

Percussa SSP Quick start Manual

V1.0

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Contents

1 Acknowledgements	4
2 Getting started	4
2.1 microSD card	4
2.2 Power	5
2.3 Mount the SSP into your rack	6
2.4 Protective sticker display	6
3 SSP overview	6
4 Menu System	7
4.1 How can I navigate the different pages of a menu?	8
4.2 How can I switch encoder page?	8
5 Global Menu	8
5.1 Presets	8

5.1.1	How can I switch presets?	8
5.1.2	How can I rename my current preset?	9
5.1.3	How can I save my current preset?	9
5.1.4	How can I save my changes to a new preset?	9
5.2	How do I apply and change global effects?	9
5.3	Global Settings	9
6	Network Menu	10
6.1	How can I add modules to the network grid?	10
6.2	How to connect modules?	10
6.2.1	Example: send the sine wave of the LFO to the output module	11
6.3	How can I quickly see if a valid patch connection exists between 2 modules?	12
6.4	How can I use an external module for modulation on the SSP?	13
6.5	How can I assign the output module to a specific output channel on the SSP?	13
6.6	How can I scale modulation signals which are summed together to avoid clipping?	14
7	Processor Menu	14
7.1	How can I change the parameters of my modules?	14
7.2	Wavetable Oscillator	14
7.3	Granular module	15
7.4	Sampler module	15
7.5	Step Seq module	15
8	Recorder menu	15

9 Percussa Forum	16
10 Sample License Agreement	16
11 Legal	16

1 Acknowledgements

We'd like to thank, Matt, one of our backers, for his support and contribution to this manual.

2 Getting started

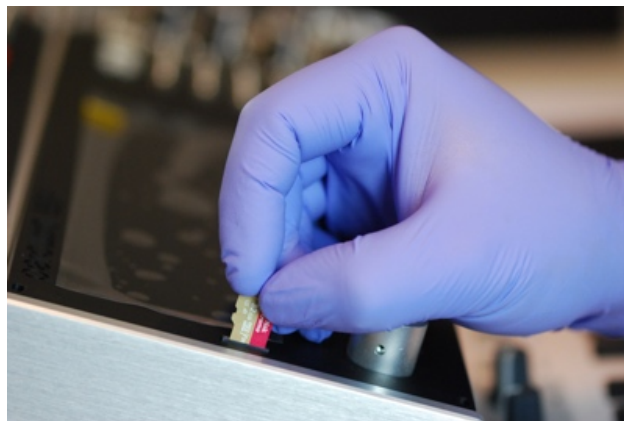
The package you received should contain the following items:

- SSP Eurorack module
- microSD card + adapter
- eurorack power cable
- set of 4 bolts and washers

Before mounting the SSP into your rack and start using it, please read the following sections carefully.

2.1 microSD card

Put the microSD card into the microSD card slot as shown in the photo below (no need to wear purple gloves). Make sure the card is inserted fully by gently pushing on the card.



IMPORTANT All software and data is read from / written to the card, and the SSP needs the card to be in the slot at all times, otherwise it will stop running and can potentially crash. Pulling

out the card while the SSP is running might corrupt the partitions on the card with potential data loss as a result. If you need to remove the card, first turn off the power to the SSP, wait a second or two and then pull out the card.

NOTE We're working on a software upgrade that will remove the requirement to keep the SD card in the slot while the SSP is running. When this update becomes available we'll notify all users via the forum or email.

2.2 Power

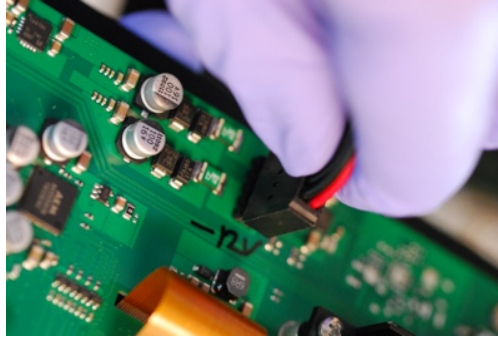
When mounting your SSP into your rack, please make sure your power supply can at least supply the following to the SSP. The SSP does not need the +5V power rail.

