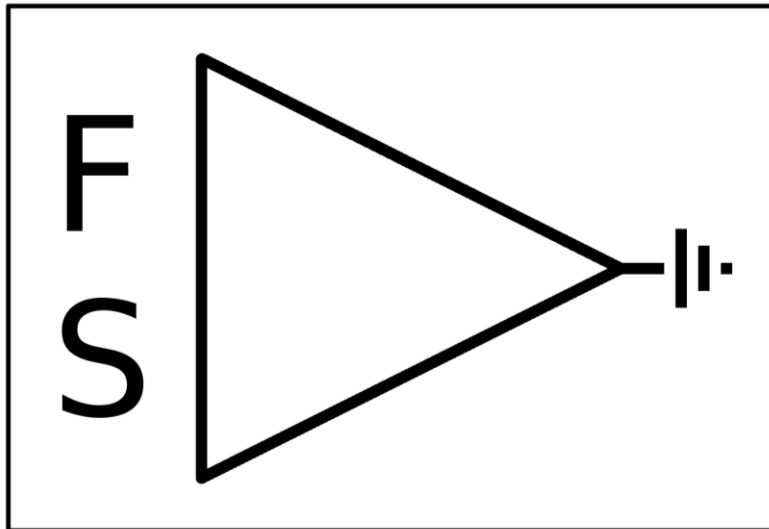


# **FORGOTTEN CONVOLVER USER MANUAL**

*by Forgotten Clank Studios*



# CONTENTS

What is this device and how do I use it? -----	2
The Digital Module explained-----	3
The Analog Module explained-----	3
Controls Front Panel (Digital Module)-----	4
Controls Front Panel (Analog Module) -----	5
Controls Back Panel (Analog Module) -----	6
Display Controls (Digital Module)-----	7
Display Controls (Analog Module)-----	7
Tips and Tricks-----	7
What's new in v1.1? -----	8
FAQ-----	8

## WHAT IS THIS DEVICE AND HOW DO I USE IT?

The *Forgotten Convolver* is a custom filter. There are two modules, one that emulates digital filters and one that emulates analog filters. There are two use cases:

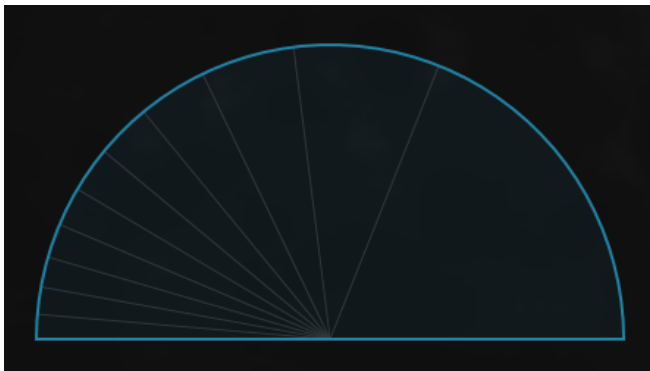
- a. You'd like to create a filter with a specific frequency response
- b. You'd like to do something with a sound but don't know what to do and hope for interesting results

Surprisingly, the *Forgotten Convolver* is very good at doing *b.* but can also do *a.* to a certain extent. It works very well for creating movement in your sound by using filters that change their frequency response over time. If you want to learn more about how the device works under the hood and understand how to create your custom frequency response, go to sections 2) and 3). If you want to learn how to start messing with the modules, go to sections 7) and 8).

## THE DIGITAL MODULE EXPLAINED

The digital module implements a convolution reverb. You can draw in your own, custom impulse response with up to 64 samples and modify it with the *Shift* and *Dry/Wet* knobs. The connection between impulse responses and the frequency response is very complicated so it is basically impossible to intentionally create a desired frequency response. Rather, the digital module is amazing to give a certain “body” to sound. Try out a few waveforms and you’ll certainly find something you like!

## THE ANALOG MODULE EXPLAINED



The analog module is a little more complex. The half circle is the place where you can insert what are referred to as “elements”. The circumference of the half circle corresponds to the frequency axis. Now imagine putting a blanket on the half circle and looking at it from above. By inserting a “pole” element, the blanket gets pushed upwards (towards you), while a “zero” element pulls the blanket

down, away from you. The height of the blanket along the circumference (which, as mentioned before, corresponds to the frequency axis) is the frequency response. This means that placing a pole near the circumference, the frequency that corresponds to that point on the circumference will be boosted by a lot. Conversely, placing a zero at the same point will cut that same frequency. An exception is the allpass-pole which does not alter the frequency response but only the phase response. In this case, to have an effect on the frequency response you have to feed in some of the dry signal using the dry/wet knob. It is worth mentioning that the other elements change the phase response too (except for the unit zero).

