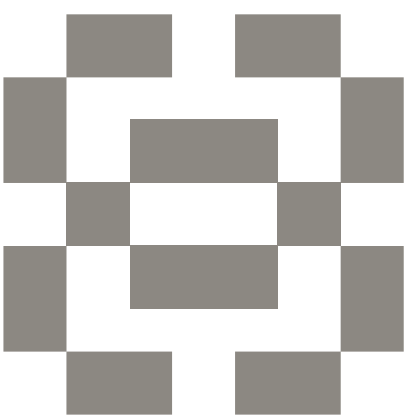
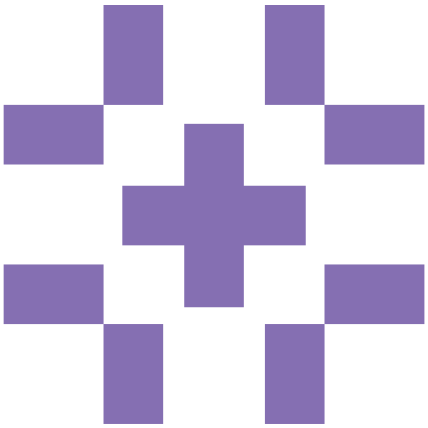
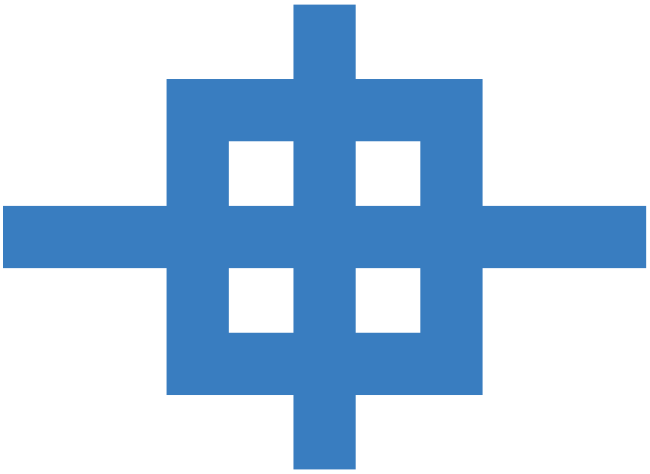




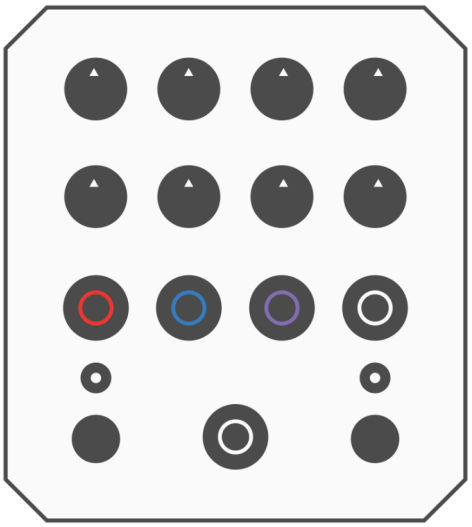

MANUAL

DUAL-CHANNEL
AUDITORY MANIPULATOR

REVERB DELAY
FILTER LOOPER

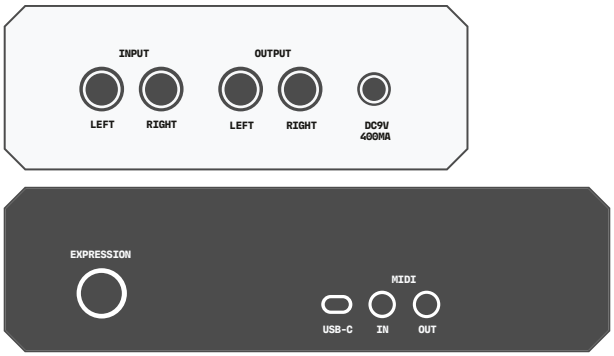
Table of Contents

Overview



The Technician is a dual-channel audio manipulator crafted for musical exploration, combining reverb, delay, modulators, a resonance filter, and a stereo looper to build everything from basic delays to complex layered soundscapes. Equipped with stereo input/output, MIDI, presets, expression control, and USB connectivity, The Technician provides all you need to find your inspiration.

