: Magma outputs lossy audio at a variable bit rate. A 32 GB drive should be able to store enough custom songs to reach the Rock Band 3 song limit.

## FORMAT ON PC

Plug your jump drive(s) into your PC and then follow the steps below for each drive.

Open Windows Explorer:

- Press the Windows + E keys
- Right click your jump drive \*

\* Make sure that you select the correct drive

- Select Format from the context menu
- Check that the **File system** is set to FAT32
- Type a new drive name in the Volume label text field if needed
- Click the Start button
- A warning will dialogue open:
- Formatting will erase ALL data on this disk
- Click the **OK** button

#### RECOMMENDED

## FORMAT ON XBOX

Plug your jump drive(s) into your Xbox 360 and then follow the steps below for each drive:

Navigate to:

- Settings > System > Storage
- Select USB Storage Device \*
  - \* If more that one USB drive is found select the correct USB drive. Your drive may show up as 'Unformatted'
- Select Format
- A warning dialogue opens:
- This will remove all content on this device. Do you want to continue?
- Select Yes

Proceed to the TU5 on Xbox topic on the facing page.

## TITLE UPDATE 4 AND TITLE UPDATE 5

Add TU4 and customs songs to your large jump drive. Add TU5 to your small jump drive.

## **OVERVIEW**

For online play copy **Title** Update 5 (TU5) to your small jump drive. For custom songs copy Title Update 4 (TU4) to your large jump drive.

Once your jump drives are set up make sure that you delete TU5 from your Xbox.

TU5 is read from your online play jump drive when you use it. Otherwise you will use TU4 on your custom play drive.

Do not plug your online play and custom play jump drives into your xbox at the same time.

## **TU4 & 5 ON PC**

Complete these steps for each jump drive:

- Open Nautilus
- Click the **RBtoUSB** button
- The RBtoUSB window will open:
- Click File > Open USB Drive
- Select your jump drive from the Drive Selector window
- Click the **Tools** menu

To setup your custom song drive click Copy TU4 to drive

To setup your online play drive click Copy TU5 to drive

~		R	RBtoUSB	
🕒 RB	toUSB			
File	Tools	Options	Help	
Packag	Se	arch (	Ctrl+F	
	Re	ename drive		
	Copy TU4 to drive			
	C	opy TU5 to d	drive	

Plug your small jump drive (for online play) in to your Xbox 360.

**TU5 ON XBOX** 

- Settings > System > Storage
- Select Hard Drive

Navigate to:

- Select Games and Apps > Rock Band 3
- Select Rock Band 3 Title Update #5
- Select Move
- Select your online play jump drive (USB Storage Device)

Next: Delete TU5 from your Xbox. Navigate to:

- Hard Drive > Games and App > Rock Band 3
- Delete Rock Band 3 **Title Update #5**

## ADD CUSTOM SONGS TO YOUR JUMP DRIVE

0

## Add custom songs to your jump drive with Nautilus.

Plug your (customs play) jump drive into your PC and follow these steps:

- Open Nautilus
- Click the **RBtoUSB** button

The RBtoUSB window will open:

- Click File > Open USB Drive
- Select your jump drive from the Drive Selector window

Open File Explorer:

- Browse to your custom song file location
- Drag and drop custom song files from File Explorer to the RBtoUSB window

Close your jump drive:

- Click File > Close drive
- Eject your jump drive from Windows

Your custom song(s) are now ready to play on your Xbox 360!

File	Tools	Options	Help		
Package	Name			File Type	File Size
Candlem	ass - San	narithan		CON	7.53 MB
Added 1 f			_		

# CUSTOM SONG REVIEW

Playtest and review your custom song in-game to find and fix any mistakes.

## OVERVIEW

Harmonix had strict standards for songs submitted to the Rock Band Network (RBN). You can review these standards here:

#### http://docs.c3universe. com/rbndocs/index. php?title=Playtest\_ Process

These standards are a great reference for all custom song authors. They provide:

- A list of the main authoring issues
- A longer explanations of the issues
- Issues by instrument and difficulty
- How to playtest your custom

This chapter contains a condensed version of the RBN standards.

