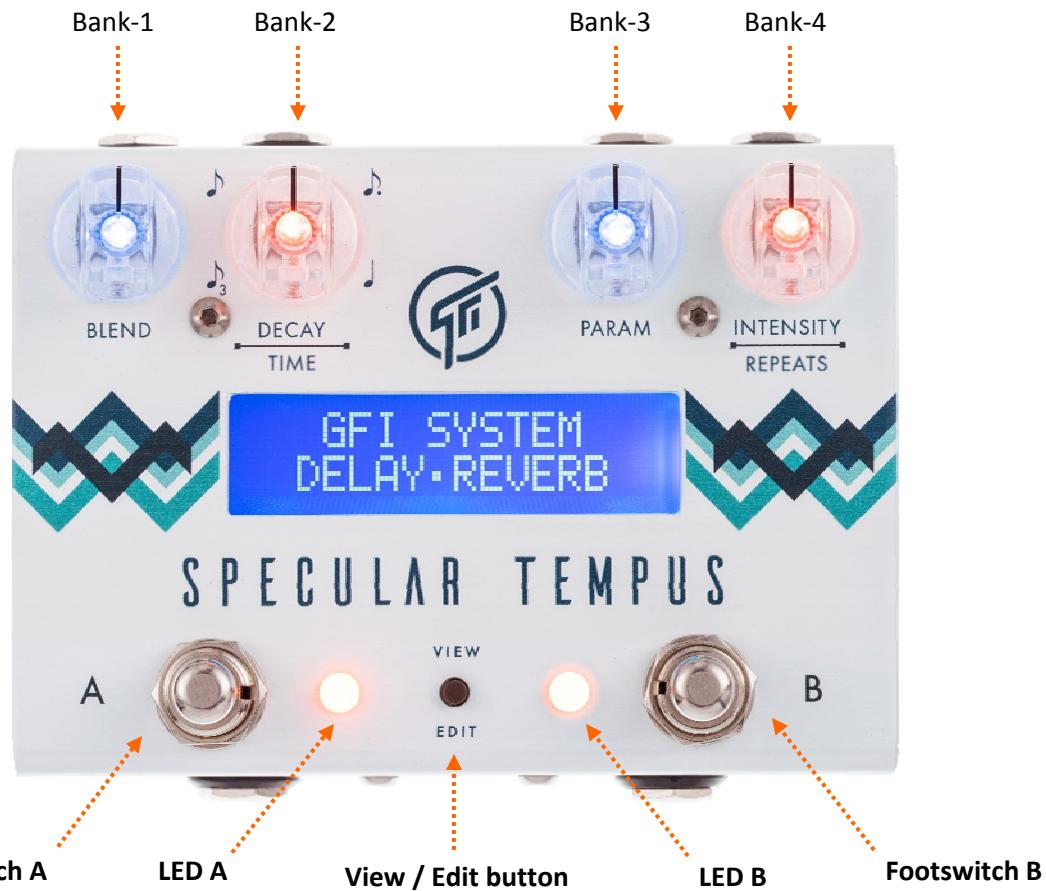
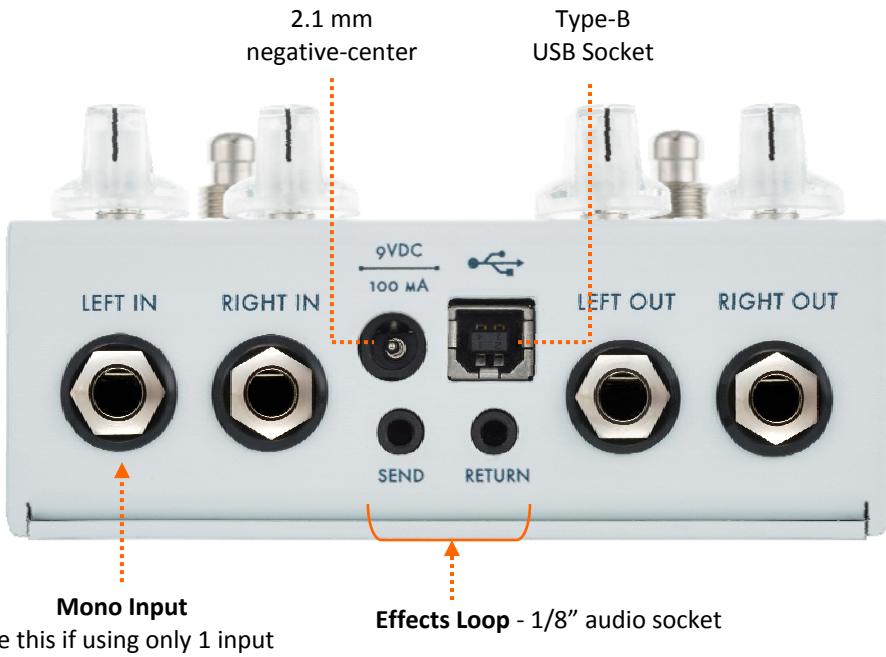


