PUNISHER

AUDIO MUTATOR

Rack Extension for Reason
Instruction Manual

Contents

THANK YOU
We thank you for expressing your confidence by purchasing one of our effect units; in this case the Punisher Audio Mutator. This 2-channel high-quality effect unit was designed with our experience of creating in the digital realm as well as the crafting of audio for all types of users; producers, engineers and artists alike.

We hope you continue to enjoy using Punisher in your projects for now and for future.

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ACKNOWLEDGEMENTS

Thanks to all of the Lab One Alpha Team for all the testing, comments, suggestions and feedback, as well as aiding us to bring our products to you.

Propellerhead Software (for Reason, the SDK and the concept of the Re)

DEDICATIONS

This Re is dedicated to all the Propellerhead Reason users & forum threaders, friends, & colleagues we have spoken to over the years.

DjFresha: Thanks goes out to my studio buddies; Dos aka Ocro, Dj EQ, for the support & feedback, shouts go out to all who know me; Ben 'Devious', Andy 'Ruthless', Scott 'Sniper', the REBIRTH crew and SCHTUM massive (Pete C, Kalist, Aybee), and all who continue to work with and support us.

Also not forgetting my family for the support, and last but by no means least, my wife Alicia who now enjoys the fact that we can bring products to your guys faster is now a happy bunny :D

Now let's get into Punisher ….

Introduction

Punisher is a dedicated rack unit, built as a Rack Extension for the Propellerhead Reason environment. This device has a maximum of what would be 1U space in the real world – the classic 19in rack unit. Being a Rack Extension (Re), this gives you various options of versatility within your projects.

Punisher features at a glance:

> 5 simple intuitive effects
> Series logic signal flow path
> Light DSP processing
> Dual Function Display (metering and stereo oscilloscope)
> 'Ears only' mode to disable the display

All these controls are adjustable to suit your application, and these settings can be stored as part of a Combinator preset (when combined) as well as settings stored within your project. Due to the minimal amount of controls needed, the need for presets is not required due to the efficiency and speed you can dial in your settings.

Punisher features two audio inputs and two audio outputs, which are processed independently; this allows you to have two totally separate signals being processed together at the same time using one set of controls. Mono operation is also an option (see 'How to connect audio' section).

Punisher is designed to be a transparent effect when all effects are off.

A brief guide of Punisher

Punisher is based on various simple distortion algorithms that can change your signal from slight to extreme.

The Front Panel

A]   **Bypass Switch (Bypass effect / Enable effect / Disable effect)**
B]   **Drive control and signal flow switch**
C]   **Bias control and signal flow switch**
D]   **Twist control and signal flow switch**
E]   **Warp control and signal flow switch**
F]   **Excite control and signal flow switch**
G]   **Feedback control and signal flow switch**
H]   **Clip Safe**
J]   **Mix control**
K]   **Dual Function Display (meters, oscilloscope)**
L]   **Device Label**

The folded front view includes the Bypass switch (A) and the Device Label (L).

For reference, the control descriptions are:

DRIVE:	**To increase the signal up to +18dB into Punisher**
BIAS:	**Applies an offset to the DC signal (positive / negative level) with inline softclip function**
TWIST:	**Deforms the second cycle of the incoming signal with inversion as well as added gain**
WARP:	**A Foldback style distortion with added bite and rasp**
EXCITE:	**Frequency Dependent Exciter**
FEEDBACK:	**Adjustable feedback delay effect (from flanging to echostyle feedback)**
MIX:	**Balance between dry (original) and wet (mutated) signal**

The Dual Function Display allows you to view the metering pre- and post-processing, as well as the option to view the stereo oscilloscope. See more on 'Using the Dual Function Display'
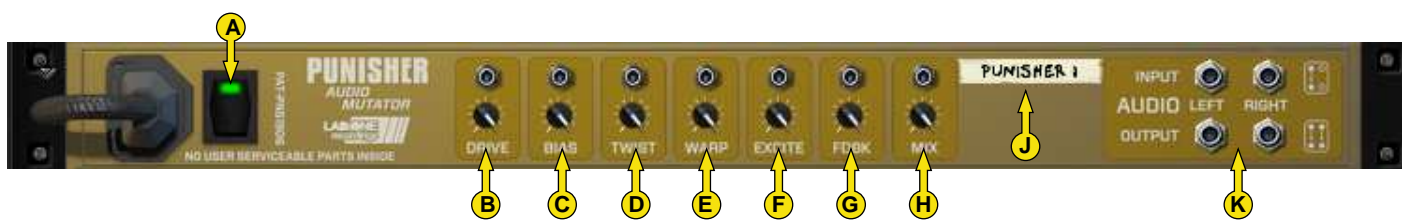
The Back Panel

