

Stereo Triggered Sampler

4ms Company

New features in Firmware v1.5

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What version is my STS?

To determine the version you have, follow these steps:

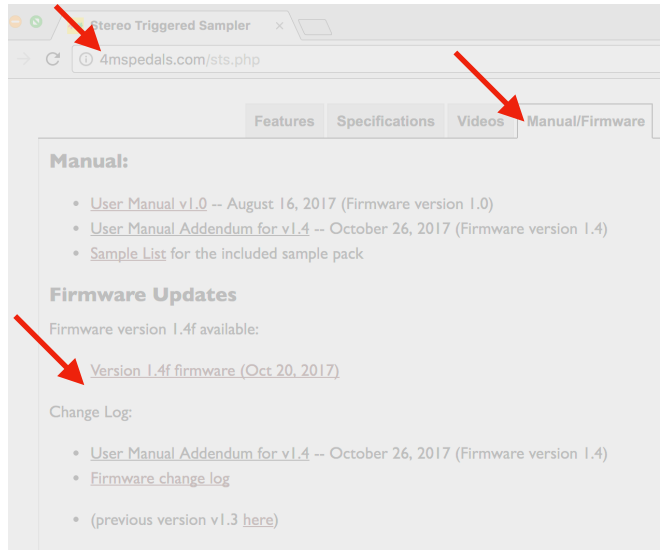
1. Power on the STS.
2. Enter System Mode: Hold down both **Reverse** buttons, both **PLAY** buttons, the **REC** button, and **Rec Bank** for four seconds.
3. Release the buttons when you see all the button lights change and an animation on the Play/Monitor/Busy/Play lights.
4. Press and hold the **Edit** button. Look at the color of the left and right side **Reverse** button lights:
 - Left Reverse = **White** Right Reverse = **Green** → 1.5 (*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*)

Note: if both Reverse buttons stay Orange when you press Edit, you have v1.0 or v1.1. To tell the difference press and hold the left Reverse button. If both Reverse button lights turn white, you have v1.1. If they remain orange, you have v1.0.

How to Upgrade Your STS's Firmware

You can update the STS firmware by playing a special audio file into the **Left Record In** jack. *Note: the upgrade procedure is the same as the one described in the User Manual.*

1. Go to <http://4mscompany.com/sts.php> and click "Manual/Firmware".
2. Download the .wav file for "Version 1.5 firmware".
3. After the download completes, open the .wav file with an audio playback program such as QuickTime Player, Audacity, VLC, Windows Media Player, etc. *Note: we do not recommend using high-end software such as Ableton or iTunes, etc. because of the possibility of the playback being "enhanced" or "EQ" being applied or otherwise altered.*
4. Unplug all cables on the STS and power it up.
5. Enter System Mode by holding down both **PLAY** buttons, both **Reverse** buttons, **REC** and **REC Bank** buttons for four seconds.
6. Release those buttons when you see the lights change and an animation on the Play/Monitor/Busy/Play lights.
7. While in System Mode, hold down left side **Bank**, right side **Bank**, **REC**, and **REC Bank** for four seconds. Keep holding them down until the lights change. Release the buttons. You are now in bootloader mode.
8. The left side **PLAY** button should be green. If the left side **Reverse** button is green, tap it once to restart the bootloader. If you got here by mistake, you can exit the boot loader by tapping the **PLAY** button when it's green. The **Monitor** and **Busy** lights should be flashing and alternating.
9. Connect a computer or smart phone's audio output to the **Left Record** jack. Either a stereo or mono cable is fine. Remove your phone case, it may be preventing the cable from fully plugging in.
10. Connect the **OUT(L)** jack to an amp/speakers so you can listen. You may hear some background noise that comes and goes, that's normal. Turn the amp/speaker volume down but not off: this is going to be LOUD!
11. **Set the computer/phone's volume to 100%**. Set the audio player software to 100% volume. Turn off all audio and vibrate notifications (use Airplane mode). Close any applications that make notification sounds such as Facebook.
12. Begin playing the file. Immediately you should see the white LEDs and the **Busy** and **Monitor** LEDs flash a lot. The buttons will also start to light up in colors, one by one.
You should be hearing the sounds very loudly out the **OUT(L)** jack.
13. If the sound stops before the file is done playing, there was an error. The **Reverse** light will turn green and the four LEDs will turn on.
 - a. Stop the file and rewind to the beginning.
 - b. Check all cables are plugged in tightly.
 - c. Tap the **Reverse** button. It should turn off and the **PLAY** button will turn on green again.
 - d. Play the file again from the beginning.
14. If the file loads successfully, the STS will beep a few times and then boot.



Tip: some audio cards play a pop when they first start playing a file. If this happens, the Reverse light will trip as soon as you start playing. One way to overcome this is to hit the Reverse light immediately, before the noise starts playing (there's a 2 second lead time of silence). Or a better way to get around this is to use a different device (phones seem to work better than computers).

New Features in v1.5

New Maximum Recording Sample Rate of 96kHz

You can now record up to 96kHz. Your SD card must be fast enough to handle the data, of course. We highly recommend not using the STS for playback while you record at 88.1kHz or 96kHz.