## AUDITION MODE

Harmonix used Audition Mode to review songs for RBN. It allowed play-testers to:

- Auto-play tracks
- Play local multiplayer
- Timestamp issues for feedback

Today, you need a modded Xbox and Rock Band 3 Enhanced Edition to use Audition Mode:

#### https://www.youtube.com/ watch?v=BGhHXJSnIFY

Without Audition Mode you can do the following:

- Playtest songs on Xbox 360
- "Auto-play" songs on Xbox
  360 (turn on No Fail)

## PLAY-TEST

Playtest each instrument at each difficulty if you can.

Note: You should not be playing at all times or using autoplay at all times. You will likely miss things while you play. If you only auto-play a song you might not get a feel for the song. Even when gems look right you may notice something wrong when you play it.

If you need to you can slow down very difficult parts in REAPER. To do this use the Rate slider in the Transport Bar:



This will allow you to slow down complex parts, and play along with them.

# NON-INSTRUMENT REVIEW

Check your tempo map, audio, venue, animation, and song metadata.

## CHECKLIST

Non-instrument review checklist:

- Are all playable instruments clearly heard in the mix?
- Is the tempo map accurate?
- Do camera and lighting cues look good?
- Does the animation speed of band members look good?
- Is the crowd animated?
- Are the difficulty ratings for the band and instruments accurate?
- Do instrument stems cut out of the mix properly when they are not being played?

815

## SONG SETUP

Each song should have a two measure (3 second) **count-in**. A count-in is not needed if the song has a playable count-in.

It is very important that each player can hear the **audio** that corresponds to the gems they are playing.

It is critical that the **tempo map** is accurate. If the tempo map drifts away from the audio too much it ruins the gameplay of the song. Gems should always line up with the music.

Having the **crowd clap** along to the beat can be a nice addition to a song. It feels awkward if it is not used correctly though. For example, in a quiet, mellow part of the song.

## ANIMATION

If your **venue** has too many **camera cuts** it will look jerky. In this case reduce the number of camera cuts.

Make sure that band member **animation** is appropriate for the song. Animations that are too fast or too slow won't look right.

**Crowd animation** is also important. The most obvious issue is when the crowd is not animated at all.

## DIFFICULTY

Difficulty ratings are given to each instrument in the song and also to the band (page 794).

Songs are rated on the Expert part for each instrument. If a song is extremely easy it should go in warmup. If it is one of the hardest songs in the game it should go in impossible. While this is a subjective judgement it should not be ignored.

Compare your custom song to other songs already in the game. If you can find a song that is like your custom this will make the process easier.

There is no equation to determine song difficulty. But certain things tend to show up in more **difficult songs**:

- BASS
- Fast notes
- Lack of Overdrive in intense sections (especially guitar solos)
- Chords

## DRUMS

- Many fast rolls
- Long disco flip sections
- Off-beat kicks
- Gems that are not consistent \*
- \* Sections that do not use one constant cymbal, for example

### VOCALS

- Lots of short slides
- Lack of space to breath or activate Overdrive
- Large vocal range (lowest to highest notes)

## GUITAR

- Fast notes that are not HOPOs
- "Snakes" (notes that move up and down the frets quickly)
- Frequent Overdrive in difficult sections
- Very difficult guitar solos

## BAND

- Overall difficulty of instruments
- Difficult sections played by the band together (or not)
- Lack of Overdrive during difficult sections
- Unison phrases in difficult sections

XBOX SETUP AND PLAY-TESTING 816

## PLAY-TEST: GUITAR AND BASS

Check authoring, playability, animation and BRE.

## CHECKLIST

Key things to look out for include:

#### Authoring

- Is authoring consistent on all difficulties?
- Is Expert a literal rhythmic transcription of the song?
- Is intent authored (not sloppiness)?
- Are HOPOs functional and reasonable?

#### Playability

- Can you reasonably whammy all sustains?
- Is the difficulty acceptable for each difficulty?

## EXPERT & HARD

**Chords** should remain as **consistent as possible**. For example, author an E power chord the same way for the whole song. Do not author other chords using the same gems (unless you have run out of chord gems to use).

Author the intention of the guitarist. This means charting to the MIDI grid. Note: The solo in Blue Collar Man is a rare exception. Trying to play the sloppiness of the actual part is usually not fun at all.

Make sure that **HOPOs** make sense in your song. **Forced HOPOs and forced strums** can have a negative impact on gameplay. Make sure that **repeating gems** are not HOPOs. For example an Orange gem followed by an automatic HOPO Orange gem.

