Stereo Triggered Sampler - Firmwares

How do I know what version I have?

Using a computer:

- Put your microSD card into your computer. Open up the `__Sample List__.html` file. At the top it will say "Firmware version XXX".

Without a computer:

1) Go into System Mode (*hold both Reverse, both Play, REC and REC Bank buttons down for a few seconds*).

2) Press and hold the Edit button. Look at the colors of Reverse buttons:

- Left Reverse = **White**, Right Reverse = **Green** ==> 1.5.x (latest version)
- Left Reverse = **White**, Right Reverse = **Yellow** ==> 1.4
- Left Reverse = **White**, Right Reverse = **Orange** ==> 1.3
- Left Reverse = **White**, Right Reverse = **Red** ==> 1.2
- Left Reverse = **Orange**, Right Reverse = **Orange** ==> 1.0 or 1.1 (see note below)

3) If the Reverse buttons stay Orange, then you have v1.0 or 1.1. To tell the difference between v1.0 and v1.1, press and hold just the left Reverse button in System Mode. If both Reverse buttons turn White, then you have v1.1. If they remain Orange, you have v1.0.

Change log:

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v1.5.2

Released: October 8, 2022

Download: Firmware v1.5.2

Improvements:

- **Smaller firmware update files**: The size of the firmware file has been reduced, making the firmware update .wav file smaller by about 57% (from 5:55 to 3:22).

Bug Fixes:

- **Long Fade In/Out Envelope times caused clicking in audio under certain circumstances**: When the Fade In/Out Envelope Time was set longer than the Trigger Delay Time, firing a play trigger into a channel that's already playing audio would cause the audio to re-start before the fade out had completed, causing a pop or click in the audio. Another circumstance was if the Fade In/Out Envelope Time or Percussive Envelope Time was set longer than time between Start Pos and the actual start of sample data, playing a sample in reverse would result in extra silence or glitchy audio. Bug appeared in v1.5, fixed in v1.5.2.
- **Recording Sample Rate not presevered across reboots**: The Recording Sample Rate can be set in System Mode up to 96kHz. However, the next time the STS started up, the rate would be set back to 44.1kHz, yet the System Mode lights would indicate it was still in 96kHz. One symptom was that samples would play back at the wrong pitch. Bug fixed in v1.5.2.

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v1.5.1b

Released: June 28, 2022

Download: Firmware v1.5.1b

New Features:

- **Force Reload SD Card**: Hold down four buttons: Bank 1, Bank 2, Rec Bank and Rec, for about 2 seconds. Release the buttons when the startup sequence of lights displays.

Bug Fix:

- **Unrelated sample file played in certain circumstances**: When Start Pos was high, within 0.5s of the end of the file, and Length was just under 50% (Percussive mode) but high enough such that a percussive burst longer than 0.5s was to be played, then the STS would overrun the sample data and play unrelated data (usually a previously played sample). Bug appeared in v1.5, fixed in v1.5.1b.

  (Note: v1.5.1a was not released)

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v1.5

Released: June 6, 2022

Download: Firmware v1.5

New Features:

- **Looping Fade Time**: The STS can make a longer crossfade between the end and start of a loop

(adjustable from 0.36ms to 250ms). This results in a smoother, click-free loop.

- **LED Color Adjustment**: You can now adjust the red, green, and blue amounts of each button, letting you match the colors between buttons. All new units ship pre-calibrated.
- **Maximum Recording Rate**: You can now record up to 96kHz.
- **Auto Increment Sample Slot on Record**: You can enable a mode that moves to the next sample slot each time you finish a recording that was started with the Rec Trigger jack.
- **REC button flashes when you change sample slots**: The REC button flashes red or white when you turn the REC Sample knob to indicate if the slot is full or empty.

Bug Fix:

- **PLAY button stayed dim red after a recording into an active slot**: Fixed. The PLAY button now indicates the selected sample slot is full immediately after recording into a previously empty slot.
- **STS hangs on boot in some circumstances**: Fixed. An issue where the STS could hang on boot while searching for missing sample files is now fixed.

