



NOISE PLETHORA

USER MANUAL

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POWERING THE MODULE | THANKS FOR PURCHASING A MODULE FROM BEFACO!
 MODULE | BEFORE YOU PLUG THIS MODULE IN...

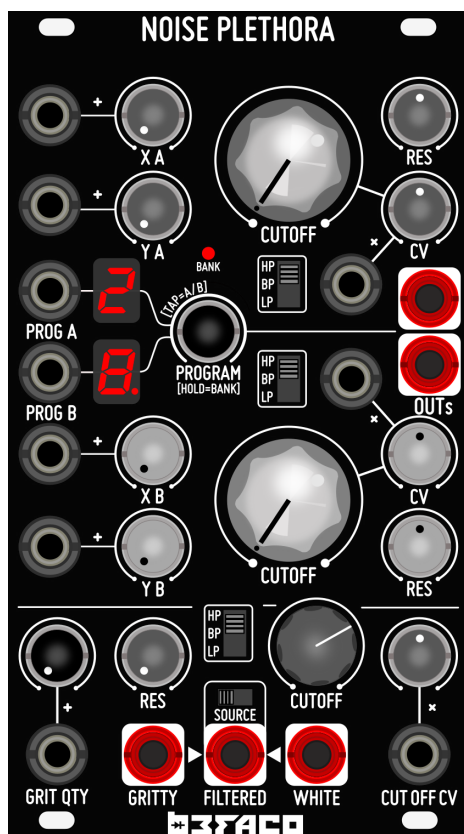
1. Disconnect your cabinet from the mains.
2. Triple check the power cord polarity. The coloured line on the cable (pin number one) is the -12V rail.
3. If you plug the module backwards you might burn it out and unfortunately this is not covered by the warranty.
4. If you have any questions about this product feel free to contact us support@befaco.org



INTRODUCTION | WHAT IS NOISE PLETHORA?

Noise Plethora is an Eurorack Noise Workstation in 14HP. The module consists in three digital sounds generators equipped with an Analog Multimode Filter to sculpt the sound and generate any kind of textures and noises.

MODULE STRUCTURE | GENERATORS



GENERATOR A
 Digital Noise algorithms
 Analog multimode filter

GENERATOR B
 Digital Noise algorithms
 Analog multimode filter

GENERATOR C
 White Noise and Granular
 "Gritty Noise"
 Analog multimode filter

1. Manual Program/Bank Selector

Programs are organized in banks of 10 programs each (0...9) Turn it to select the programs.

Toggle between Generator A and B by pushing it quickly. Hold it for 1 second to access Bank selection (Bank LED will blink). Select the bank same way you select a program.

To come back to Program selection just hold it for 1 second again.

After a couple of seconds of inactivity on this control, the selection is saved to the internal non-volatile memory.

2/3. Program/Bank Display

Shows the current Program or Bank.

The dot at the bottom right corner of the display shows which Generator is selected.

4/5. Program Select CV Ins

Select between programs on the selected Bank.

6. Bank LED Indicator

It lits during Bank selection.

7/8/11/12. "X" Controls (Generator A and B).

The voltage applied to "X" CV Input is summed to the value present at "X" manual control.

CV Input Range: 10Vp-p. Higher voltages will be ignored.

9/10/13/14. "Y" Controls (Generator A and B)

The voltage applied to "Y" CV Input is summed to the value present at "Y" manual control.

CV Input Range: 10Vp-p. Higher voltages will be ignored.

15/16/17. Filter Mode Selectors

Switch between Low-Pass, Band-Pass and High-Pass mode.

18/19/20. Filter Cutoff Frequency Control.

21/22/23. Filter Cutoff CV Inputs.