Do not author **slow guitar slides** as a single long sustained note. Use multiple sustains with HOPOs instead.

## MEDIUM & EASY

**Medium** should focus on Green, Red, Yellow, and Blue gems.

The focus for **Easy** is Green, Red, and Yellow with no chords.

Sustain notes can be a problem on Medium and Easy. Sustains are often short, with no functional value. If you cannot reasonably whammy these sustains, remove them.

Make sure that the **difficulty** is appropriate. The game should be playable and enjoyable on these difficulties. SOLOS AND BRE

The light blue solo section (ingame) should begin and end with the guitar or bass solo.

There are two exceptions to this rule:

- When a solo is at the end of the song
- When a solo is directly before a BRE

In these cases, the solo should end just before the end of the song (even if the solo is still playing). It is important to end the solo this way - if not:

- The solo bonus may not display correctly
- The solo bonus will cover up the BRE counter \*
  - \* This is especially an issue for short BREs.

## ANIMATION

Guitar and bass animations are not always 100% accurate to what is being played. But they should look real enough. The most important thing is that they are animated and not just standing still.

You will want to check how the bassist is playing their **bass**. Bass players use their **fingers** or a **pick** to pluck the strings. For example, the bassists in Iron Maiden and Rush use their **fingers**. The bassists in Greenday, Kiss, and Motorhead use a **pick**. Other bassists use their thumb and fingers to **slap** the bass.

**Drum** animation is a bit more realistic. Actions for each part of the kit have their own unique animations. CAT does an excellent job in creating animations that match the Expert drum chart.



Check solos at the end of the song, or before a BRE. Check bass player right hand animation.

SOLOS, BRE, AND

 Guitar solos should not end right before a BRE
 If there is a BRE does it function correctly? Is there at least one gem after the



Are the guitarist animations

■ Is the bassist plucking the

strings correctly?

Are solos placed correctly?

Are they the right length?

Solos and BREs

BRE lanes?

Animation

correct?

## PLAY-TEST: DRUMS

Check authoring, playability, and BRE.

## CHECKLIST

- Key things to look out for:
- Are drums authored to the correct pads?
- Are flams authored as two gems on Expert?
- Are disco beats authored correctly?
- Does pad movement feel correct?
- Is Hard scaled back properly from Expert?
- Remove kicks from drum fills on Hard
- Un-flip disco beats on Hard
- Allow enough space for double crash hits on Hard
- Medium should contain the crucial parts of the song and still be easy to play
- No three limb hits on Medium

- Rolls should be playable with one hand on Medium
- No kicks or snares between time keeping notes on Medium
- Allow enough space after a crash for the player to reset their hand position on Medium
- No gems should be paired with kicks on Easy
- Easy should only need two limbs
- Are there enough drum fills? Are they the right length?

#### Animation

correct?

#### **Big Rock Ending**

- Does your BRE function correctly?
- Is there at least one gem after the BRE lanes?

## **EXPERT**

Every drum hit should be represented with a gem. Exceptions include:

- Kicks that are too fast to be plaved with one foot
- Accent emphasis when possible we like to emphasize accented notes in single gem rolls. For example, "Excuse Me Mr" by No Doubt:

- Certain rolls (like buzz rolls) are not very playable in Rock Band. Scale such rolls back so that they feel right and are playable
- The **feel of the song** is more important than small nuances. If you cannot hear hits in the game mix then do not author them

## HARD

The Hard difficulty should scale back from Expert:

- Keep the overall feel of the song but remove more of the nuances of the song
- The number of kicks should be about halfway between those on Expert and Medium
- No kicks during fills (fills played, not those used to activate Overdrive)
- Snare accents are still important on Hard. They should be scaled back to be a bit easier
- All crash cymbals should be authored to a single color
- No double crash hits unless there is a lot of space beforehand
- No guick hand crossovers
- Scale beats back in a consistent manner through out the whole song

## MEDIUM

Medium difficulty is about the crucial parts of the song:

- No kicks or snares between timekeeping beats
  - The kick with crash emphasis is important in medium (when the drummer plays them at the same time). But three limb hits are not allowed. If the drummer plays snare, kick, crash at the same time, the kick is
  - Drum fills should be playable with one hand. This helps Medium players get a feel for the game

usually removed

## SOLOS, BRE, AND ANIMATION

Refer to the "Solos and BRE" and "Animation" sections on page 818.