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Illuminated knobs indicate the preset Bank number : 1 - 2 - 3 - 4





## Chapter 1 - OVERVIEW

Specular Tempus is a compact yet powerful reverb and delay effect processor in a compact pedal. Featuring 36 algorithms (13 reverbs, 17 delays, and 6 reverb & delay combinations), 8 presets. Stereo in/out, tap-tempo, and extensive inter-connectivity. Using the SpecLab software (free download) users get access to an extended set of parameters for deep-editing of the algorithms.

### Preset System

Specular Tempus has 32 presets organized within 4 pages, where each page contains 4 banks, and each bank contains 2 patches (A and B).

A   B	A   B	A   B	A   B	A   B	A   B	A   B	A   B	• • •	A   B	A   B	A   B	A   B
Bank-1	Bank-2	Bank-3	Bank-4	Bank-5	Bank-6	Bank-7	Bank-8		Bank-13	Bank-14	Bank-15	Bank-16

PAGE 1

PAGE 2

PAGE 4

You may set the maximum number of *banks* or *pages* to access. For example, restricting the preset access to **two pages** gives you **2 pages x 4 banks x 2 patches = 16 presets**.

Such restriction is useful if you are not using MIDI controller as it could get unwieldy to navigate too many preset locations in consequential manner.

 Use the SpecLab editor software to set the maximum number of banks / pages.

## Chapter 2 - OPERATION

### ■ 2.1 Bank-Up

- Press A and B simultaneously (do not hold).



< The display will show the titles of both patch A and patch B >

Note : - This operation can also be done using an external aux switch box (see Chapter 4).

- The current sound does not yet change, until you choose the desired patch (A or B).

### ■ 2.2 Load a Preset

- Select the desired Bank.
- Tap A or B.



Note : Spillover of reverb or delay tails is present only if the called preset contains the same algorithm and virtual parameter settings as the current preset.

### ■ 2.3 Save a Preset

- Select the desired Bank.
- Press and hold A or B, release after the corresponding LED flashes 3x.

## ■ 2.4 Bypass

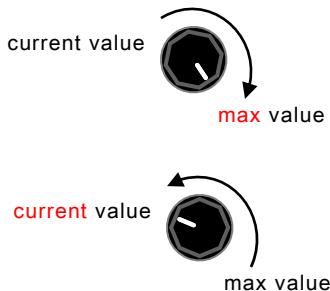
- Tap A or B, whichever is currently active.

Tips : - *Reverb / Delay tails spillover and decay out gradually.*  
- *In Bypass condition you can still do tap-tempo or change bank.*

## 2.5 Auto Swell

- Press A and B simultaneously, and hold.

The parameter controlled by one of the four knobs\*\* gradually sweeps from its current value to the maximum value (as if someone slowly turns the knob all the way up).



The value will remain at maximum as long as you hold the footswitches down.

When the footswitches are finally released the parameter sweeps back to its original value.

Tips : - *This operation can also be done using an external aux switch box (see chapter 4).*

\*\* *The swelled parameter can be set to any one of the four knobs :*

- Blend
- Decay / Time
- Param
- Intensity / Repeats



You can choose the parameter that you would like applied to auto-swell using the SpecLab software.

### Application hints :

#### 1. Shimmer Bloom

- 1.1 Activate SHIMMER algorithm.
- 1.2 Set the *Intensity* knob to a low setting (about 9 o'clock).
- 1.3 Set *Blend*, *Decay*, and *Tone* as desired.
- 1.4 Start playing, a low level shimmer effect will be heard on top of the reverberation.
- 1.5 Execute auto-swell.