By the way, the reason this is called the “analog module” is because many digital filters are calculated by converting an existing analog model to the digital domain and are being represented in exactly this manner.

# CONTROLS FRONT PANEL (DIGITAL MODULE)



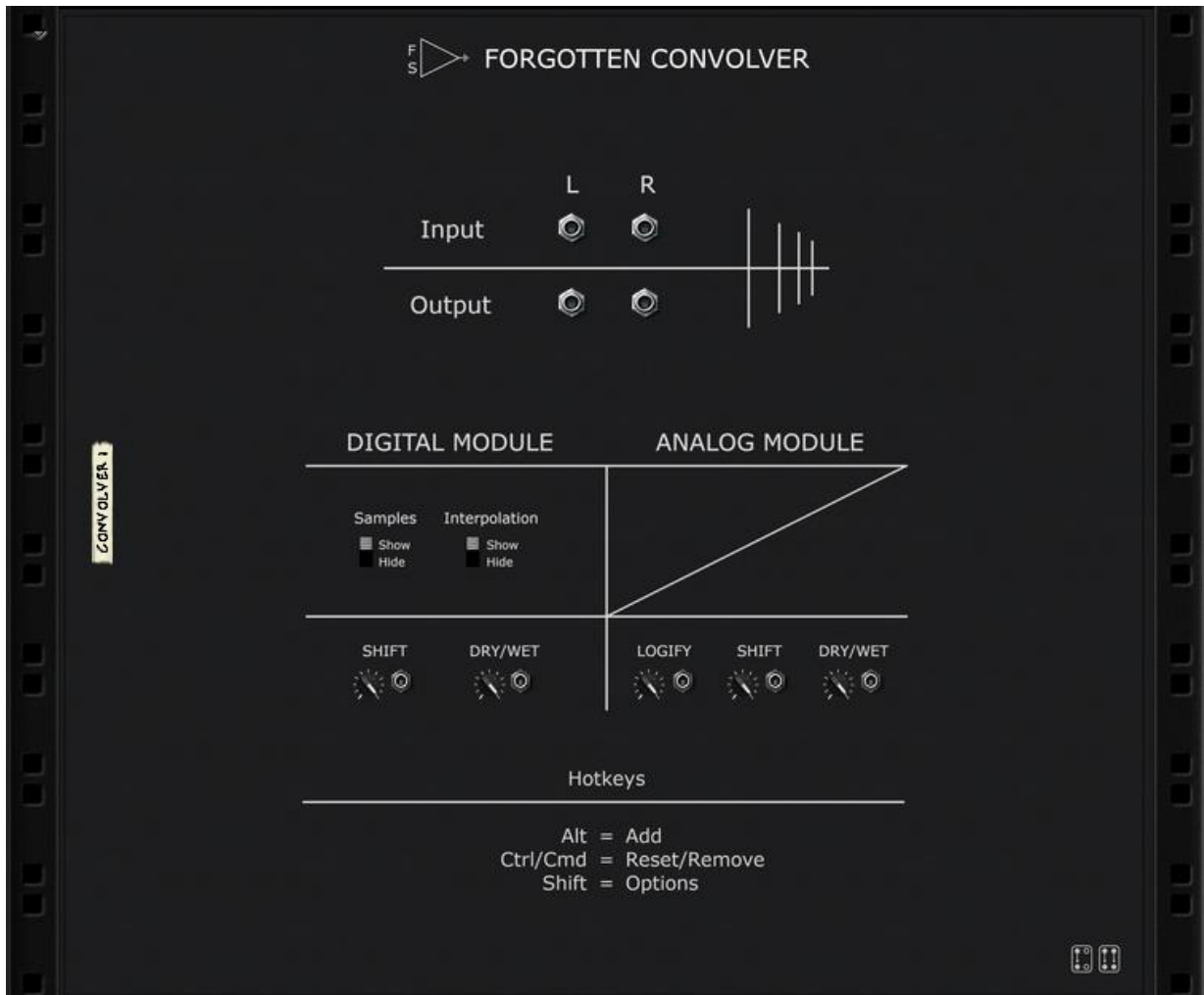
<b>[1] Main Display</b>	The display where you can draw your custom impulse response.
<b>[2] Frequency Response Display</b>	The display where you can see the frequency response of the current filter. It takes into account the knobs “Length”, “Shift” and “Dry/Wet” as well as the “Fade Out” button.
<b>LENGTH</b>	Sets the length of the impulse response.
<b>FADE OUT</b>	When on it fades out the impulse response.
<b>SHIFT</b>	Shifts the individual samples of the impulse response towards the center (0-4 o’ clock) or towards the top and bottom (12-8 o’ clock).
<b>DRY/WET</b>	Changes the ratio of dry vs. wet signal.
<b>GAIN</b>	Sets the output gain.
<b>[3] Module switch</b>	Button to switch between digital and analog modules
<b>[4] Module toggle</b>	Click on the labelling to turn a module on or off (white = on, grey = off)

