

Firmware update v3.8 introduces numerous enhancements and changes covering the following areas :

- Algorithms
- Subdivision
- Parameter Display
- Aux In
- Aux Out
- Edit Mode
- MIDI
- Knob Controls.
- Backup / Restore

This document provides detailed information on each topic. Those of you who were previously using older firmware version and is upgrading to v3.8 should take their time to review this document.

1. Algorithms

1.1 REVERBS.

New Algorithms :

A number of users have commented that ST lacks reverb algorithms tuned for non-ambience type music. To address this, we introduced a new reverb algorithm called *Nuance*, a simple yet versatile reverb algo that can cater to wide range of musical styles.

Note : *Nuance* replaces the *Tile Room* algorithm which we think is too generic and lacks uniqueness among others.

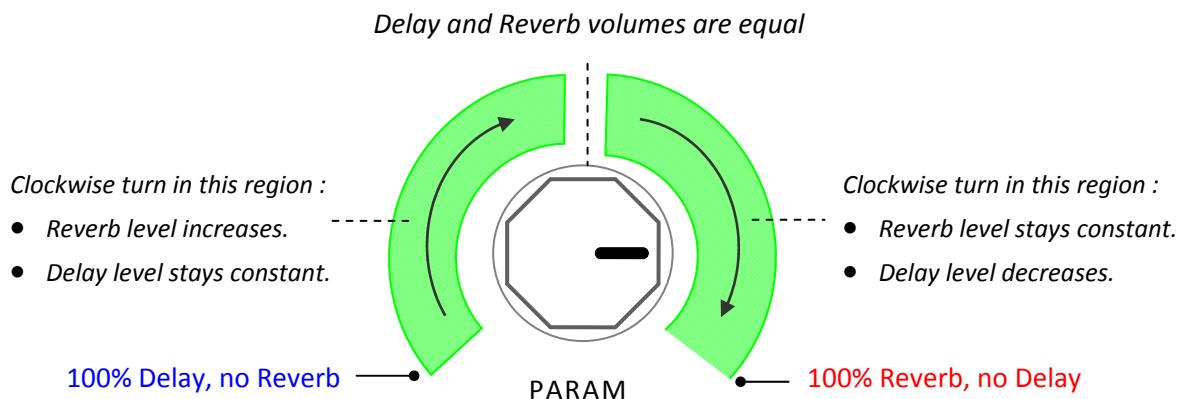
Enhanced Algorithms :

- The algorithm *Room*, *Modulated*, and *Vortex* were improved for better clarity.

- *+Digital*, *+Analog*, and *+Echo*.

Formerly, these reverb-delay combo algos have one knob (PARAM) controlling the amount of reverb, while the BLEND knob controls the overall effect level, hence there is no way to independently adjust the delay level by itself. For example, it's impossible to dial in a low delay volume and high reverb volume at the same time. This update brings the solution :

PARAM knob now controls the *MIX* between delay and reverb.



Together with the BLEND knob, you will be able to dial in any desired delay-to-reverb ratio and the overall effect level.

1.2 DELAYS.

New Algorithms :

4 new delay algorithms have been added. These algos are accessible from the Speclab editor under the 'Extras' category, fully customizable and can be saved as presets in the pedal. However they are not accessible from the pedal itself, only the original 32 algorithms can be accessed on the pedal itself. The 4 new delay algos are :

- **Tape Echo** - inspired by the EP-3 Echoplex tape delay unit. This is the only delay algorithm in ST that allows '*self-oscillation*'.

Real Parameters :

BLEND - wet level.

TIME - up to 1000 ms.

FLUTTER - sets the amount of random fluctuation in the delay time.

REPEATS - self-oscillation is achieved at max setting.

Virtual Parameters :

TAPE SATURATION - sets the degree of tape saturation.

FULTTER MODE - choose between *Normal* or *Warbly* flutter mode.

PING-PONG - sets the ping-pong factor.

- *Dynamic Dgtl* - a digital delay that *ducks* when input signal is present and blooms back to life when input signal ceases.

Real Parameters :

- BLEND - wet level.
TIME - up to 1000 ms.
THRESHOLD - sets the threshold level at which *ducking* action is released. Depending on the BLEND setting and the average strength of your guitar signal (low output vs high output pickup), this parameter is adjusted to achieve as smooth a release as possible. In general, set threshold low when signal strength is low, and set threshold high when signal strength is high.
REPEATS - sets the number of repeats.

Virtual Parameters :

- MOD-DEPTH - sets modulation depth.
MOD-SPEED - sets modulation speed.
PING-PONG - sets the ping-pong factor.
DUCK LEVEL - sets the signal level during ducking, i.e. the echo volume when input signal is present.

- *Dynamic Anlg* - Analog delay version of *Dynamic Dgtl*.
- *Dynamic Echo* - Echo delay version of *Dynamic Dgtl*.

Enhanced Algorithms :

- Expanded delay time - most of delay algorithms now have a 1 full 1 second delay time.
- PARAM knob in *Spectral* algo now functions as *Sweep Rate* control.