A]   **State indicator**
B]   **Drive CV + trim control**
C]   **Bias CV + trim control**
D]   **Twist CV + trim control**
E]   **Warp CV + trim control**
F]   **Excite CV + trim control**
G]   **Feedback CV + trim control**
H]   **Mix CV + trim control**
J]   **Device Label**
K]   **Audio Input & Output sockets**

The Audio Inputs & Outputs [K] are used to connect Punisher to various modules within the Propellerhead Reason environment, in a form of either an insert or a send effect.

Connecting up the audio sockets can be done automatically by Reason, or can be manually done to your own requirements. Mono devices, when connecting a new Punisher to them, can automatically route their mono signal in to the left channel, and the left output of Punisher is connected to the originally wired socket of the mono device, closing the audio loop. Stereo devices can automatically connect their outputs to the left and right inputs of Punisher, and Punisher completes the audio chain by connecting its outputs to the originally connected stereo pair sockets.

Each audio socket processes the audio separately from each other within Punisher. Left and right channels never mix within Punisher. This ensures that if you have two separate mono devices connected to Punisher, the settings on Punisher affect both channels at the same time with the same amount of effect.

The State Indicator allows you to see if the unit is ACTIVE (green), BYPASSED (red) or OFF (black, off). This helps when cabling up what the signal chain is actually doing.

How to connect audio

To connect Punisher you can use Reason's own auto-connection system, and Punisher will decide the best way to auto-wire; if you have a mono-output device (Subtractor, for example), and you wish to add Punisher to it, Punisher will auto-connect the Subtractor output to the Left input, and then continue to route the Left output of the Punisher to the Left input of the mix-channel (or next device in your processing chain).

You can do any of the following to create Punisher;

a) right-click (Win) / CTRL-click (Mac) on the device, select 'Create Device', choose sub-menu 'Studio Effects', and select 'Punisher Audio Mutator' from the listing.

b) with the device selected, use the 'Create', select 'Create Device', choose sub-menu 'Studio Effects' and select 'Punisher Audio Mutator' from the listing

c) using the Tool Palette in Reason (F8), select 'Studio Effects' when in the 'Devices' tab, and locate the 'Punisher Audio Mutator' device, click on the icon and drag it to the device you wish to add it to.

Working with Punisher

Punisher is designed to be a flexible device, allowing it to be used however you see best fit. Only typical applications will be listed in this manual.

A) Using Punisher as an insert (mix channel setup).
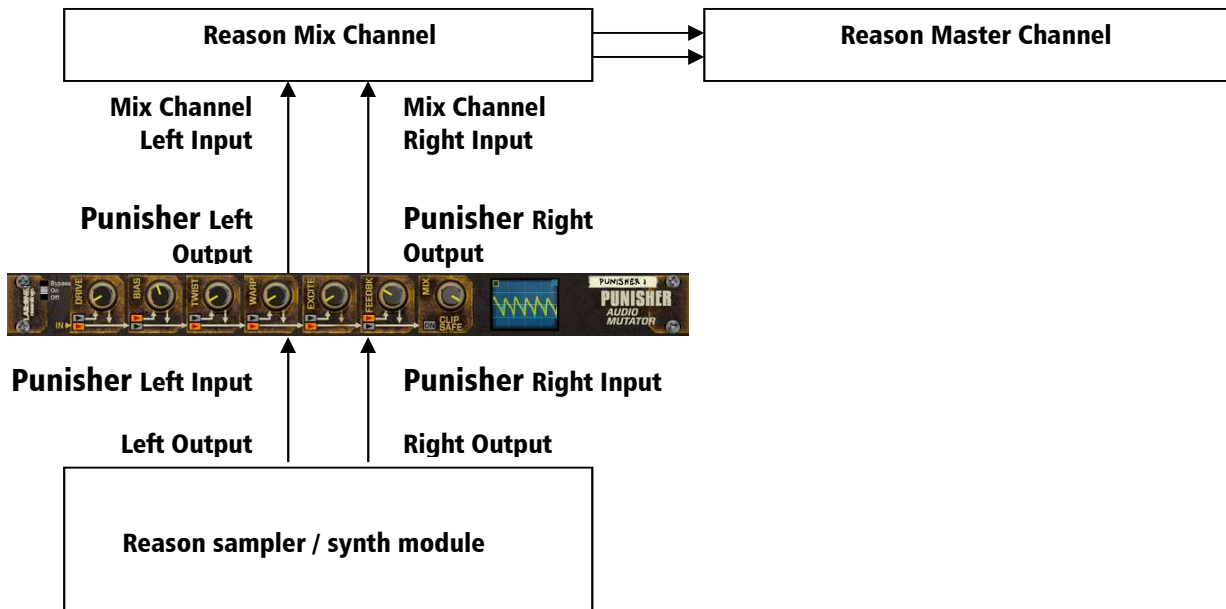
In setup (A), this would use Punisher as an insert effect. This means that whatever control you adjust on Punisher, it will affect the total sound coming out of the sampler / synth module. If Punisher is in bypass mode, the audio playing would still sound 'clean' and unaffected.