#### 2. Delay hold

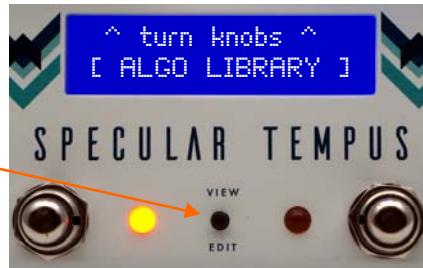
With delay algorithms, apply the *Repeats* parameter to the auto-swell and you get the *hold* function.

## ■ 2.6 Algorithm Library

The algorithm library contains 13 reverbs, 13 delays, and 6 reverb & delay combined algorithms. You can select any one of these algorithms, tweak it, and then save it as presets.

### 1. Access the algorithm library.

- Tap the View / Edit button



### 2. Select an algorithm.

- Turn the DECAY / TIME knob to browse the Reverb algorithms.
- Turn the PARAM knob to browse the Delay algorithms.



### 3. Select an algorithm.

- Tap the View / Edit button again



The algorithm is now activated.

You can save the selected algorithm as preset using the normal procedure for saving preset. The preset's title will be automatically set to the name of the algorithm.

Tips : If you want to change the title you can do so using the SpecLab software. You can also use the SpecLab to perform deeper editing / customization of the algorithms.



## ■ 2.7 Edit Mode

Edit mode is where you can make changes to a number of operational parameters. To enter the Edit Mode press and hold the View / Edit push button, the display will read :



you can either cancel and exit by holding the button again until the display returns to normal scene or continue editing by turning any one of the 4 knobs. In Edit mode the 4 knobs function as switches which you can use to set the desired values for the 4 parameters listed in the table.



Parameter	Possible Values			
Kill Dry	Off			On
Subdivision*	1/4-Note Triplets	1/8-Note	Dotted 8th	Quarter Note
Tempo Unit	MS (milliseconds)			BPM (beats-per-minute)
Tempo Scope	Local			Global

### Saving Changes

When you're done editing you can save the changes to the current preset by holding down footswitch A or B as you would normally save a preset. If you would like to exit the Edit mode without saving any changes into the presets simply hold down the View / Edit button again until the display returns to normal scene.

## ■ 2.8 Tap Tempo

In Specular Tempus tap-tempo can be accomplished in 3 ways :

1. On the pedal itself, using footswitch B as tap-tempo switch.
2. Using external aux switch box (see Chapter 4).
3. Using MIDI controller.

With option #1, footswitch B becomes tap-tempo switch and can no longer be used to call patch B. Therefore, under this scheme the available number of presets is 16 (1A through 16A). You can still save changes to patch 1B through 16B, but you won't be able to call them.

### Local / Global tempo

The tempo of the Delay algorithms in Specular Tempus can be set to be *Local* or *Global*.

*Local* means the delay time is set to the tempo as was saved in the preset.

*Global* means the delay time is set to a global tempo shared by other delay algorithms.

For example, 2 different delay algorithms are stored in preset 1A and 1B, both are set to use global tempo. Then any tempo changes you make while using the delay in preset 1A will become a global tempo which will then dictate the tempo for the delay algorithm in preset 1B.

- ◆ The Local / Global setting can be specified on per-preset basis.
- ◆ Tempo must set to 'Global' to accept MIDI Clock.

### Subdivision

- ◆ Subdivision may be set via software editor Speclab or on the pedal itself (Edit mode - see section 2.7, page.6).
- ◆ Subdivision setting can be specified on per-preset basis.
- ◆ When 'BPM' is selected as the tempo display unit, the delay time set via TIME knob will be automatically subdivided as per selected subdivision value.

*For example, let's say you want to play dotted 8th groove to a song of which you know the BPM tempo. Simply adjust the TIME knob to match the BPM tempo of the song, and the resulting delay time will be automatically subdivided to Dotted 8th subdivision (assuming you've previously selected dotted 8th as the subdivision value).*

**Note** : this feature is only applicable when BPM is selected as the tempo unit, it is not applicable when millisecond unit is selected.

## ■ 2.9 Global Configuration

The pedal has a number configurations that are *global* (apply to all presets), these are :

- Aux-In switches assignment (*see section 4.1, page 18 for details*).
  - Top Page : [1](#), [2](#), [3](#), or, [4](#).
  - Global Kill-Dry : [On](#) or [Off](#)
  - Midi Channel : [1 to 16](#)
  - Footswitch B function : [Preset](#) or [Tap-Tempo](#).
  - Tap-Tempo Output Polarity : [Normally-Opened](#) or [Normally-Closed](#).
  - Tempo Led Blinking disable.
- } *These four can be configured on the pedal itself.*

Global configuration can be accessed using the Speclab editor software, and some can be configured on the pedal itself.