- 1000 mA @ +12V
- 200 mA @ -12V

Connect the power cable to the +/-12V connector on the back of the SSP's motherboard and connect the other end to the bus board in your rack. Verify that the red stripe of the cable supplied with the SSP matches up with the -12V mark on the SSP's motherboard near the connector, as well as with the -12V mark on your bus board's power connector. The SSP has reverse power protection near the power connector to protect against accidental reverse connection. (Again, no need to wear purple gloves.)

IMPORTANT Always use the power cable which was delivered with the SSP, and do not use a normal grey standard eurorack flat cable. Make sure to connect the cable on your bus board as close as possible to where the power is supplied to your bus board. Do not daisy chain several bus boards and then connect the SSP at the end, because it will result in poor performance.





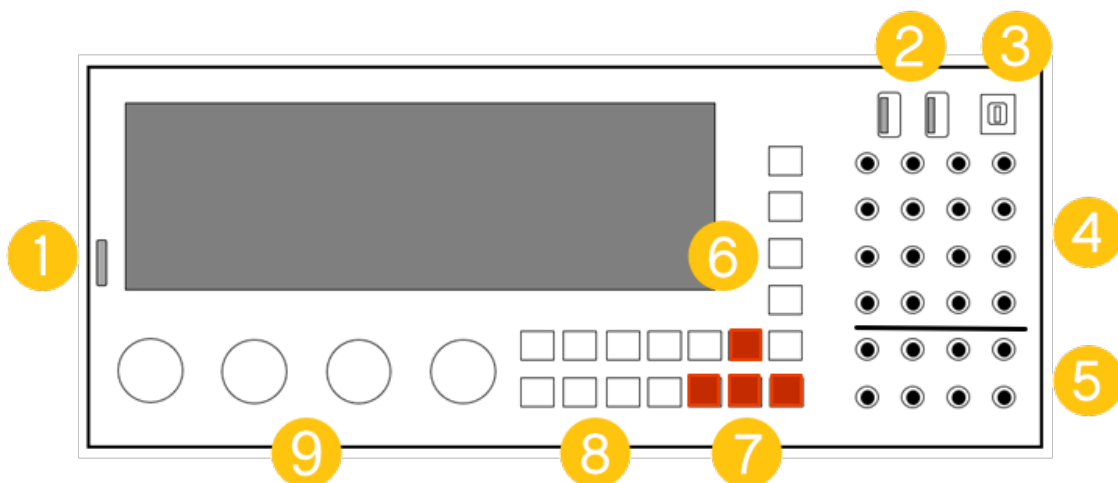
2.3 Mount the SSP into your rack

Use the 4 bolts and washers to mount the SSP into your rack.

2.4 Protective sticker display

Remove the protective sticker (yellow corner) from the display.

3 SSP overview



1. Ultra high speed microSD card slot.
2. 1 high speed USB host port (leftmost port) with USB ethernet adapter support.
- 1 full speed USB host port (middle port) with USB MIDI keyboard support.

3. 1 USB device port (rightmost port) with USB Audio Class 2.0 support (supports recording into your Mac/PC).
4. 16 DC coupled inputs supporting up to 192kHz/32bit with -5V..+5V range, accepts audio, cv, gate ... signals.
5. 8 DC coupled outputs supporting up to 192kHz/32bit with -5V..+5V range, produces audio, cv, gate ... signals.
6. 4 Menu buttons to switch between menus on the SSP.
7. 4 arrow keys and shift left / shift right buttons.
8. 8 soft keys which take on certain functionality based on where you are in the software and what you are doing.
9. 4 encoders to change parameters (filter cutoff, for example) and make selections in various menus.