Setup



Audio Routing: The Technician has multiple options for how you want to route your audio. You can adjust this by going to “Global Settings” (explained more in its section) and choosing the following.

- Mono/Stereo
- Mono Parallel
- Mono - Stereo
- Stereo - Mono

Power: use a center negative 9V 400ma power supply. We recommend a isolated power supply for the best results

MIDI: The MIDI connections accept 3.5mm Type A TRS MIDI connections. If your controller has a 5 pin output you can use a adapter cable to connect them as long as its Type A connection.

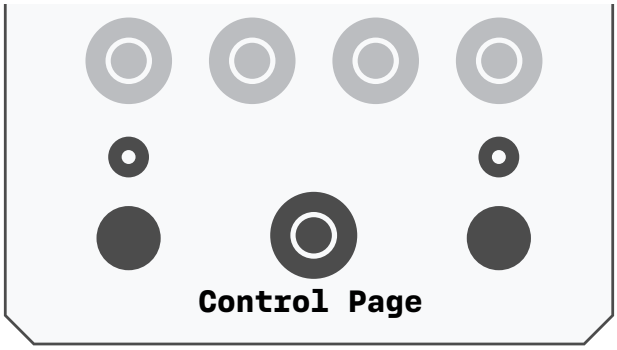
USB-C: Accepts a standard USB-C cable for USB MIDI communication, Firmware updates.

Expression: Accepts a TRS ¼ cable from any “Standard” expression controller.

How to Begin

Lets dive into creating something on the Technician!

The first thing to learn about the Technician is how the “Control Page” toggle works.

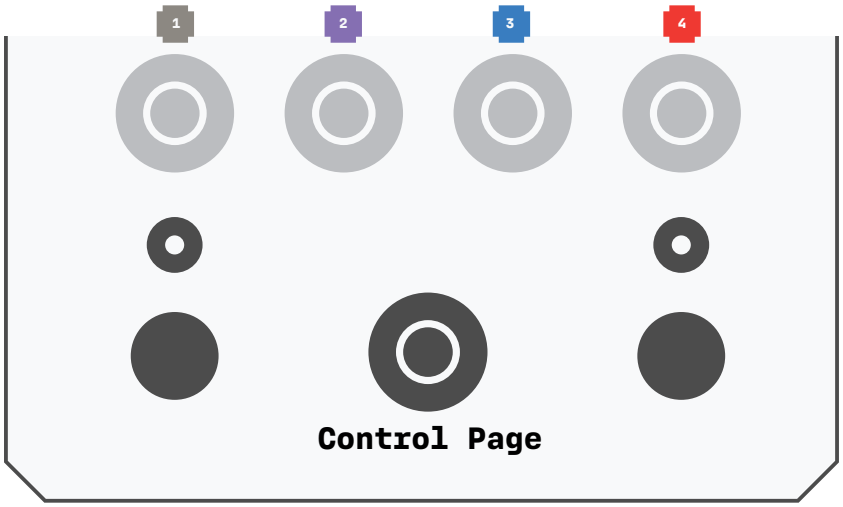


The toggle defaults to page 1 with the LED “off”. This means all the “Bold” controls/toggles like “Mix” or “Delay Mode”. If you press and release the “Control Page” the LED will change to “Purple” and you will now be on page 2 of the controls/toggles. This is what lets you adjust the sub controls/toggles like “pre-delay” or “effect order”. You can only adjust the controls on the page you have currently selected and the control will only be updated if a knob/toggle is adjusted. If you change between pages and don't change any knobs or toggles no controls will be updated.

