SUPERCRITICAL
SYNTHESIZERS

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 to the jacks (only MIDI signals to midi jacks in the Expander). The power consumption is 120mA for +12V and 30mA for -12V. The 5V rail is not used.

1V/OCT is a calibrated pitch input for the global oscillator pitch

FM CV is a bipolar FM input for global oscillator pitch with ±5V range

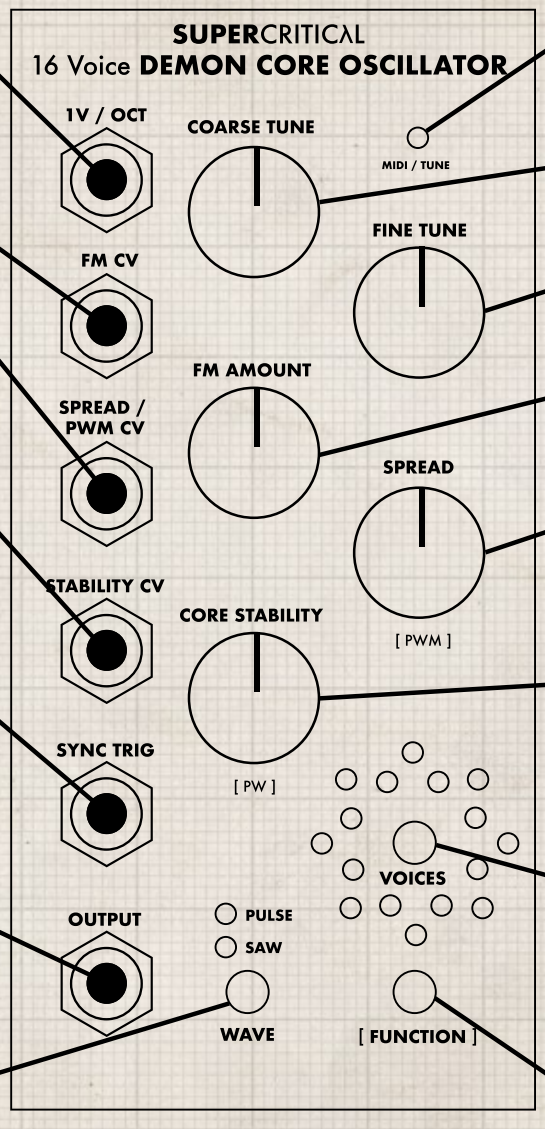
SPREAD / PWM CV is a CV for spread control (attenuated with the **SPREAD** pot) when saw wave is selected. When pulse is selected it modulates the pulse width. The input is bipolar with ±8V range

STABILITY CV is a CV for the core stability (attenuated with the **CORE STABILITY** control). The input is bipolar with ±8V range

SYNC TRIG is a trigger input for the time sync. When triggered all unison waves' phases sync. If the **SPREAD** control is slightly raised the phases spread over time. It works best if **STABILITY** is near off or raised just a tad. The input accepts a 5V 1ms trigger signal which exceeds +5V threshold.

OUTPUT is the mono output of the module. Since all sound the module makes is analog the output level might need some adjustment when adjusting the number of voices used and their tuning. 16 voices, **CORE STABILITY**, **SPREAD** off and **SYNC TRIG** is triggered causes the loudest level the module can make.

WAVE BUTTON chooses the waveform of the oscillator. Saw is a reverse saw wave and pulse is a variable pulse wave ranging from 0% via square to 100% pulse wave (if the module makes no sound at the output, the reason might be that it is set to pulse with 0% pulse width).



MIDI/TUNE LED indicates concert pitch when coarse and fine tune are rotated. It blinks on every C note (when there's no offset in **1V/oct**) and when fine tune is at center position for accurate tuning to A440.
It also shows MIDI activity **when** expander is connected

COARSE TUNE adjusts the coarse tune of the oscillator over 6 octaves in half step intervals

FINE TUNE adjusts the fine tune of the oscillator over half step range

FM AMOUNT attenuates the signal fed to the **FM CV** input

SPREAD controls the static spread between oscillator voices
FN + SPREAD attenuates the **PWM CV** input **when** pulse wave is set

CORE STABILITY controls oscillator drift in each oscillator voice.
All the way down every voice's tuning is strictly accurate and all the way up it acts like a broken VCO with radical drifting.
FN + STABILITY controls the pulse width offset between 0% - 100% **when** pulse wave is set

VOICES BUTTON controls the amount of voices used. The values are set between 1-2-3-4-5-6-8-10-12-16 voices and then back to single voice again. Constantly lit LEDs indicate unison depth. These voices are then allocated between unison and octave stacks. (Polyphony with expander)
WAVE + VOICES control octave stack depth. When **WAVE** is pressed down the LEDs blink fast and indicate octave stack depth.

FUNCTION BUTTON [FN] is the shift button of the device and accesses the alternative functions for other buttons and knobs.
FN + WAVE + VOICES held down 2s resets all controls to what-you-see-is-what-you-get mode. All hidden controls are reset to panel values.
FN + **WAVE** + **VOICES** pressed down when powering up sets the module to its bootloader state. You can update the firmware via **FM CV** input at this point.

ALL POTENTIOMETERS work in jump mode when using alternate controls. Buttons have a short press mode with a 0,5sec "click" and in some cases, a long press mode with over 0,5sec hold. The LEDs also have a fast and slow blinking rate indicating different functions.

16 Voice **DEMON CORE OSCILLATOR**
QUICK START **GUIDE** (Firmware 1.0)