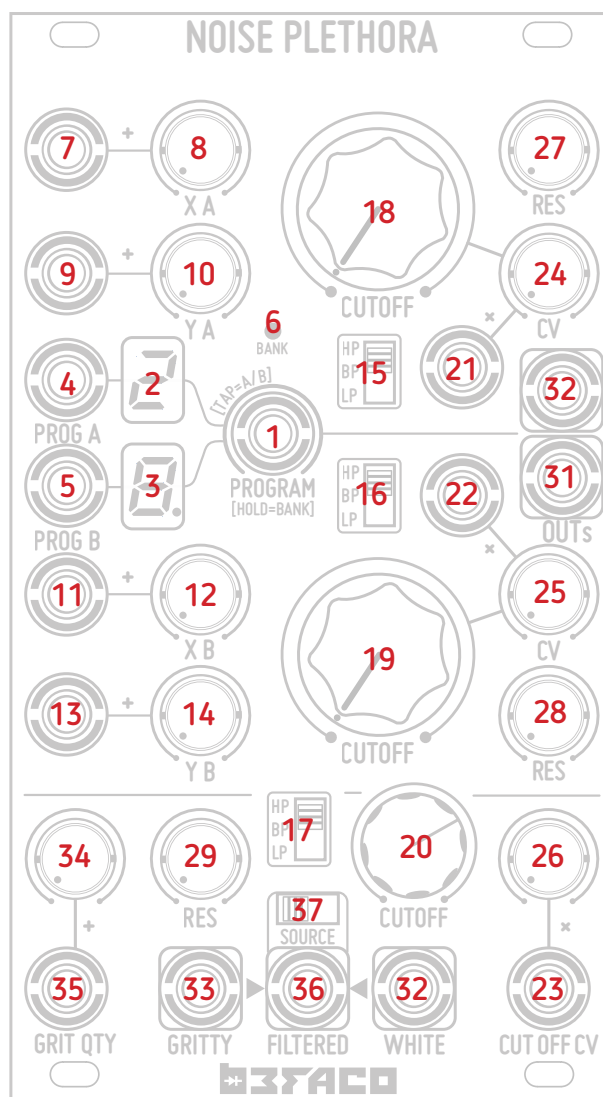
The voltage applied to those Inputs is summed to the value present at the Cutoff manual control.

Input Range: 10Vp-p

24/25/26. Filter Cutoff CV Attenuators.

Attenuators for Cutoff CV Inputs.

27/28/29. Filters Resonance Control.



30/31. Main Outputs for Generators A and B

32. White Noise Output.

33. Gritty Noise Output.

34/35. Gritty Noise "Grit" Quantity.

The voltage applied to "Grit Qty" CV Input is summed to the value present at "Grit Qty" manual control.

CV Input Range: 10Vp-p

36. Filtered Noise Output.

37. Filtered Noise Source Selector.

Selects between Gritty or White Noise to be filtered.

Size: 14HP
Depth: 30 mm
+12v: 65 mA
-12v: 8mA

This module is the result of loads of hours of work, love, and care.

It would have been impossible to finish without the help of beta testers, loving friends, fearless programmers, and the whole Befaco conclave of opinionologist.

Hardware design, documentation, user interface, and sound design by Befaco team.

Beta testing by Jose Cabrera, Sam Gerber, Miguel Eedl, and the Befaco team.

Firmware coding by Jeremy Bernstein, Julia Mugica, Ivan Paz, and Befaquers.

BE SURE YOU HAVE THE LATEST FIRMWARE INSTALLED

The firmware version will display shortly at startup.



Example of a display showing 1.1 version

If your Noise plethora is not updated please download the firmware from "<https://Befaco.org/noise-plethora>" and follow the install instructions