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v1.4g

Released: August 4, 2020

Download: Firmware v1.4g

Bug Fix:

- **Sequencing Start Pos Glitch Fixed**: Using a sequenced CV into Start Pos with gates/triggers into Play Trig would sometimes play the wrong start position if Length was < 50% and triggers were fired fast enough. Fixed.

Intermediate versions:

(1.4f released June 17, 2020. Improved performance of start-up sequence, and more types of "extended" wav file formats supported)

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v1.4e

Released: October 20, 2017

Download: (not available, please use v1.4g)

New Features:

- **Reduced latency** by pre-loading each sample file in a bank the first time each sample is played.
    - Latency from trigger until audio output as low as 0.7ms (with Trigger Delay turned to 0, see below)
    - The first time a sample is played after the bank is changed, latency is typically 5ms (may be more depending on wav file's sampling rate and bit depth). Subsequent times the sample is triggered the latency is 0.7ms
- **Variable "Trigger Delay"**: Edit + REC Sample knob
    - Compensates for slew/lag when using a CV Sequencer with the Play Trig jack and the either the Sample CV or 1V/oct jack
    - This feature also allows for latency reduction compared to prior firmware versions, which had a built-in delay of about 14ms
    - After receiving a trigger on the Play jack, the STS will wait the specified delay period before reading the 1V/oct and Sample CV jacks.
    - To use: Press Edit and turn Rec Sample knob. The knob's numbers (1-10) correspond to a delay amount:
        - PCB v1.0a: ranges from 0ms delay (knob at 1) to 14.3ms delay (knob at 10)
        - PCB v1.1: ranges from 0ms delay (knob at 1) to 1.9ms delay (knob at 8), and extra-long delays of 4.1ms (knob at 9) and 8.2ms (knob at 10)
    - *Note: If upgrading to v1.4 causes your sequencer and STS to not play well together, set the Trigger Delay to "8" or higher*
- **Monitoring on/off per channel**: Left and right channels can monitor the inputs separately.
    - Pressing PLAY on one channel while monitoring is on will turn monitoring off for just that channel.
    - Only works in Mono mode.
    - Monitor LED blinks to indicate split monitoring.
    - *Typical use would be to patch Right OUT -> Left IN, then Left OUT -> mixer. Then record the right channel's playback.*
- **Start-up banks**: Can set the default bank to be loaded at start-up.
    - Hold down Edit + Bank 1 + Bank 2 + left PLAY (Save) for 1 second. Current bank selection will be saved as the default after power on.

- **Envelopes can be turned off**: Both percussive envelope and longer playback fade in/out envelope
    - Two types of envelopes can be turned on or off:
        - Percussive Envelopes: this is the decay-only envelope applied to playback when Length < 50% (actually an attack-only envelope when Reverse is on)
        - Fade In/Out envelope: this is a very short envelope applied to any sample that's played with Length > 50%. It reduces clicks when starting, stopping, or looping playback.
    - In System Mode, left channel Reverse button sets the envelope settings:
        - Orange: Both envelopes enabled (default)
        - Red: Percussive envelope disabled
        - Yellow: Fade In/Out envelopes disabled
        - Off: Both envelopes disabled
    - Turning off all envelopes is recommended when playing CV sample files (wav files with clocks/gates, sequencer CV, or slow LFO waveshapes, etc).
    - Turning off Percussive Envelopes is interesting when doing "Granular" patches (see User Manual for example patches)
    - Can toggle Percussive Envelope mode by turning left side Length to 0, and holding left side Reverse for 2 seconds: Reverse button will flash/flicker
    - Can toggle Fade In/Out Envelope mode by turning left side Length to 100%, and holding left side Reverse for 2 seconds: Reverse button will flash/flicker

Fixes:

- After exiting System Mode, right side Length was set to 0, until the knob was moved. Fixed.