4 Menu System

There are four menus on the SSP:

1. **Global menu (G):** the menu where presets or patches¹ can be loaded, saved, and renamed. The second page contains a global effects section, and the third page is used to switch sample rate and hide/show sample rate and cpu load status near the top of the display.
2. **Network menu (N):** this menu displays a patching grid of 16 pages, each with 8 module slots. This grid allows you to build patches by adding modules and patching them together. You can navigate in the grid using the cursor keys or first two encoders, which changes the currently selected module.
3. **Processor menu (P):** this menu shows you a close-up of the module currently selected in the network menu, such you can change its parameters, just like you would with any other module in your eurorack case.
4. **Recorder menu (R):** from this menu you can record the input or output signals of the SSP. You can switch between the two recorders at all times and arm the channels you want to record. The SSP can record any type of signal both internally or externally; it doesn't care whether its an audio, cv or gate signal. The recorded files are stored as multichannel WAV files on the SD Card.

The network menu is the default menu when powering on the SSP.

¹presets and patches are used interchangeably throughout this manual.

4.1 How can I navigate the different pages of a menu?

Every menu has one or more pages. Depending on the menu you are in, the pages have different roles.

For example, in the network editor you use the left/right cursor buttons to navigate in the 16 page patching grid. However, in the processor menu, the pages might contain additional parameters and settings for a module.

To switch to a different page use the "left" or "right" button of the keypad. In the network editor you can use the first two encoders as well.

4.2 How can I switch encoder page?

In some menus, such as the global and processor menu, you will notice 2 parameters per encoder. The parameters you are currently editing with the encoders are shown in red. To access the other parameters use the up/down (+enc/-enc) buttons of the keypad.

5 Global Menu

5.1 Presets

You can store up to 200 presets or patches on the SD card of the SSP. At the moment, there are 2 presets which we created for you, the other 99 presets are default / blank presets. The presets are stored in a folder called "presets" on the card. If you want to backup your presets you can make a copy of this folder on your computer.

5.1.1 How can I switch presets?

Go to the global menu. On the first page, you'll see the name of the preset that is currently loaded.

You can use the first encoder to scroll through the list of presets, and you can load a different preset by pushing the 1st encoder. You can also use the buttons "NxtPr" / "PrvPr" to switch presets.

5.1.2 How can I rename my current preset?

- Go to the global menu.
- Press "Ren Pr" in the Global menu
- Use 2nd encoder to change / select a character. To navigate between characters in the name use the left/right buttons on the keypad.
- When you are done renaming, press "Ren Pr" again and then press "Wri Pr" to save the changes.

5.1.3 How can I save my current preset?

- Go to the global menu.
- Press "Wri".

5.1.4 How can I save my changes to a new preset?

- Go to the global menu.
- Press "Wri N" and your (modified) preset will be created on the next available preset slot.

5.2 How do I apply and change global effects?

- Go to the second page of the Global menu using the "right" arrow button on the keypad.
- Toggle delay or reverb on or off using the soft keys.
- Use the encoders to change the delay/reverb settings.

5.3 Global Settings

An overview + description of all global settings can be found on the **forum**.

6 Network Menu

Adding modules in the network grid is the first step in building up any patch. After adding modules, you'll patch them together, which we'll discuss in the next sections.

6.1 How can I add modules to the network grid?

- Switch to the Network menu.
- Use the 1st (left most) encoder to move along the x axis of the grid. Alternatively, you can use the left and right arrow keys.
- Use the 2nd (2nd from the left) to move along the y axis of the grid. Alternatively, you can use the up and down arrow keys.
- Once you have highlighted a slot in the grid, push the < button or the > button until you find the module you want. When you are at the end of the list the choices will start over again.
- Once you found the module you want you can navigate to another slot in the grid to insert another module, and so on. When you are done you can start connecting the modules and changing their parameters.

6.2 How to connect modules?

The best way to understand how to connect modules and create modulations between modules, is to explore the presets we created and that were shipped on the SD card that came with the SSP. Below are the steps to create your own patch (preset).

Once you have added 2 or more modules to the network grid you can begin to connect them:

1. Hold down either shift left or shift right to select the left or right section of the grid.
2. Push the corresponding soft key for the module in the section you are highlighting. The 8 soft keys correspond to the group of 8 module slots you are highlighting.