BANK: A - TEXTURES		
CV1	CV2	
0	RadioOhNo	
OSC 1 Frequency	OSC 2 Frequency + PWM	Four Square wave Oscillators cross Moded in couples and added together.
1	Rwalk_SineFMFlange	
Modulation Frequency	Flanger	Four random walkers in a box of size L mapped to the frequencies of Pulse oscillators, modulated by sine FM synth and filtered by a flange effect.
2	xModRingSqr	
OSC 1 Frequency	OSC 2 Frequency	Cross FM Between Two square wave Oscillators. The out is the ring modulation of the two.
3	xModRingSine	
OSC 1 Frequency	OSC 2 Frequency	Cross FM Between Two sine wave Oscillators. The out is the ring modulation of the two.
4	CrossModRing	
Freq (different ratios each)	FM Index	4 waves FMing each other in a daisy chain and the last one FMing the first one. All outs are multiplied together.
5	Resonoise	
Both waves Frequency	Folding amount	Square wave FM-ing a sine wave. The result is passed through a wave folder and a BPF. The filter cutoff is modulated by white noise.
6	GrainGlitch	
Square Wave frequency	FM Index and grain size	Square Wave sent through a granular cell. The out of this cell is feedback to the Oscillator as FM. The out is a combination of the oscillator and the granular cell using XOR logic gate.
7	GrainGlitchIII	
Square Wave frequency	FM Index and grain size	Square Wave sent through a granular cell. The out of this cell is feedback to the Oscillator as FM. The out is taken from the granular cell.
8	GrainGlitchIII	
Square Wave frequency	FM Index and grain size	Sawtooth Wave sent through a granular cell. The out of this cell is feedback to the Oscillator as FM. The out is taken from the granular cell.
9	Basurilla	
LFOs Frequency	LFOs Pulsewidth	3 Withe Noise generators gated by 3 independent Pulse LFOs

BANK: B - HH CLUSTERS		
CV1	CV2	
0	ClusterSaw	16 Sawtooth Oscillators with adjustable linear frequency relation
Frequency	Spread	
1	PwCluster	6 Detuned pulse waveforms with adjustable pulse width
Frequency	Pulsewidth	
2	CrCluster2?	6 detuned Sine Waves with low-frequency FM
Frequency	FM Index	
3	SineFMcluster	6 detuned sine waves, frequency modulated by 6 independent sine modulators.
Frequency	FM Index	
4	TriFMcluster	6 detuned triangle waves with frequency modulated by 6 independent sine modulators.
Frequency	FM Index	
5	Primecluster	16 sawtooth waves detuned using prime numbers, with a common Sine Frequency Modulator.
Frequency	FM Index	
6	PrimecCnoise	16 Triangle Waves detuned using prime numbers, frequency modulated by white noise.
Frequency	FM Index	
7	FibonacciCluster	16 sawtooth detuned using Fibonacci series, and each frequency is multiplied by a "spread" Factor.
Frequency	Spread Factor	
8	PartialCluster	16 sawtooth, detuned by multiplying each of the frequencies by a "spread" Factor.
Frequency	Spread Factor	
9	PhasingCluster	16 Square Waves detuned by multiplying each of the frequencies by a "spread" Factor, with an LFO detuning all of them slightly.
Frequency	Spread Factor	

BANK: C - HARSH & WILD		
CV1	CV2	
0	BasuraTotal	
LFSR Speed	Reverb Amount	"Bent" LFSR using FM on an oscillator with reverb.
1	Atari	
Wave 1 Freq	Wave 2 freq + FM Index	Two Square waves with PWM/FM cross Modulation. The first one do PWM to the second, and the second do FM to the first.
2	WakingFilomena	
L box length	FM Index	16 random walkers mapped to the frequencies of Pulse oscillators in an L-size box.
3	P_S_H	
S&H Rate	Reverb Amount	Noise trough Sample & Hold + Dirty Reverb.
4	ArrayOnTheRocks	
Carrier Frequency	Modulator Frequency	FM patch where modulator is a sine wave and the carrier a wavetable with some values of the table been randomized on the fly.
5	ExistencelsPain	
Sample & Hold Rate	BPF CutOff Mod-Index	Sample & Hold Noise through four bandpass filters whose frequency is controlled by four triangle oscillators.
6	WhoKnows	
Pulse Frequency	BPF CutOff Mod-Index	Pulse Wave trough four band pass filters whose frequency is controlled by four triangle oscillators.
7	SatanWorkout	
Frequency + FM index	Sample Rate	White Noise FM-ing a sine wave. The result is downsampled and distorted.
8	Rwalk_BitCrushPW	
L box length	Reverb Roomsize	Nine random walkers in a box of size L mapped to nine waveforms frequencies, and a bit crusher filter mapped to their pulse-width. The result is passed through reverb.
9	Rwalk_LFree	
L box length	Reverb Roomsize	Four Pulse Width Modulated Pulse waveforms with reverb.