This is the basic way to use the Technician but you can take it a step further once you are comfortable with how the first two pages work. By holding “Control Page” and the “Delay Mode” toggle you can un-sync the stereo sides of the Technician allowing you to access page 3-4 of the control pages. Page 1-2 now only adjust the “Left” side and 3-4 are the same controls/toggles as page 1-2 but only adjust the right side. This allows you to have different settings and algorithms chosen for each side of your stereo sound.

Once you have mastered this concept you are ready to jump in and craft your sound!

Menu's



The Technician has a couple different hardware level menu's that you can access to change how the Technician works. Below is what they are and how you can access them.

Global Settings - Hold "Control Page" and modifier 1 (reverb mode). The leds will flash blue and you are now in the "Global Settings". Now you can choose the following settings.

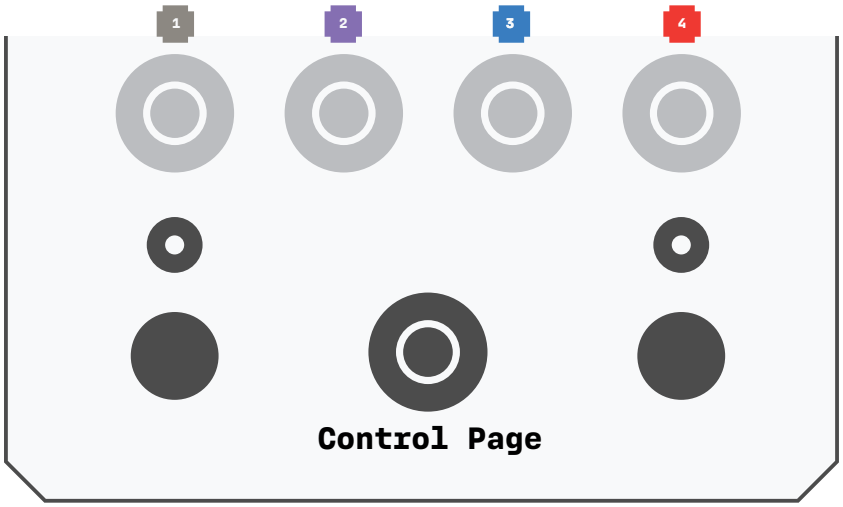
- **(Modifier 1)Footswitch Mode** - The Technician can operate in two Footswitch Modes.
  - (LED "Off") Live - This mode has Footswitch 1 operate as a bypass for the pedal, Footswitch 2 operates as a tap tempo based on the currently selected tap division.
  - (LED "Purple") Preset - In this mode Footswitch 1 will activate Preset 1 of the current bank, Footswitch 2 will activate preset 2 of the current bank. This is a great way to access the pedals presets without using MIDI.

- **(Modifier 2)Audio Input/Output Routing** -
  - (LED "Off") Stereo/Mono - Each side is processed independent of the other.
  - (LED "Purple") Mono Parallel - Your mono input is split to the left/right engine and then summed back together for a mono output.
  - (LED "Blue") Mono to stereo - Splits your mono input and provides independent stereo outputs. Your "Left" dry stays analog, your "Right" dry is digital.
  - (LED "Red") Stereo to mono - takes stereo inputs, processes them independently in the left/right engines but sums them together for a mono output.

- (**Modifier 3**)(TBD)

- (**Modifier 4**)Tails - sets if the pedal is set to true bypass or tails
  - (LED "Off") - True Bypass
  - (LED "Purple)" - Tails

Menu's



Expression Settings - Hold "Control Page" and modifier 2 and the bypass led will blink red.

When you enter into expression mode you can move the knob for any control to set the heel position for that control, scroll through control pages like normal to adjust stereo and sub options. Hold the "Control" toggle to move to "Toe" position and now the "Tap" led will start blinking red. Adjust knobs and then hold "Control Page" to exit expression settings and the led's will blink "Green". These settings will only be saved to your preset when a preset save has been completed, otherwise the settings will be lost on power cycle.