Once the connection is created you will notice that the modules you connected will get a cyan border. In the photo below you can see how the WT Osc has been connected to the Env, Output, LFO and input modules.



The modules are now connected, but they are not sending or accepting any modulations yet. Follow these steps to change what they will send and what they will accept:

1. Select a module that will output a signal to another module. Using the 4th encoder scroll through the **list of modulation outputs** on the right. Enable the modulation outputs you want to use by pushing the encoder.
2. Select the module in the grid that will receive a signal from another module. Using the 3rd encoder scroll through the **list of modulation inputs** on the right. Enable the modulation inputs you want to use by pushing the encoder.

Each time an active modulation connection is created, you will notice one or more cyan arrows between modules. You will also notice the number of incoming connections displayed near each modulation input. For example, the Output module might show Output: input [2] to indicate it is receiving 2 signals.

Repeat the above steps until you have created all the modulations between the modules. Keep in mind that to hear any sound, you will need to have created a "modulation" between a module such as the LFO and the Output module (e.g. enabling the Sine: Out of the LFO and enabling the Output: input of the Output module).

Once you have enabled all the modulation inputs and outputs that you want to use, keep in mind you can easily connect different modules together using the shift left/right and soft keys, and the synthesis engine will automatically create modulation connections for you based on the inputs and outputs you enabled, which can save you a lot of time exploring different modulation possibilities.

6.2.1 Example: send the sine wave of the LFO to the output module

1. put LFO and OUT module on the grid

2. go to LFO in grid
3. hold shift-left or shift-right and press the corresponding button for the OUT module in the grid (use 8 soft keys). LFO and OUT module now have blue border
4. while still on the LFO module use encoder 4 to scroll to **Sine: Out: In** and press it to enable the output
5. now go to OUT module in grid
6. using encoder 3 scroll to and enable (press) the **Out: In** in the leftmost list on the right

6.3 How can I quickly see if a valid patch connection exists between 2 modules?

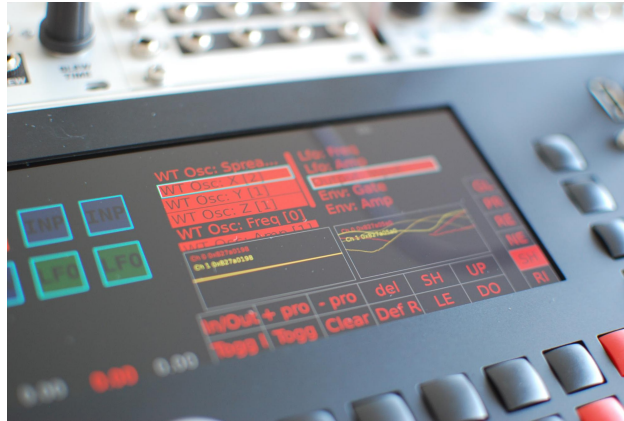
To check if a valid patch connection exists between 2 modules you can check the modulation inputs/outputs of both modules in the network (columns on the right).

Navigate to the first module and notice the enabled outputs on the right (rightmost list). Next, navigate to the second module and notice the enabled inputs on the right (leftmost list). The enabled inputs and outputs that match up will have a valid connection. You will also notice a number such as [2] next to the enabled input showing the number of incoming connections, and the grid will show a cyan arrow between the modules.

When looking at the visualization in the photo below you see that the WT Osc is modulating inputs of the LFO and Output module.



In the photo below, the selected module (WT Osc) can be modulated in X, Y, Z and Amp, and send its signal to the output module (modulation outputs, output: input).



6.4 How can I use an external module for modulation on the SSP?

- Insert an "input" module on the network grid.
- Go to the Proc editor.
In the Proc editor you will see 4 scopes. Each scope represents the incoming data of 1 input connector. Since there are 16 inputs, there are also 16 scopes, but they are divided over 4 different pages. Use the left or right of the keypad to switch to another page/scopes until you find the scope of the input you'd like to use and make sure to enable to corresponding button using one of the 8 soft keys. For example, if the signal you want to use is on the first page the leftmost scope, you press the "1" button to send the signal to the "1" output or the "5" button to send it to the "5" output of the input module.
- Patch the input module with another module in the grid. Use the output you enabled in the proc editor menu (in the above example, either 1 or 5).