Intermediate versions: (1.4beta-1 released October 13, 2017) (1.4beta-2 released October 17, 2017: changed Length behavior) (1.4c fixed sticky right length knob when exiting system mode) (1.4d fixed bugs that appeared in v1.4beta2) (1.4e fixed bugs that appeared in v1.3) (1.4f more filtering on 1V/oct jacks, and quantized mode plays better with tracking comp setting)

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v1.3

Released: (beta released Sept 26, 2017)

Download: Firmware v1.3 WAV file

New Features:

- **Drag-and-dropping WAV files to SD card works better**:
    - Adding WAV files to an existing folder now adds the files to the bank if there are empty slots.
    - If there are no empty slots, the files can be added using Edit + Next File.
    - On boot, the STS will try to fill empty slots in banks by searching in the bank's folder:
        - If the bank contains files from multiple folders, the lowest-numbered sample file's folder is used.
- **Adjust 1V/OCT jack offset**
    - Hold down Bank 1 + Bank 2 + Edit while tapping either REC or REC Bank button.
        - REC shifts downwards, REC Bank shifts upwards.
    - Settings are saved in memory (save using Edit + Save after making necessary adjustments).
    - If there is a difference in pitch between the audio being monitored and playback, or a difference in playback pitch between channels, then this may need to be adjusted. All units are calibrated in the factory, but variations in power supplies and grounding configurations of cases may cause DC offset to appear in a user's system.

Fixes:

- Creating a folder with an exact color name in all lowercase added the folder twice. Fixed.
- Edit+Next File while in an empty slot now searches in the folder of the first filled slot.

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v1.2

Released: (released Sept 8, 2017)

Download: Firmware v1.2 WAV file

New Features:

- **Quantize 1V/oct jack** added to System Mode. Each channel can be on/off seperately. Quantization is to semitones (12 notes per octave).
    - In System Mode, tap Bank button for either channel to toggle state.
    - Blue = On (jack is quantized to semitones)
    - Orange = Off (jack is not quantized)
    - Only effects 1V/oct jack, not the Pitch knob
    - Setting is saved in settings file on microSD card
- **Reset tracking compensaion** to 1.0000

    - Holding Edit+Rec+RecBank
    - Updating from v1.0 or v1.1 to v1.2 or later automatically sets tracking to 1.0000 the first time it is loaded (this is necessary because tracking is calculated differently in v1.2 and later)

- **Auto Stop When Sample Changes**: "Always keep playing" mode added. There are now three Auto Stop modes. The modes determine what happens when the sample is changed while a sample is being played.

    - Red = Always Stop: The sample instantly stops playing. If looping is on, the new sample starts playing immediately.
    - Blue = Change When Looping: The sample keeps playing normally -- unless it's looping, in which case it stops immediately and the new sample starts.
    - Green = Always Keep Playing: The sample keeps playing normally. If it's looping then the new sample begins when the previous sample reaches the end.

Fixes:

- 1V/octave tracking is tighter, +/-0.4 cents over C0-C3

Changes:

- Faster entry into System Mode (2 seconds, instead of 4)
- Pitch knob's plateau around the center detent is larger, and gradually slopes away from center to make it easier to tune to other sources

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v1.1

Released: August 28, 2017

Download: Firmware v1.1 WAV file

Changes:

- On boot, color of lights while index file is loading shows minor version number
- In System Mode, holding down Reverse displays firmware version on Reverse buttons (White, White = 1.1)

Fixes:

- Tapping Reverse after changing Channel Volume prematurely updated the Start Pos setting. Fixed.
- Scrub End setting for samples was not loaded after reboot until Edit button was pushed. Fixed.

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v1.0

Released: August 10, 2017

Initial Release

Features for future firmware versions:

- Allow for internally patching OUTs to INs for self-recording
- Support AIFF files
- Write index file in background, for faster boot time and "Edit+Save" time