**The following procedure allows you to access the global configuration on the pedal itself :**

- Hold down footswitch B on power up, release the switch when the display reads :



- Now you can use the knobs, which at this point function as switches, to configure the global configuration.
- Save the changes you made by holding down footswitch B until LED B flashes 3x.  
If you do not want to save any changes simply recycle the power.

### Chapter 3 - ALGORITHMS

Reverbs		Delays		Delays
<b>CLASSIC</b>	Spatium Room Tile Room 70's Plate Spring	<b>CLASSIC</b>	Digital Analog Echoes	[1 sec] [1 sec] [1 sec]
<b>ATMOSPHERIC</b>	Modulated Shimmer Swell Vortex Voices Anti-Shimmer Tremble Infinity	<b>ESOTERIC</b>	Spectral Filter Formant Transposer Ambiental Dual Stereo Dual Dotted Dual Gold MultiTap 3 MultiTap 4	[1 sec] [1 sec] [1 sec] [1 sec] [1 sec] [1 sec] [1 sec] [1 sec] [1 sec] [1 sec]
<b>HYBRID</b>	+Digital [1 sec] +Analog [1 sec] +Echoes [1 sec]	<b>HYBRID</b>	Diffuse Dgtl Diffuse Anlg Diffuse	[1 sec] [1 sec] [1 sec]
				Tape Echo Dynamic Dgtl Dynamic Anlg Dynamic Echo  added in Firmware v3.8

#### A word regarding Specular Reverb V2 / V3

The algorithms from our award-winning Specular Reverb V2 / V3 pedals have all been ported to Specular Tempus, improved and expanded with additional parameters and features for deeper tweaking. Some of those algorithms appear with different names in Specular Tempus.

SR V2 / V3	Specular Tempus	Added Parameters
Normal Reverb	Spatium	<i>High-cut, Low-cut, Wet Panning, Modulation</i>
Modulated	Vortex	<i>High-cut, Low-cut, Wet Panning</i>
Shimmer	Shimmer	<i>High-cut, Low-cut, Wet Panning, Perfect 5th voicing</i>
Echo	+Echoes	<i>High-cut, Low-cut, Wet Panning, Reverb Time</i>
Tremble	Tremble	<i>High-cut, Low-cut, Wet Panning</i>
Voices	Voices	<i>High-cut, Low-cut, Wet Panning, Modulation</i>
Infinity	Infinity	<i>High-cut, Low-cut, Wet Panning, Unlimited layering</i>

Please visit the following page for complete reference and information (pdf file is also available) on the algorithms :  
<http://www.gfisystem.com/algorithms.html>

However we will now elaborate on one reverb algorithm : *INFINITY*, which uses a peculiar footswitch operation for it to work.

### ***INFINITY***

This mode allows you to capture a brief snapshot of the sound you are playing, and hold it indefinitely, then you can play over it (with reverberation). There are 2 operation modes to choose from:

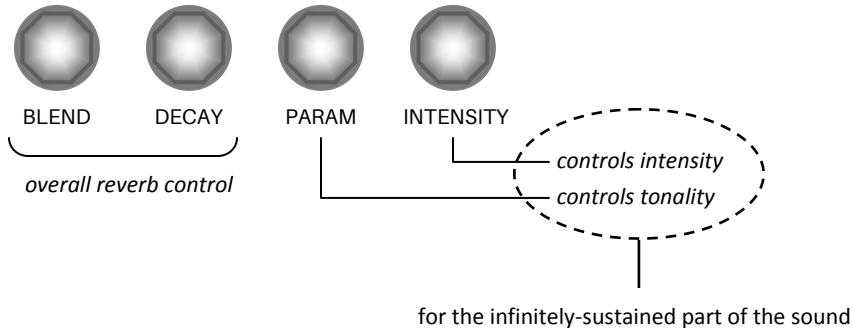
**1-Layer** mode\* : You can fade out the sustained sound, and immediately fade in a new one.

**N-Layers** mode\*\* : You can add infinite number of layers of sustained sound, creating an ever-dense ambience goodness.