B) Using ZPlane as a send effect (mix / audio channel setup).
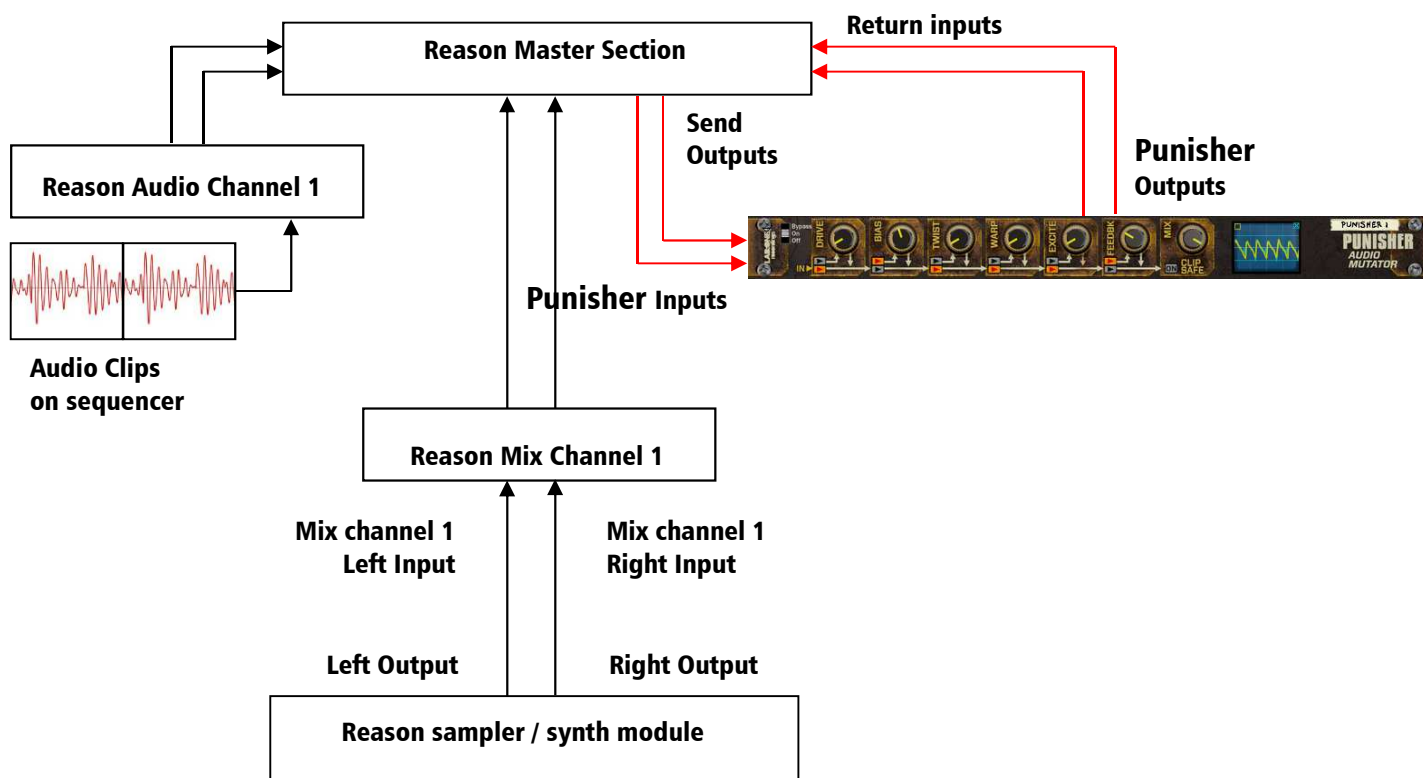
In setup (B), this would use Punisher as a send effect. This means that whatever control you adjust on Punisher, it will affect the sound coming from the Master Section at a set amount, determined by the Send Effect dial on that specific Mix / Audio channel. This means you can have a clean sound mixed with an altered equalized sound. This is known as Parallel Processing, and may be desired in some cases.

