

SUPERCritical

S Y N T H E S I Z E R S

The supplied **POWER CABLE** is connected in the back with a shrouded connector. Be sure to align the red stripe with -12V power rail or the module or your system might be damaged. Be sure not to plug anything except modular level ($\pm 12V$) to the jacks. The power consumption is 120mA for +12V and 30mA for -12V. The 5V rail is not used. The warranty doesn't cover incorrect power or input connections. Do not patch an output in another output.

FM is a bipolar cutoff frequency modulation control.

MODE controls the filter mode. It usually ranges from low pass to high pass modes via a notch or band pass mode. This depends on the character used.

MODE CV is the control voltage input for this control.

FM CV is an analog bipolar FM input for cutoff modulation. It's capable of audio rate FM.

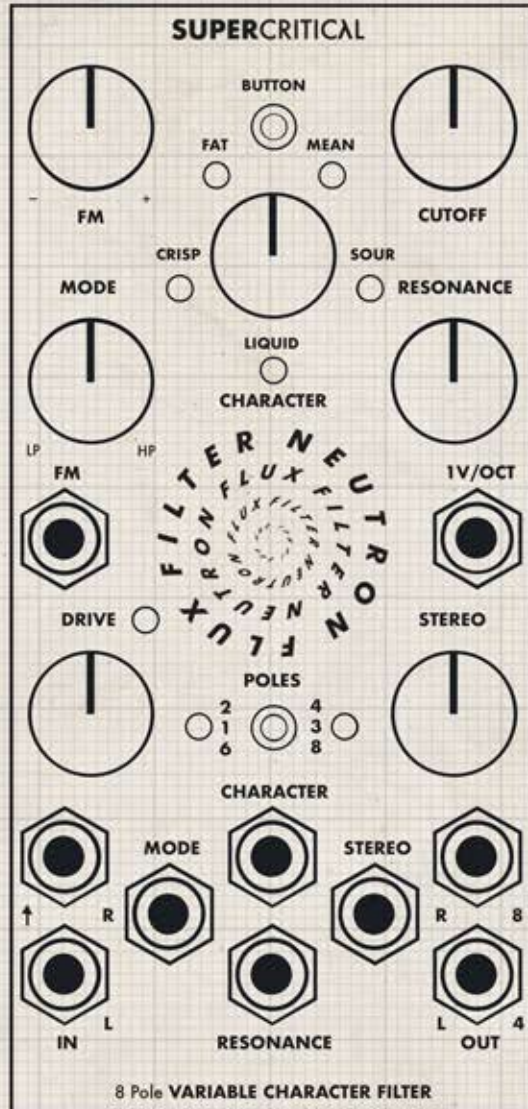
DRIVE is an input level control. Usually the first half of the pot is considered clean and after that some warm saturation happens. A long press on the **POLES** button turns on the boost mode indicated by the red LED near the **DRIVE** control. Boost engages a 20db boost before the filter cores.

L and R INPUTS are the audio inputs of the filter. The left input is normalised to the right input when the right is not plugged in (indicated by the arrow).

POLES button switches the different filter pole characteristics. In some cases they aren't poles per se, but the modes go from shallow to steep. The indicating LEDs display the current pole setting in traffic light logic. Left green - 2, Right green - 4
Left yellow - 1, Right yellow - 3
Left red - 6, Right red - 8.

The red indicates mono/series operation, see section **ROUTING**. Usually the 2 and 4 pole modes have the traditional characteristics and 1 and 3 have something special. 6 has the inner boost enabled and 8 is very steep. Experimentation is encouraged with this control.

BOOTLOADER is accessed by powering the module with **BUTTON** and **POLES** pressed. The current firmware is indicated via the character LEDs. After displaying the version info, the module waits for new firmware audio file to be played via the **CHARACTER** input. Thorough update info is displayed on the product page at our website supercriticalsynthesizers.com/neutronflux



BUTTON is the multi-function button in the module. In this firmware version it only focuses to the nearest character on short press.

CUTOFF is the master cutoff frequency of the filter. It's an analog control.

RESONANCE controls the feedback circuit in the filter. The control may act a bit different for some characters. **RESONANCE CV** is the control voltage input for this.

1V/OCT is an analog calibrated pitch input for the cutoff control. The filter can track for three octaves after a warm up period.

STEREO is a bipolar control for the filter's binaural balance. The zero point is in the center and turning the control towards each side makes the stereo image to lean towards the chosen side. Some static offset is introduced first, followed by drift. You can tune both filter cores to same pitch with this control. Using this in tandem with the FM gives the best result for a mono -> stereo split on the NF.

L and R OUTPUTS are the module's audio outputs. Both are always active. When the module is in series mode (see **ROUTING**) the right output provides the series signal and the left output taps the signal between the filter cores (max 4 poles)

The **CHARACTER** control is the most powerful feature of the module. It currently features one bank (**green**) of classic analog filter characters. You can blend between characters with the encoder or **CHARACTER CV** input. Having different pole settings for each character can cause pops when modulated although setting each character to the same pole setting helps with this. The characters and pole settings are as follows:

FAT - A thick east coast character. Ladder. 2-Pole and 4-pole mode have standard functionality. 1 and 3-pole modes duplicate the 2 and 4 pole modes but resonance enabled only on the left channel (Thriller!). 6 and 8 pole modes are steeper versions of the 2 and 4 pole. Mode pot has BP in the middle.

CRISP - Creamy and crispy. State variable. 2-Pole and 4-pole modes have standard functionality with notch in the middle of mode pot. 1 and 3 pole modes duplicate the 2 and 4 pole modes but mode pot has BP in the middle. 6 and 8 pole modes are steeper versions of the 2 and 4 pole.

LIQUID - A variation of our OTA-ladder. Clean and clear. Spacey! 2-Pole and 4-pole versions have standard functionality. 1 and 3 pole modes have much shallower slope. 6 and 8 pole modes are steeper and distort well. Mode has BP in the middle.

SOUR - ACIEEEEEED!! Squelchy. Distorting. Also quite liquid. 3 pole mode is the main thing here. 1, 2, 4 have subtle variations of it. 3 pole mode has the right core as a flat filter with the inner boost enabled so you can use it as an acid filter -> distortion box chain. In 8 pole the flat "distortion box" is before the actual acid filter. BP in the middle.

MEAN - Screaming. Unstable. Distorting. Bad times. Can't accurately recall what we did on the modes for mean. You're on your own on this one. Maximum drive yields maximum damage.

ROUTING in the Neutron Flux happens so that both filter cores can be run parallel unless one of the **POLES** LEDs are red. That indicates that the filter cores are routed in series (like running a cable from left output to right in). In this case, the right input jack is not in use and the right output is the main output. Since both filter cores have the boost circuit before them, they are enabled as follows: The 6 pole modes have the right channel boost (**inner boost**) permanently enabled. Toggling the boost via a long press on **POLES** enables the boost in the left input. In this case the signal is boosted twice in the chain. In 8 pole modes the inner boost is permanently disabled.

NEUTRON FLUX

8 Pole VARIABLE CHARACTER FILTER
QUICK START GUIDE (Firmware 1.0)