Here's how you do it :

1. Adjust *Blend* and *Decay* knob to get the desired amount of reverb mix and reverb time. Leave *Param* and *Intensity* knobs at midpoint.
2. Press and hold down both footswitches, when the LEDs start flashing the pedal began to continuously capture a snapshot of whatever you are playing. When you release the footswitch, the pedal will take the last 0.25 seconds of the captured sound and hold it indefinitely.
3. Now adjust *Intensity* and *Param* to get the desired level and tonality for the sustained sound. The Intensity knob runs backward : sound gets louder as knob is turned counter-clockwise.

Now you can play over the sustained sound, and when you want to change the sustained sound with a new one, simply repeat step-2; the current sustained sound will fade out and then you can fade in a new one. The new sound will fade in to the level you've set previously. Alternatively, use the *N-Layers* mode to add more-and more layers on top of existing ones.



Notes :

- ◆ With the *1-Layer* mode you can stop the sustained sound by capturing silence : perform step-2 while playing nothing.
- ◆ With the *N-Layers* mode you *can't* stop the sustained sound. If you want to erase everything and start from scratch the only way to achieve that is to call another preset then call the Infinity preset again.
- ◆ As an alternative to pressing both footswitch A and B together, use an Aux switch instead.

## Chapter 4 - INTERCONNECTIVITY

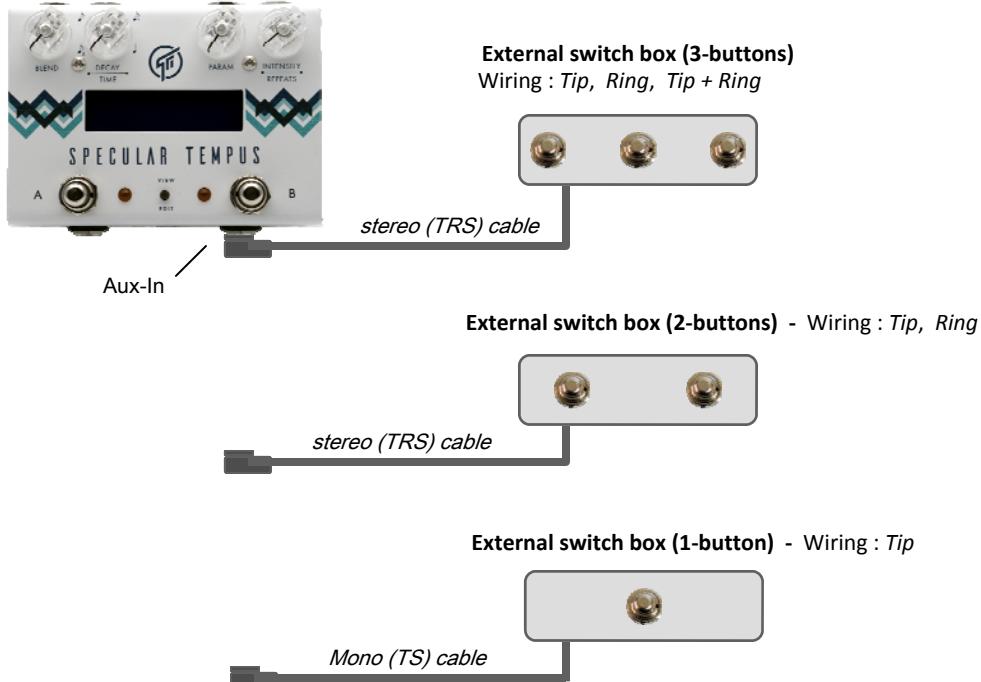
Specular Tempus has been designed with the need to interconnect with the outside world in mind. It sports no less than 4 interfaces : Aux-In, Aux-Out, MIDI In, and Effects Loop. We will now explain what these interfaces do.



### ■ 4.1 Aux-In

The Aux-In jack can be connected to any external *switch box* equipped with *single*, *dual*, or *triple* buttons / switches.

Use the SpecLab software (*Global Configuration* menu) to customize what each switch should do, from basic ones such as *Bank Up*, *Bank Down*, or *Tap Tempo*, to the more exotic ones such as *Warp functions*, *Favorite preset call*, and *Momentary functions*. We will now describe in details the functions to which the switches can be assigned.