2. Subdivision

2.1 Setting subdivision parameter on the pedal.

Previously, subdivision parameter is set via the TIME knob, by turning the knob so that the marker points to one of the four subdivision symbols. In theory, this mechanism of setting the subdivision parameter poses no problem to the operation of the pedal because the TIME knob is irrelevant when delay time is set via Tap-Tempo (the only case when you need subdivision). However, we noticed that users often got confused, perceiving that changing the delay time changes the subdivision setting as well, and vice versa.

To avoid perpetuating this confusion, we decided to decouple the TIME knob from adjustment of subdivision :

Turning the TIME knob no longer have any affect in subdivision setting. Instead, subdivision setting can now be changed via EDIT mode.

2.2 Applying subdivision, even when not using Tap-tempo.

Subdivision in ST was originally envisioned to be applicable only to Tap-tempo operation. In this update we expanded the applicability of subdivision to tempo set via TIME knob as well :

When using BPM display mode, 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. With this new feature allows you to 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.

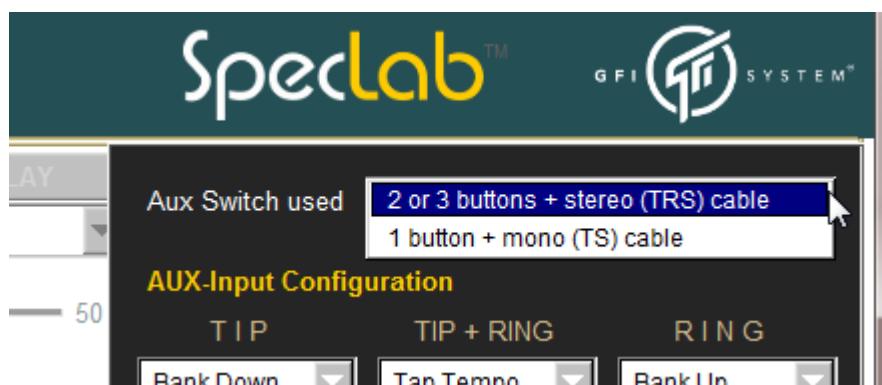
3. Parameter Display

Sometime you'd like to make a small adjustment to a parameter stored in a preset. Better adjustment will be made easier if you know the value that was originally stored in the preset. The new update allows exactly that. Now when a knob is turned, the preset value will be displayed, and subsequent turns of that same knob will show the previously set value.



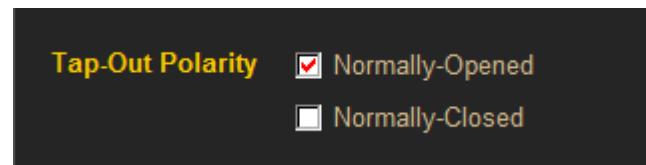
4. Aux In

- 2 new Aux functions : *Load Patch-A* and *Load Patch-B*
- Formerly the AUX in port only accepts connection to external switchbox via a TRS (stereo) cable. In this update we added an option to use a TS (mono) cable for a single-button



5. Aux Out

- SPST switch contact functionality has been removed. Aux Out now functions only as Tap-Tempo out.
- You can now set the tap output polarity to *Normally-Opened (NO)* or *Normally-Closed (NC)*. You can make the selection in SpecLab's Global Configuration menu.



6. Edit Mode

EDIT mode has been shuffled a little bit. New arrangement :



7. MIDI

- 4 new CC (Control Change) functions have been added to MIDI access : *Auto-swell*, *Warp-Triplet*, *Warp-Half*, and *Warp-Dotted*.
- You can now assign arbitrary CC numbers to any one of the fifteen CC functions. This mapping assignment is done in SpecLab's MIDI Configuration menu.

MIDI Channel	Channel 15	
CC# Mapping	CC# (0-99)	CC Value Range
BLEND	14	0 - 127
DECAY / TIME	15	0 - 127
PARAM	16	0 - 127
INTENSITY / REPEATS	17	0 - 127
LOAD PATCH A	18	any
LOAD PATCH B	19	any
BANK DOWN	20	any
BANK UP	21	any
BYPASS	22	0 = Bypass, 127 = Engage
KILL DRY	23	0 = Off, 127 = On
AUTO SWELL	24	0 = Off, 127 = On
TAP-TEMPO	25	any
WARP TRIPLET	26	0 = Off, 127 = On
WARP HALF	27	0 = Off, 127 = On
WARP DOTTED 8TH	28	0 = Off, 127 = On

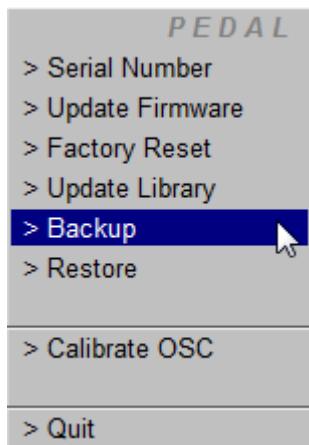
Confirm **Cancel**

8. Knob Controls

A number of users have commented that the BLEND knobs exhibits abrupt volume changes, e.g. hardly any wet signal is audible when BLEND is set below 10 o'clock direction. This has been addressed, the volume change is now smooth and gradual.

9. Backup / Restore

Backup and restore operations have been added to SpecLab 3.1.4



Backup operation allows you to create a full backup of all the presets stored in your pedal at once and store it in your computer. Restore operation will restore all your presets from a saved backup.