Again you can adjust Punisher as mentioned in setup (A) above, with the addition of the SEND dial located on the Main Mixer in Reason. Full left setting of the SEND dial has no effect on the sound, while full right setting of the SEND dial will send a maximum level possible to Punisher. This means you can have one Punisher as a send device for all your audio channels. For best practice, enable MONITOR mode, when used as a Send effect (to prevent 'doubling' of source audio).

Alternative setups
For devices which have multiple outputs (ie NN-XT, Redrum, Thor, Spider Audio), then if required additional Punisher units could be added as either mono-devices (only connecting left audio input & output sockets), or as stereo devices. This in turn allows you to edit specific sounds within a preset if you so wish (ie split zone instrument patches may have a bass guitar for one half of the keymap, while a synth lead is using the other half, and you wish to effect the sounds independently). See the next page for more examples of setups.

Another possible option would be to use one instance of Punisher, and have 2 mono devices linked into it (ie guitar lead and guitar bass), and process both inputs in parallel, and output the two signals to two separate mixer channels. This may be desired to help use the same settings on two mono devices at the same time.

Using the Dual Function Display

Punisher's Dual Function Display allows you to see the metering before and after filter processing, plus an additional mode view the filter curves that you are actively applying to the incoming audio signal. Simply click the display to change views. Meters mode is always default upon creation.

Meters mode

Filter curve view mode

The Input and Output Meters can be used to assess initial audio signal levels, and processed final output levels.

The Oscilloscope allows you to see the audio 'shapes' that are being produced through Punisher. In the upper left of the oscilloscope is a small toggle where you can change the zoom amount, ideal for low level signals. There are 3 stages of zooming: Empty toggle = 100% default zoom, Half filled = 200% zoom, Fully filled = 400% zoomed. The zooming cycles 100%, 200%, 400% then back to 100% on additional click.

The Oscilloscope shows both channels at the same time. Yellow indicates left channel, while Blue indicates right channel. Mono signals would cause overlapping where you may only see yellow scope lines (but this does not mean just the left channel is playing). As well as the scope for visual reference, use your ears to hear the channels at play.

To turn off the scope or the meters, click the blue X in the top right of the display, for the 'Ears Only' mode.

CV inputs and controls

Punisher has a total of 7 CV inputs, with corresponding trim knobs (to scale CV input signals). The CV input sockets are unipolar by design but can allow bi-polar signal. Each of the 7 CV sockets connect to the 7 knob controls on the front of Punisher, giving more creative use of the device where the user sees best fit.

Each CV input has a corresponding label to the parameter the CV may control.

To use the CV inputs, simply connect a CV output from another device. Default settings for CV trim knobs are at maximum, so be aware of possible loud signals if using CV inputs whist in 18 or 24dB modes.