To set the recording sample rate:

1. Enter System Mode as normal: hold down both **PLAY** buttons, both **Reverse** buttons, **REC**, and **REC Bank** for two seconds, then release when you see all the lights change color.
2. Tap the **REC Bank** button to cycle through the four available sample rates:
 - Orange: 44.1kHz
 - Yellow: 48kHz
 - Cyan: 88kHz
 - Blue: 96kHz
3. Save your changes by pressing and holding **Edit** + left side **PLAY (SAVE)** for two seconds.
4. To exit without saving, hold down the same buttons you used to enter system mode, but only for a moment.

Adjustable Fade Time (Smoother Looping)

The STS now performs a longer fade-down and fade-up at the end and beginning of playback when looping. You can adjust the amount of fade time from 0.36ms to 250ms. The default value is 24ms, which has been found to remove clicking without causing a noticeable “fade” effect.

To adjust the Looping fade time, hold down **Edit** while turning the left side **Length** knob. The **PLAY** buttons will flash white rapidly while you turn the knob. If you turn **Length** all the way down, the fade time will be 0.36ms. This value will increase as you turn the knob up, until it reaches a maximum of 250ms when the knob is fully clock-wise. The default value is 24ms, which is about 8 o'clock.

Previous versions of firmware allowed you to select either no fading, or 0.36ms.

LED Color Adjustment Mode

You can fine-tune the colors of your LED buttons. This is especially handy if you have trouble telling the bank colors apart, or if two of the two Bank buttons have slightly different hues.

All new STS units shipped after March 2022 (serial numbers 1343 and up) will be factory calibrated. If you have an earlier STS, or if you wish to fine-tune your unit, you can follow this procedure:

1. Enter System Mode as normal: hold down both **PLAY** buttons, both **Reverse** buttons, **REC**, and **REC Bank** for two seconds, then release when you see all the lights change color.
2. Hold down both **PLAY** and both **Bank** buttons for two seconds, and release when you see the lights change color. The lights will turn red, green, blue, and then white.
3. Tap a button to select it for editing and adjust the red, green, or blue components by turning these knobs:
 - Adjust the Red amount using the **Length 1** knob
 - Adjust the Blue amount using the **Rec Sample** knob
 - Adjust the Green amount using the **Length 2** knob
4. At any point, you can also tap the **Edit** button to cycle through the 10 bank colors. This is useful for checking your work (especially with the Bank buttons).

5. *Note: It's important to match the colors of the small buttons to each other. It's also important to match the colors of the large **PLAY** buttons to each other. However, it's not so important to match the colors of the **PLAY** buttons to the small buttons.*
6. To save your work, press and hold Edit + Play 1 (Save) for two seconds.
7. If you want to cancel your work, you can safely power cycle the module.
8. If you want to preview your work without saving, press Edit + Reverse 2 (Revert) for two seconds. You'll be able to play the STS normally with your new colors, but when you power down, your changes will be lost. If you decide you like your new colors, make sure to go back to LED Color Adjustment mode and save your work before powering down.

Auto Increment Sample Slot on Record Mode

This is an advanced feature that allows you to fill a bank with ten samples recorded consecutively, without moving the Rec knob manually.

When enabled, the STS will automatically increment the **Record Sample** slot number each time you finish a recording that was started with the **Rec Trigger** jack. When it gets to slot #10, it wraps back to slot #1. If at any time you turn the **Record Sample** knob, it'll reset the slot number to wherever you turned the knob.

A typical way to use this would be to press **Rec Bank** to enter empty bank. Turn **Rec Sample** to 1. Then start playing audio into the **RECORD** jacks. Make sure recording is armed (hold down the **REC** button for one second). Patch a trigger signal into the Rec Trigger jack (perhaps from a manual foot switch, or a period clock/gate signal). The first time the STS receives a trigger, it'll start recording into slot 1, and the next trigger will make it stop. The next two triggers will make it start and stop recording into slot 2. The next two triggers will make a recording into slot 3, etc. When it gets to slot 10, the next two triggers will make it record into slot 1.

Note that if you use the **REC** button to start recording, this feature will have no effect: you must use a trigger to start the recording for the slot number to increment when the recording stops.

To enable this mode, power down the STS and insert the SD card into your computer. Open the settings.txt file (located in the _STS.system folder) with a text editor. If you've already updated your unit to v1.5, then you should see these lines at the bottom:

```
[AUTO INCREMENT REC SLOT ON TRIG]
```

```
No
```

Edit the word No and change it to Yes. Save the file (make sure it's saved as text-only, not as RTF or anything else). Then eject the card and insert it back into the STS. If you just updated and don't see these lines, you can paste them in at the bottom (make sure there are no extra spaces at the start of the lines).

Enhancements

Rec button flashes when you change samples

The REC button will flash when you turn Rec Sample knob to a new sample slot. If it flashes dim red, the slot is empty. If it flashes dim white, there's already a sample in the slot.

Bug Fixes

PLAY button doesn't stay dim red after recording into that channel's slot.

Fixed an issue where the STS could potentially hang on boot while searching for files on the SD card.