# CONTROLS FRONT PANEL (ANALOG MODULE)



<b>[1] Main Display</b>	The display where you can insert elements that change the frequency and phase response.
<b>[2] Frequency Response Display</b>	The display where you can see the frequency response of the current filter. It takes into account the knobs “Length”, “Shift” and “Dry/Wet” as well as the “Fade Out” button.
<b>LOGIFY</b>	Distributes the frequency axis (i.e. the half circle’s circumference) linearly (8 o’ clock) to logarithmically (4 o’ clock).
<b>SMART GAIN</b>	When turned on it adjusts the gain of the filter in a more natural manner.
<b>SHIFT</b>	Translates the points to the left (8 o’ clock) or right (4 o’ clock)
<b>DRY/WET</b>	Changes the ratio of dry vs. wet signal.
<b>GAIN</b>	Sets the output gain.
<b>[3] Module switch</b>	Button to switch between digital and analog modules
<b>[4] Module toggle</b>	Click on the labelling to turn a module on or off (white = on, grey = off)

# CONTROLS BACK PANEL (ANALOG MODULE)



<b>Input</b>	Input sockets
<b>Output</b>	Output sockets
<b>Samples</b>	Whether the sample points in the digital module should be visible
<b>Interpolation</b>	Whether the interpolated curve in the digital module should be visible
<b>SHIFT</b>	CV input and trim knob for the digital module's shift knob
<b>DRY/WET</b>	CV input and trim knob for the digital module's dry/wet knob
<b>LOGIFY</b>	CV input and trim knob for the analog module's logify knob
<b>SHIFT</b>	CV input and trim knob for the analog module's shift knob
<b>DRY/WET</b>	CV input and trim knob for the analog module's dry/wet knob

## DISPLAY CONTROLS (DIGITAL MODULE)

- Change sample amplitude** ----- left click or left click and drag
- Set samples to 0** ----- Ctrl/Cmd + left click and drag

## DISPLAY CONTROLS (ANALOG MODULE)

- Insert new element** ----- Alt + left click
- Remove element** ----- Ctrl/Cmd + left click
- Change type of element** ----- Shift + left click

## TIPS AND TRICKS

- Use the “Fade Out” button on the digital module to create a more natural and smooth frequency response. Turn it off for more freedom in your impulse response design.
- When designing longer impulse responses, try adjusting the “Length” knob every once in a while. The shorter impulse response will result in a very different frequency response – and one you might like.
- Turning off the digital module will always save CPU resources as it will always process the incoming signal even if it does not alter the frequency response
- The dry/wet and gain knobs in the respective modules are independent of each other so you can loudness match the filters with ease.
- In the analogue module trying to create an element outside of the half circle will automatically adjust the type of the newly created element. Clicking outside of the half circle but above the horizontal axis will create a unit zero, while clicking below the half circle will create a real zero.

# WHAT'S NEW IN V1.1?

- Updated sound engine of the analogue module (fixed crashes, clicking and sudden volume jumps) + smoother automation
- Frequency response is now correctly calculated in the analogue module
- Fixed small error in the frequency response calculation
- Fixed frequency labels to be cut off on MacOS
- extended CV range (set trim knob to half the value for old patches to get the same result)
- Hotkeys are now listed on the back of the rack
- Resetting individual samples in the digital module is now done with Ctrl/Cmd to be in line with Reason's control scheme
- Slightly updated visuals

## FAQ

### **I think I've found a bug. Where can I report it?**

You can get in touch via [E-Mail](#), [Facebook](#) or [Instagram](#). I'll try to fix bugs as quickly as possible!

### **I've got this amazing idea for a new feature. Will you implement it?**

It depends on many factors. I'm always happy when people that use my devices get in touch, so feel free to say hello! [E-Mail](#) | [Facebook](#) | [Instagram](#)

### **There's this awesome thing I can't do in Reason. Will you code a Rack Extension that does this thing?**

There are still many Rack Extensions on my wish list that I would like to get to some time in the future. But I'm always interested in hearing your ideas! [E-Mail](#) | [Facebook](#) | [Instagram](#)