In relation to the way CV works, polarities and inversions please see the illustration below
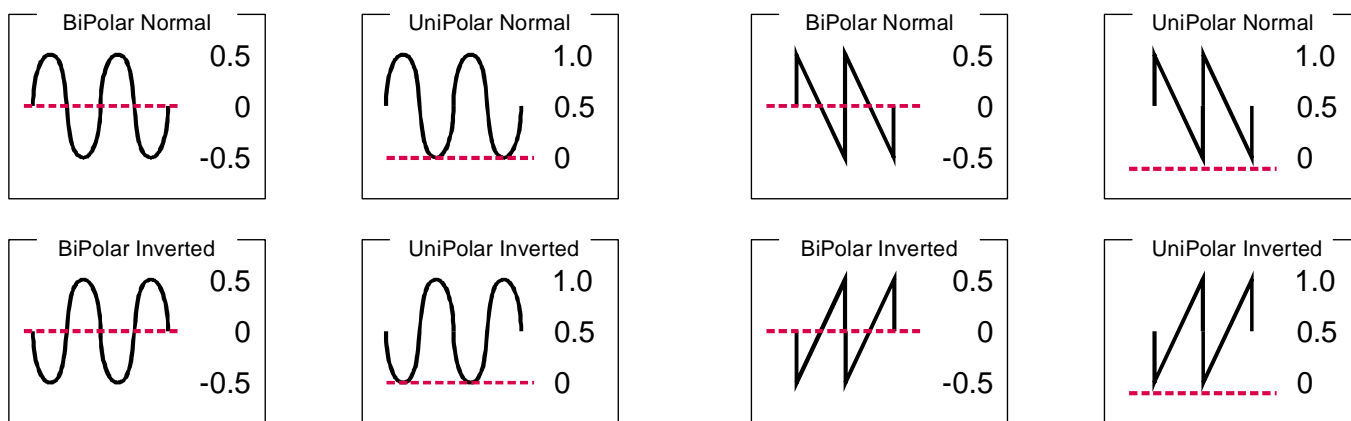
From the example above, we can see the effect of changing the polarity and bi-polar / uni-polar modes has on CV input signals.

NOTE. CV signal patching will remain only within Mixer / Audio Channel effect chains, or within a Combinator, and of course your template rack setups.

MIDI Implementation table

Below is a listing of all MIDI Control Change (CC) numbers, which can be applied to your choice of device.

MIDI CC	Controls
12	Drive Amount
15	Drive Enable
13	Bias Amount
14	Bias Enable
16	Twist Amount
19	Twist Enable
17	Warp Amount
22	Warp Enable
18	Excite Frequency
23	Excite Enable
20	Feedback Amount
24	Feedback Enable
21	Mix Amount
25	Clip Safe

How to 'latch' your own MIDI via Remote Overriding

Reason allows the user to re-define certain controls via MIDI devices by using the Remote Override configuration. This means that a control on Punisher can be mapped by any MIDI controller you have connected to your DAW. However, you can only map one specific control to any of the available Remote 'receiving' controls on the Rack Extension. Also, Remote Override controls are only saved within each independent Reason song file. Ideally, if you use a dedicated piece of MIDI equipment for Punisher, a template start-up file would be a better option, so that the Remote Override template is pre-defined on each new song from the off.

All the controls on Punisher are Remote Override-able. To access the override editor, select from the 'Options' Menu 'Edit Remote Overrides'. The Rack will now display the specific device selected, with either pre-defined Remote control indicators (the Remote symbol), yellow Lightning bolts (over-ridden Remote controls pre-defined) or blue arrows (unassigned Remote controls)

You can right-click one of the controls (except for the main EQ handles) and select 'Edit Remote override'. This will open a new popup window, with some available options, and to show you which MIDI controller is currently set to that specific Remote Override.

By moving one of the controls on your MIDI device (already pre-defined in Reason), you should then see MIDI activity indicator display that a MIDI message was received. Note also the control surface and the control itself on the MIDI device that was adjusted relays to the new Remote Override.

Once you are happy with the control being set, you can click 'OK' to continue with the new setting, or 'CANCEL' to abort the mapping. Also note that if you accept this mapping, the control (if already linked to another) will be fixed to the new mapping. Any previously set mappings will be 'moved' to the new mapped control. This should be used with care if you already have pre-defined Remote Override mappings.

This Remote Overriding method can be handy if you don't know how to set up your own MIDI controller to the dedicated MIDI controls mentioned in the previous chapter. For speed, you can simply double click a blue arrow, and the arrow with turn into a spinning yellow Lightning bolt, indicating that Reason is awaiting a MIDI signal to that control. You can then adjust a MIDI control on your MIDI device, and the control will map automatically without the need to use the popup previously mentioned. Double-click each specific control you want to map to save time and to use the mapping in a faster method.

All Remote Overrides can then be used to record automation within Reason, which can be fine tuned using the Sequencer and the clips (see the Reason Operating Manual for more information on how to edit & record automation)

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