Reset current preset - Hold "Control Page" and modifier 3, Leds will blink green. Sometimes you dive deep into all the possabilities and just want to start over without having to reset your whole pedal! This allows you to return the current preset to its default state.

Stereo sync/un-sync - Hold "Control Page" and modifier 4, Leds will blink green. The Technician will default to "Synced" meaning any control you adjust will be duplicated to the "Left" and "Right" side. If you un-sync the stereo sides then page 1-2 only affects the "Left" and page 3-4 only affects the "Right".

Controls

Delay

- **Mix** - Controls the wet/dry mix of the delay DSP block. 0%-75% of the knob sweep controls the mix of the wet signal, 75%- 100% will decrease the “pass thru” of the DSP block.
- **Time** - Controls the buffer time of the delay block with a maximum of 2 sec/ 2000ms.
- **Feedback** - This controls how much of your signal is fed back into the delay buffer giving you shorter or longer repeats.
- **Mod One** - Controls the currently selected modulator.
- **Mod Two** - Controls the currently selected modulator.
- **Tap Division** - The technician has x4 different tap division options you can scroll through.
- **Delay Mode** - The technician provides x4 different delay modes for building your ideal delay sound.
  - Digital
  - Reverse
  - Granular
  - Re-Sample

- **Modulators** - The delay block has x4 different Modulation modifiers that you can choose from to augment your selected delay mode.
  - **VIBRATO:** Depth “ONE” and Rate “TWO”.
  - **TREMOLO:** Depth “ONE” and Rate “TWO”.
  - **CLOCK**: “ONE” sets how many time jumps, “TWO” sets the division speed of jumps.
  - **ALGORITHM SPECIFIC:** Digital/Reverse feedback dampening. “ONE” for gain, “TWO” for freq . Granular grain max size “ONE”, amount of grains “TWO”. Re-Sample “ONE” mix of octave up, “TWO” mix of octave down

Filter:

The resonant low-pass filter (LPF) is an essential tool for shaping audio by removing high frequencies while emphasizing a selected cutoff frequency, adding character and warmth to the sound. The "resonance" control enhances frequencies around the cutoff point, creating a peak that brings out rich, expressive tones and adds depth to the audio. The LPF is crafted to be both musically responsive and highly versatile, allowing users to sculpt sounds with precision, from subtle enhancements to intense filtering effects, making it a key component for creative sound manipulation.

Controls

Reverb

- **Mix** - Control the amount of reverb. 0%-75% of the knob sweep controls the mix of the wet signal, 75%- 100% will decrease the “pass thru” of the DSP block.
- **Decay** - Adjusts how long the reverb will last. .
- **Pre-delay** - Adjusts the amount of time for the reverb Pre-delay.0% will set no pre-delay, 100% will provide 500ms of pre-delay.
- **Clock** - Adjusts the "size" of the reverb DSP block
- **Mod Two** - Controls the currently selected modulator.
- **Mod One** - Controls the currently selected modulator.
- **Reverb mode** - The technician has x4 different reverb modes for you to choose from to build your ideal sound.
  - **Hall**
  - **Plate**
  - **Chasm**
  - **Grim**

Modulators -

- **Vibrato** -an asymmetrical modulation of the reverbs pre-delay to create sonically pleasing movement in your reverb.
- **Auto Filter** - takes control of the “Filter” DSP block and modulates it with an LFO. Adjust the “Resonance” of the “Filter” block to get a more dramatic effect.
- **Octave** - Adds an octave feedback path in each reverb mode and can be octave down or octave up.
- **Dampening -** adjust the LPF and HPF of the reverb feedback path drastically changing the tone and how the reverb reacts to input.

Looper

- **Mix -** Adjust the volume of the loop.
- **Mod one -** adjust the currently selected looper modulator

Dry Mix - Controls the output of the separate analog dry mix.