6.5 How can I assign the output module to a specific output channel on the SSP?

- Select the output module in the network.
- Go to the Proc editor.
- Press one of the 8 soft keys to enable the output channels for the selected output module.

You can have multiple output modules in your patch (preset) and you can route signals multiple times to different output jacks. The signals are automatically summed together.

6.6 How can I scale modulation signals which are summed together to avoid clipping?

When you create multiple modulation connections into one module, you might need to scale the signals to avoid clipping. This is for example the case if you have multiple signals going into an input of an Output module. The Output module will show Output: input [2] in the leftmost list on the right side of the screen.

To scale the incoming signal, make sure the Output: input [2] is selected (use the 3rd encoder to highlight it). Next, hold the shift-left button and turn the 3rd encoder. You will notice the scaling number on the scope showing the incoming signals change. The range is 0.0 .. 1.0 and it wraps around automatically as you turn the encoder. When done, release the shift-left key and stop turning and release the left-shift key.

The same works for outgoing signals as well, go to a module that sends a signal (e.g. an LFO), then highlight the output using the 4th encoder (e.g. Sine: Out) and then hold the shift-right button and turn the 4th encoder. Release the shift-right and stop turning when you are satisfied with the scaling value.

Both input and output scalings can be combined to achieve multiple different mixes of signals as you wish. Summing is always done automatically but scaling is up to you.

7 Processor Menu

7.1 How can I change the parameters of my modules?

- Select the module in the network that you'd like to change parameters for.
- Go to the Proc menu.
- Use the 4 encoders to change the parameter values of the selected module.

Per default the group of parameters in red are the ones which you can change using the encoders. To switch to the other group of parameters (in grey), press enc + or enc - to switch to the other group, and again use the encoders to change parameter values.

7.2 Wavetable Oscillator

An overview of the wavetable oscillator can be found on the forum using the link below
<https://forum.percussa.com/t/wavetable-oscillator/232>

7.3 Granular module

An overview of the granular module can be found on the forum using the link below
<https://forum.percussa.com/t/granular/199>.

7.4 Sampler module

An overview of the sampler module can be found on the forum using the link below
<https://forum.percussa.com/t/sampler-module/200>.

7.5 Step Seq module

An overview of the step sequencer module can be found on the forum using the link below
<https://forum.percussa.com/t/step-sequencer-module/201>.

7.6 MIDI (+MPE) module

An overview of the step sequencer module can be found on the forum using the link below
<https://forum.percussa.com/t/midi-module-details-and-mpe-non-mpe-modes/275>.

8 Recorder menu

You can record all the inputs and/or outputs of the SSP at 192kHz, 96kHz or 48kHz at 32 bit. The recordings are stored as multichannel WAV files on the SD Card. The SSP does not care whether a signal is an audio signal, CV or gate, so you can record whatever you want from your eurorack system into the SSP.

You can switch between the input/output recorders using "SwRec". You browse through channels using the up/down keys and use the Arm key to choose which channels you want to record. With Mon you can enable monitoring, and with MOut1-8 (second page) you can choose what output channel to monitor to for the currently selected input channel. Similarly, after recording you can use the Play button to audition the recording, and POut1-8 (third page) can be used to choose to which output channel to play back the currently selected recorded channel.

Watching a video is easier to understand how this works, check out the latest video where we show the Multitrack Recorder in the SSP works. In the video we hooked up an intellijel planar

joystick, 3 Make Noise STOs, 2 Erica Synths Black VCOs, and 1 Intellijel Dixie II to create a 16 channel track.

<https://youtu.be/hpfAEFw1cFs>

9 Percussa Forum

For all questions about the SSP, please post your question at

<https://forum.percussa.com>

10 Sample License Agreement

The Percussa SSP is shipped with sample content produced by Noisetron LLC.

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11 Legal

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