AUX-IN FUNCTIONS
Bank Up
Bank Down
Page Up
Tap Tempo
Favorite Preset
Load-A
Load-B
Warp Dotted
Warp 1/2
Warp Triplet
Momentary-A
Momentary-B

*Scroll up the bank*

*Scroll down the bank*

*Scroll up the page*

*Tap-Tempo*

*Instantly call your one favorite preset*

*Load Patch-A*

*Load Patch-B*

*Cuts delay time by 3/4 (Dotted 8th), only when switch is held down.*

*Cuts delay time by 1/2, only when switch is held down.*

*Cuts delay time by 1/3 (Triplet), only when switch is held down.*

*Activate patch-A, only when switch is held down.*

*Activate patch-B, only when switch is held down.*

*When one of these 7 functions are selected holding the switch down engages the Auto-Swell function.*

*So with these 7 functions the assigned footswitch has dual functions.*

*Momentary functions*

#### Detailed description :

- **Bank Up**
- **Bank Down**
- **Page Up**
- **Tap Tempo**
- **Load-A**
- **Load-B**

These six are self-explanatory and require no further elaboration.

#### **• Favorite Preset Call**

This function allows you to set any one of the 32 presets as a *favorite preset* which you can quickly call with just a single footswitch tap, regardless of which preset you are currently in. Having called the favorite preset, you can quickly go back to the previous preset by tapping the footswitch again.

#### **• Auto-Swell**

This function is the same as the one described in section 2.5. Auto-Swell is not listed as an option in the editor software, however, assigning a footswitch to **Bank Up**, **Bank Down**, **Page Up**, **Load-A**, **Load-B**, **Tap Tempo**, or **Favorite Preset** function allows you to engage the Auto-Swell function by holding the footswitch down.

#### **• Momentary-A / Momentary-B**

These two functions allow you to momentarily (by holding down the footswitch) engage the pedal, bypass the pedal, or activate a preset (A or B). This feature gives you *a way to activate a certain sound only momentarily, and*

quickly. The momentary activation lends itself to a more expressive feel where quick and repetitive sound changes are desired.

**How it works (example)** - when a switch is set to *Momentary-A* function it will behave as follows :

Current Pedal State	When switch is held down ...	When switch is released...
Bypassed	Pedal will engage	Pedal will return to Bypass state
Engaged (Patch-A)	Pedal will bypass	Pedal will return to Patch-A
Engaged (Patch-B)	Patch A will get activated	Pedal will return to Patch-B

## ■ 4.2 Aux-Out

This interface outputs a tap-tempo signal which allows Specular Tempus to synchronize its internal tempo with other gears that accept external tap-tempo control. The tap-tempo signal that is routed to the Aux-Out is independent of the sub-division setting so the *slave* gear is free to use its own subdivision setting.



Tips : Reverb algorithms are not affected by tap-tempo, however if you do tap-tempo while using a reverb algorithm the tap-tempo signal will still be routed to the Aux-Out, so you can change the tempo of another gear even you are not using a delay algorithm in Tempus itself.



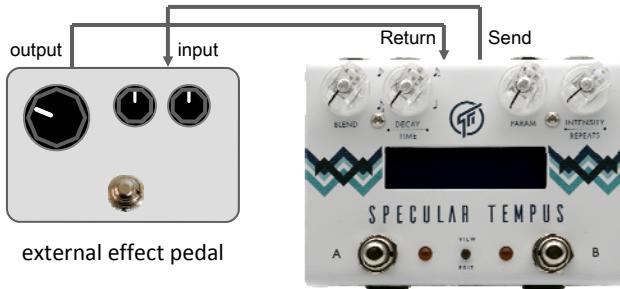
Output polarity can be set to *Normally Opened (NO)* or *Normally-Closed (NC)* in SpecLab editor software.  
Default configuration : Normally-Opened.

## ■ 4.3 MIDI In

This interface provides access into the pedal operation via MIDI. See Chapter 6 for information.

#### ■ 4.4 Effects Loop

The effects loop allows you to insert an external effect processor into the feedback loop of the reverb or delay algorithms in Specular Tempus. For example, inserting a phaser pedal will add a phaser effect to the repeats of a delay algorithm.



The FX-Loop's On / Off state may be specified on per-preset basis (using the editor software).