## EASY

Easy scales back Medium to even simpler beats:

- Use two limb patterns only. For example, patterns that use both hands or one hand and one foot
- Less intense sections are generally snares and kicks
- More intense sections are authored with both hands, but no kick
- On faster songs there should generally only be one kick between snare hits
- Make sure that there is enough space between hits. Easy players are not expected to move quickly between pads. This varies according to the tempo of the song. An 8th note of space is usually enough



## PLAY-TEST: VOCALS

Check note pitch, lyrics, spelling, animation and percussion.

## CHECKLIST

The main things to look for on vocals are:

- Are all note tubes the same pitch as the vocalist?
- Do note tubes end at the right time?
- Is each note tied to a single syllable?
- If there are vocal slides, does the slide timing match the vocalist?
- Do note tubes avoid long consonant sounds (c, f, s, z, etc)?
- Are non-pitched lyrics authored as talkies? Can you get an "awesome" rating with them?
- Are lyrics spelled correctly?
- Do the lyrics match what the singer is singing?

## Do any hyphens appear It

Does each phrase begin with a capital letter?

where they should not?

- Are vocal phrases a reasonable length?
- Do all the lyrics in a phrase fit on the static HUD screen?
- Are all Overdrive phrases usable?
- Does the vocalist animate properly?
- If used, do percussion section(s) make sense in the context of the song?

VOCAL TUBES

It is important that vocal tubes match the **pitch** that is being sung by the singer. This can be difficult to test, but there are two main ways to do this:

- Match what the singer is singing. See if this lines up with the vocal tubes, or
- Match the vocal tubes and see if that matches what the singer is singing

Ideally you should match the pitch and inflections of the singer to get an "awesome" rating.

Note tubes should start and end at the right place. Usually the note tube begins with the first vowel sound of the lyric. For example, "cool" should start with the 'ool" and not the "c".

Each **syllable** should have its own note tube.

When notes do not have a clear pitch we author them as

## LYRICS & PHRASES

We recommended that you check lyrics in the static HUD. Issues are easier to see in the static HUD, and they will also show up in the scrolling HUD.

If a phrase length is too long it will show up on the static HUD. The lyrics will run off the screen and the bar on the note tubes will be very slow.

There are specific punctuation rules for Rock Band:

- You can use a question mark if the lyrics sung are actually a question
- Periods are only used for abbreviations, such as U.S.S.R
- You can use a single exclamation point when the singer is emphasizing a phrase. It is important not to do this too often though

If a percussion section distracts from other instruments you can remove it from the song.

talkies. Sometimes a word will

have a pitch that is difficult to

talkies. For example, the word

"ex- plo- sive" in "Skullcrusher

bridge section. Do not mix and

match pitched note tubes with

Mountain" at the end of the

talkies in any word.

ANIMATION

Check that the vocalist is

animated while singing. The

are no vocals for some time.

PERCUSSION

The chosen percussion

style of the song.

vocalist should be idle if there

Percussion phrases follow the

same rules as for sung vocals.

instrument should match the

place. These words also become

#### Hyphens should not appear in the static HUD unless required by the word. For example "Jack-in-the-box"

Phrase length can be too long or too short. Phrases that don't finish where they should can be a problem. Typically a phrase should last for what the singer sings in a single breath. You can make sure that phrases are flowing smoothly in the scrolling or static HUD.

Overdrive will only activate when there is enough space between phrases. It is important to make sure that you can activate every Overdrive phrase. Make sure there are no Overdrive activations available when the singing is over.

Finally, make sure that the lyrics (and spelling) match what the singer is singing! It is quite easy to miss a spelling mistake and then have to correct it after you finish your custom.

- Copy customs songs and TU4 to your large jump drive using Nautilus.
- Use Nautilus to copy TU5 to your online play jump drive (if needed).
- Delete TU5 from your Xbox 360.
- Use one jump drive at a time do not use them together at the same time.
- Play-test as many instruments and difficulties as you can.
- Review all instruments and difficulties with 'no fail' enabled.

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## Terms used by the custom creators community.

**2x Kick**: A drum chart authored for a kit with two kick drums.

**4/4**: A time signature with four quarter note beats per measure.

Author: A person who creates a custom song.

Authoring / Charting: The process of creating a custom.

**BPM**: The tempo of a song, measured in beats per minute.

BRE: Big Rock Ending.