Effect Order

- **Effect Order** - Lets you choose between 4 different ways of organizing the DSP blocks. This is saved on the preset level so you can easily jump between different routing options per preset!
  - Looper - Delay - Reverb
  - Looper - Reverb - Delay
  - Delay - Reverb - Looper
  - Reverb - Delay - Looper

Delay

Delay Modes

Digital - Starting as a crisp digital delay, this mode, when paired with the tap footswitch, covers a lot of ground for your delay needs. The “Red” modulator lets you adjust the dampening of the delay, making the repeats either brighter (emulating towards a tape or HIFI sound) or darker (emulating like an analog delay). These options let you craft a vast array of delay tones.

Reverse - Instead of reading the delay buffer in a forward direction like the “Digital” delay we read the buffer backwards creating unique sound possibilities. You can further modify this sound with the “Red” modulator to adjust the dampening of the repeats to grow brighter or darker.

Granular - Takes the delay buffer and chops it up into “Grains” and then plays those grains back. The size of the grains, direction (forward/reverse), the speed (pitch) and location in the buffer is all randomized so every time you experience this mode it will be a unique exploration into granular synthesis. The “Red” modulator allows you to adjust the max size of the randomized “size” of the grains and the amount of grains from 1-5.

Re-Sample - What if you want a more complex soundscape like other instruments are playing with you? Re-sample accomplishes this by playing the delay buffer at different speeds which changes the pitch and timing of the delayed phrases creating a more complex musical expression of what you are playing. “Red” lets you adjust the mix of the octave down and the octave up.

Delay Modulators

Vibrato - An asymmetrical modulation of the delay time with control over the “Depth” and “Rate”

Tremolo - Modulate the mix of your “wet” delay signal with control over the “Depth” and “Rate”

Clock - Attaches a LFO to the clock speed of the delay buffer allowing for jumps in pitch and speed. Adjust how many steps it will jump and how fast it will jump between steps.

Mode-Dependent - This will allow you to adjust dampening in the “Digital” and “Reverse” modes, Grain max size and amount of grains in “Granular” and the mix of the octaves in “Re-Sample”

Reverb

Reverb Modes

Hall - The least diffused of the reverb modes “Hall” allows you hear the reflective nature of the hallway your sound is in.

Plate - Emulating a classic plate reverb sound that is diffuse and reflective.

Chasm - An exploration into reverb design feedback networks that can allow for unnaturally large decay lengths.

Grim - Takes the “Chasm” mode and splits the output to a parallel octave down so you get the normal output + the octave down for a deep rich soundscape.

Reverb Modulators

Vibrato - an asymmetrical modulation of the reverbs pre-delay to create sonically pleasing movement in your reverb.

Auto-Filter - takes control of the “Filter” DSP block and modulates it with an LFO. Adjust the “Resonance” of the “Filter” block to get a more dramatic effect.

Shimmer - Adds an octave feedback path in each reverb mode and can be octave down or octave up.

Dampening - adjust the LPF and HPF of the reverb feedback path drastically changing the tone and how the reverb reacts to input.

Filter

Filter - The resonant low-pass filter (LPF) is an essential tool for shaping audio by removing high frequencies while emphasizing a selected cutoff frequency, adding character and warmth to the sound. The "resonance" control enhances frequencies around the cutoff point, creating a peak that brings out rich, expressive tones and adds depth to the audio. The LPF is crafted to be both musically responsive and highly versatile, allowing users to sculpt sounds with precision, from subtle enhancements to intense filtering effects, making it a key component for creative sound manipulation.

Looper

Looper - The Looper DSP block has 60 sec of independent stereo looping with 3 different modes to determine how you control the looper.

Off - Bypass's the looper DSP block

Latching - When the "Tap" switch is pressed and released the looper will rec/dub.

Momentary - While the "Tap" switch is held the looper will rec/dub.

Quantize - Works the same as "Latching" but will automatically clip your loop length based on the delay time that is currently set.

Looper Modulators

Clock: fine detail adjustment of the speed and direction of the clock.

Quantized Clock: Quantized adjustment of the speed and direction of the clock locked to octave intervals.

Loop Start: Adjust the starting point of the loop.

Loop End: Adjust where the loop will end.