Notes : FX Loop function is not available on the following algorithms :

**Reverb** : Spring

- |                |               |                 |
|----------------|---------------|-----------------|
| <b>Delay</b> : | - Dual Stereo | - Diffused Dgtl |
|                | - Dual Dotted | - Diffused Anlg |
|                | - Dual Gold   | - Diffused Echo |
|                | - Multi-Tap 3 |                 |
|                | - Multi-Tap 4 |                 |

## Chapter 5 - Using SpecLab Software (a brief guide)

Here are some of the things that you can do with SpecLab :

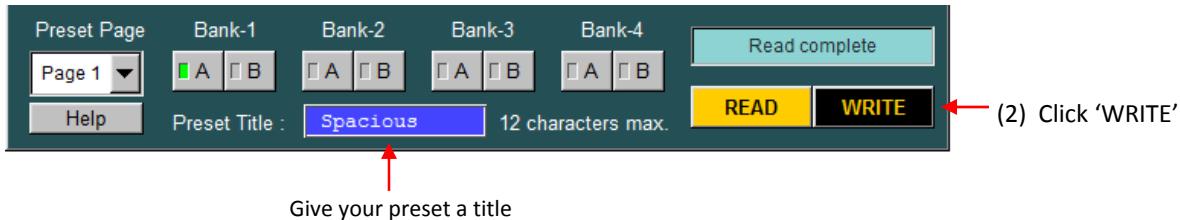
- Customize the algorithms and store them to your pedal as presets.
- Read the stored algorithms in your pedal and display them on screen.
- Save local presets (favorites) in your computer.
- Configure the MIDI channel on your pedal.
- Factory reset, Library update, and Firmware update.
- Backup and Restore presets.

Highlights :

- Real-time preview as you tweak the parameter controls.
- Up to 4 additional (virtual) parameters are available for each algorithms.

### ■ Saving algorithms as preset into Specular Tempus

- (1) Choose the desired preset location

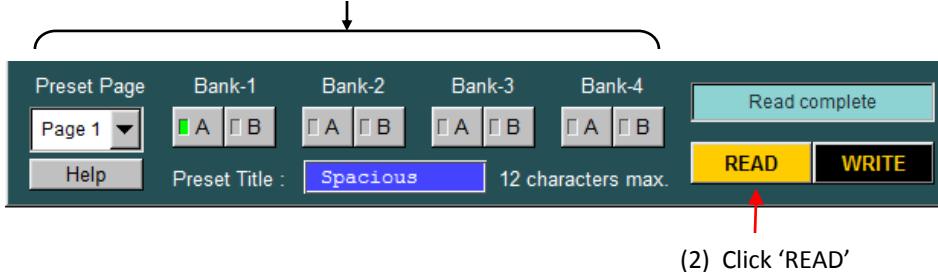


Give your preset a title

(2) Click 'WRITE'

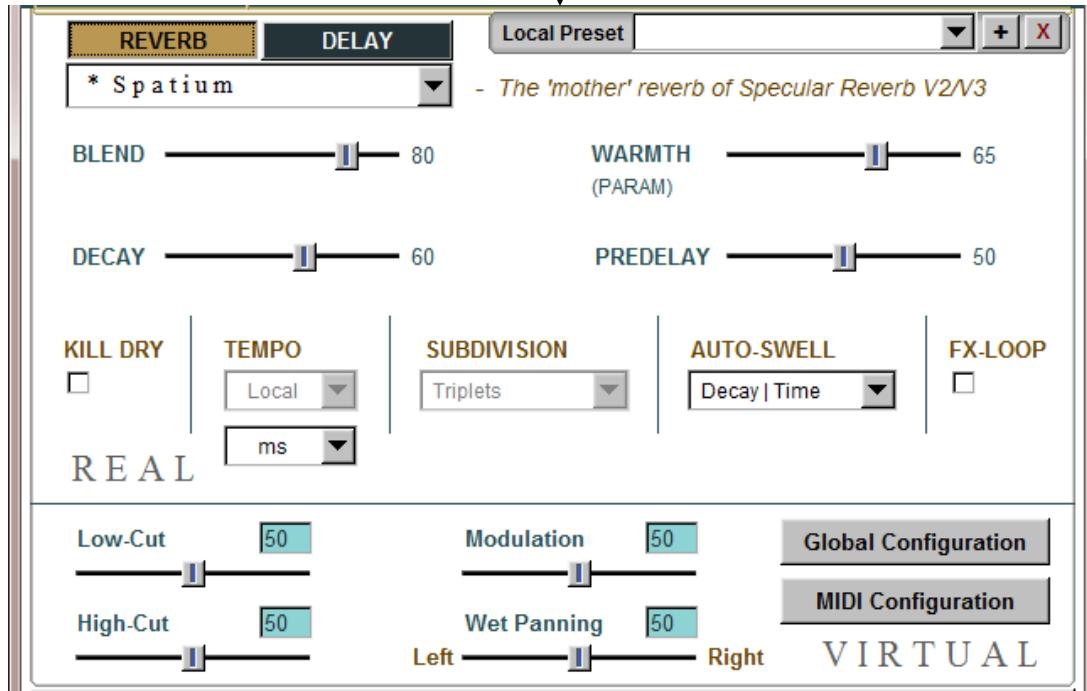
### Reading stored preset from Specular Tempus