**C3:** The community for Rock Band 3 custom creators.

**C3 Custom RB3 Template:** A REAPER project template for authoring customs songs.

**CARV**: C3 Automated Rules Validator. Use this tool to check for errors in your REAPER project. CARV can also display Overdriveand song lyrics.

**CAT**: C3 Automation Tools. Use these tools to automate tasks in REAPER.

**Chart:** The MIDI notes for a particular Rock Band instrument or event track.

**Chords**: Two or three notes played at the same time.

**CON File:** A custom file that is ready to play on the Xbox. See also **Magma**.

**Custom:** An unofficial Rock Band song. C3 does not allow customs of any Harmonix Rock Band content.

**Count-in**: An audio cue that establishes the starting tempo of a song.

**Color map:** A graphics file used to customize the colors of MIDI notes in REAPER for Rock Band.

**Combo**: Short for combination. A combo is a set actions completed in sequence (usually with strict timing). For example, if part of a song is difficult to combo, this means it is difficult to execute perfectly. **Demucs**: A music separation model for drums, bass, vocals, and other instruments.

Free form lanes: Lanes used ingame for trills, fast (odd rhythm) tremolo, fast drum rolls, and cymbal swells.

**HOPO**: Guitar / bass gems that do not need to be strummed.

**Key map**: A text file used to customize templates and fields in REAPER for Rock Band.

Magma: Software used to compile custom songs from audio and MIDI into CON files. See also **CON File**.

**Measure:** A small section of music. The duration of a measure is determined by the time signature and tempo.

MIDI notes: Notes placed into MIDI tracks in REAPER. The notes chart the rhythm and pitch of instruments, and other game related events. **Mogg:** The audio format output by Magma for custom songs.

Nautilus: A collection of software tools that help you manage your customs. See also CON File.

**Overdrive (OD):** Energy that is deployed for score multipliers.

**Project Marker:** A vertical red line placed on the MIDI grid. Markers are numbered in the order that they are placed. They are used for advanced tempo mapping.

**RBN Tools**: Software used to customize REAPER. The tools include a preview window for visualizing charts. See also **keymaps**, and **color maps**.

**RB3**: An abbreviation of Rock Band 3.

**rb3con file**: An abbreviation of Rock Band 3 CON File (typically referred to as a CON file). **REAPER:** A digital audio workstation, or DAW. It is the primary software used to create and chart custom songs.

**Reduction**: A chart that is reduced in difficulty for Hard, Medium, and Easy instruments.

**RGW**: An abbreviation of Rhythm Gaming World. RGW is an online community for rhythm games.

**RV**: An abbreviation of RhythmVerse. RV is a free web app for finding content for rhythm games.

**Tempo Mapping:** A process that aligns a MIDI grid to the rhythm of a song. This is an essential process in creating a playable custom song.

**Tempo Marker**. A marker placed during tempo mapping. Tempo markers align the MIDI grid to beats and downbeats in the music. They are are used to set the time signature and current song BPM. **Tremolo**: Rapid alternate picking of notes on guitar or bass.

**Trill**: Rapid alternation between two notes.

## KEYBOARD SHORTCUTS

A list of useful keyboard shortcuts for authoring in REAPER.

## GENERAL

## TRACK HEIGHT

Select All	Ctrl + A	Expand selected tracks	!
Show / hide mixer	Ctrl + M	Minimize track height	@
Open Action List	?		
Item Properties	F2	AUTHORING	
Preferences	Ctrl + P	Open CAT	F9
Project Settings	Alt + Enter	Open Venuegen	F10
		Scroll Tempo Map	Alt + Q
MIDI EDITOR		Tempo Map Measure	Q
Cut	Ctrl + X	New Time Signature	т
Сору	Ctrl + C	Advanced Tempo Map	Shift + Q
Paste	Ctrl + V	Advance Play Head	Tab
View Piano Roll	Alt + 1	Unison Phrase	U
View Note Names	Alt + 2	Import Lyrics	Ctrl + L
View Track Events LIst	Alt + 3	Align Lyrics & notes	Shift + A
Clear Selection	Esc	Toggle Snap to Grid	Alt + S
Start / Stop Playback	Space	Quantize notes	Q
Show / Hide note names	Alt + 0	Open Region Manager	Ctrl + Shift + Alt + R