#### ■ (1) Choose the desired preset location



(2) Click 'READ'

**Local Preset** allows you to save presets in your computer. It may come in handy when you have more presets than you can put in the pedal or when you feel like sharing your presets with your friends (who also use Specular Tempus).



## Chapter 5 - MIDI IMPLEMENTATION CHART

You can use any standard MIDI controller capable of sending *Program Change* (PC), *Control Change* (CC) messages, and *MIDI Clock* to remotely change presets or controlling other functions or parameters in Specular Tempus.

### MIDI Clock

MIDI clock allows you to sync the tempo of your Specular Tempus delay algorithms to other gears via MIDI timing pulses. Only those presets that are set to *Global* tempo will respond to midi clock signal.

### ■ Program Change (PC)

BANK	PATCH	PC #
1	A	0
	B	1
2	A	2
	B	3
:	:	:
16	A	30
	B	31

Total preset : 32

### ■ Control Change (CC)

KNOBS :	CC#	Value Range
Blend	14	0 - 127
Decay / Time	15	0 - 127
Param	16	0 - 127
Intensity / Repeats	17	0 - 127

OPERATION	CC#	Value Range
Load Patch A	18	any
Load Patch B	19	any
Bank Down	20	any
Bank Up	21	any
Bypass	22	Bypass = 0, Engage= 127
Kill Dry	23	Off = 0, On= 127
Aux-Out Switch	24	Off = 0, On= 127
Tap Tempo	25	any

\* The above tables show the default CC number mapping. You may assign arbitrary CC numbers (0 to 99) to each CC functions via the editor software Speclab.

## ■ MIDI Channel

Specular Tempus is pre-programmed to use MIDI channel 15. You can change the channel number to any number from 1 through 16 using the editor software or from the pedal itself (see section 2.9, page 8).

## Chapter 7 - UPDATING FIRMWARE

1. Download the latest firmware updates at :  
[www.gfisystem.com/downloads.html](http://www.gfisystem.com/downloads.html)
2. Hold down both footswitches on power up. Release when LED#1 and #4 light up (at this point the LCD screen is blank) .
3. Connect the pedal to your computer's USB port and open the SpecLab software, you will be prompted to browse for a firmware file (file extension is *.fdt*). Browse and load the file you've just downloaded, then click 'Update'.

Note: Don't be alarmed if the LCD begins to display garbage-like characters while firmware update is in progress. It will return to normal after rebooting the pedal.



Almost always, a firmware update release is accompanied by an update of the editor software SpecLab as well. Both firmware and software are pair-matched, so ***make sure you get the latest version of the software when you do a firmware update.***



User Manual

## SPECULAR TEMPUS

(Firmware V3.8)

### Specifications :

- Input impedance : 1 MΩ.
- Output impedance : 500 Ohm.
- DAC / ADC resolution : 24 bits.
- Current consumption : ~100 mA.
- Weight : 0.6 Kg (1.2 lbs).
- Dimension : 12 (L) x 9 (W) x 5.5 (H) cm
- Power source : 9VDC (negative center).

### Key Features :

- Studio-grade reverbs & delays in a compact pedal.
- Stereo In - Stereo Out.
- 32 presets.
- 36 algorithms.
- Tap-Tempo, with 4 subdivisions.
- Versatile controls via Aux-In & Aux-Out, and MIDI connectivity.
- Algorithms customization via SpecLab® software.
- Analog dry-signal path.
- Effects Loop.
- Bright LEDs and LCD display.

Additional information is available at :

<http://www.gfisystem.com/faq1.html>

This product is designed and manufactured by :



Email : [info@gfisystem.com](mailto:info@gfisystem.com) (inquiry)

[gfi@gfi.com](mailto:gfi@gfi.com) (support)

Web : [www.gfisystem.com](http://www.gfisystem.com)

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