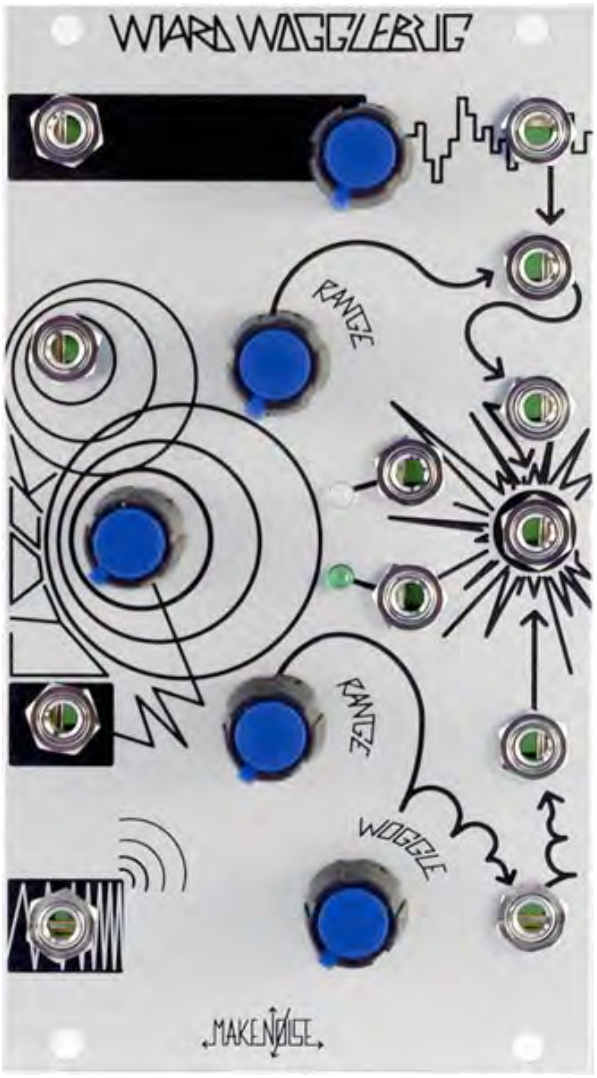
WIARD WOGGLEBUG



Limited WARRANTY:
Make Noise warrants this product to be free of defects in materials or construction for a period of one year from the date of purchase (proof of purchase/invoice required).

Malfunction resulting from wrong power supply voltages, backwards power cable connection, abuse of the product or any other causes determined by Make Noise to be the fault of the user are not covered by this warranty, and normal service rates will apply.

During the warranty period, any defective products will be repaired or replaced, at the option of Make Noise, on a return-to-Make Noise basis, with the customer paying the transit cost to Make Noise. Please contact Make Noise for Return To Manufacturer Authorization.

Make Noise implies and accepts no responsibility for harm to person or apparatus caused through operation of this product.

Please contact technical@makenoisemusic.com with any questions, needs & comments, otherwise...

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http://www.makenoisemusic.com

Special Thanks to Grant Richter for his genius and contributions to the world of synthesizers! Thanx to Wiard for granting Make Noise permission to manufacture a Wogglebug. Thanx to Shawn Cleary, Richard Devine, Aaron Abrams, Tom Rolando, Rosemary Rolando and Kelly Kelbel for support in the development of the Make Noise Wogglebug.

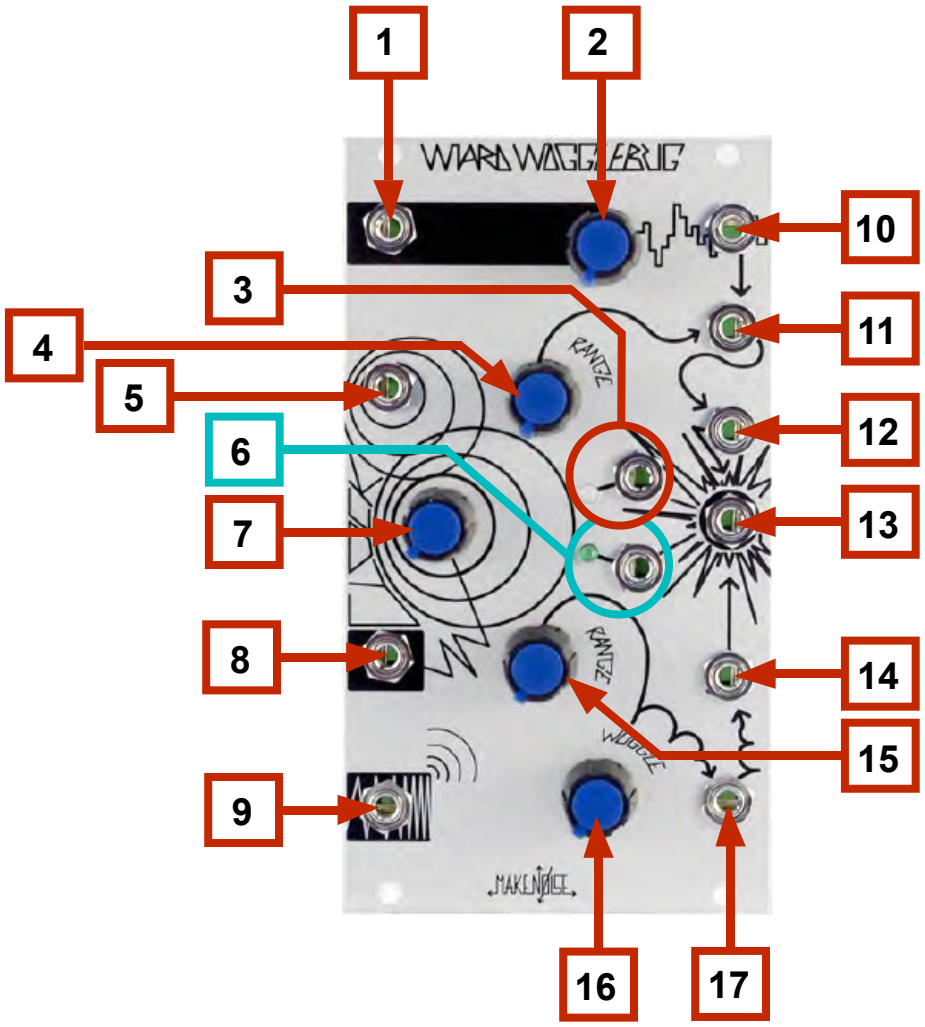
Installation:

The Make Noise Wiard Wogglebug is an electronic signal generator requiring 50mA of +/-12V regulated power and properly formatted distribution receptacle to operate. It is designed to be used within the euro format modular synthesizer system.

Go to http://www.doepfer.de/a100_man/a100t_e.htm for the details of this format.

To install, find 14HP of space in your euro-rack synthesizer system, confirm proper installation of included power cable on backside of module (see picture below), plug the 16pin end power cable into the euro-rack style power distribution board, minding the polarity so that the RED stripe on the cable is oriented to the NEGATIVE 12 volt supply line. This is USUALLY at the bottom.

Please refer to your case manufacturers' specifications for location of the negative supply.



Panel Controls

1. Heart In.
2. Chaos Balance.
3. Random Gate Burst.
4. Smooth VCO range.
5. External Clock In.
6. Random Gate Burst.
7. Clock Rate/Chaos Control.
8. Clock/Chaos Control In.
9. Ring Mod External In.
10. Stepped CV out.
11. Smooth CV out.
12. Smooth VCO out.
13. Ring Mod out.
14. Woggle VCO out.
15. Woggle VCO range.
16. Woggle time.
17. Woggle CV out.

Smooth & Stepped(Shot to the) Heart IN:
Signals applied here will be injected directly to the uncertainly beating heart of the Woggle-bug. Accepts Control Voltages or Audio Rate signals.

Chaos Balance:
When nothing is inserted at the Heart IN, Chaos Balance acts in a way similar to the original Wogglebug Cluster Panel control, setting the range of probable values. Turning this control CCW, the random values generated by the system tend to “cluster.” With a signal applied to the Heart IN, it allows that external signal to be balanced with the internal signal source.

Stepped OUT:
At lower Clock rates, the stepped Control Voltage appears here. A new value occurring at every clock pulse. At higher clock rates, bit reduction effects may be achieved by inserting an audio signal into Heart IN.

Smooth OUT:
The Smooth Control Voltage appears here, the smoothness of which is set by the Clock RATE/ Chaos Control.

Smooth RANGE:
This control sets the upper limit for the Frequency ofthe Smooth VCO. It will also greatly affect the range of the Woggle CV, and behavior of the Woggle VCO.Smooth

VCO OUT:
Square wave, audio rate signal appears here, controlled in part by the Chaos Balance, Heart IN, Smooth Range and Clock Rate/ Chaos.

Ring-ModRing-Mod External IN:
Any audio rate signal may be applied here, for injection to the Ring-Mod circuit. The digital nature of the Ring-Mod circuit makes Simple waveforms (Pulse, Square, Triangle, Sine, Saw) almost necessary to achieve something remotely musical, but don't let that stop you from pumping Motown samples into this circuit!

Ring-Mod OUT:
Audio rate signal. The ring modulated product of Smooth VCO, Woggle VCO and Signal at External Ring-Mod IN. It gets messy, real fast.

Woggle

Woggle CV:
A of product of the Smooth/ Stepped CV, this voltage quivers, shakes and Chases after the heart of the system... always.

Woggle:
This control Sets how quickly (or slowly) the Woggle is able to catch the Smooth/ Stepped circuit. Woggle Range: This control sets the upper limit for the Frequency of the Woggle VCO.

Woggle VCO OUT:
Square wave, audio rate signal appears here, controlled in some part by the Woggle and Woggle Range panel controls as well as the Smooth VCO.

CLOCK

Clock RATE & Chaos Control:
This dual purpose control sets both the Rate of the Wogglebug system Clock & the lag processor feeding the Smooth VCO. Turning it CCW slows the system and smoothes its response.

Clock RATE & Chaos Control CV IN:
Control voltage IN for the above functions.

External CLOCK IN:
any signal may be applied here, and upon every detected rising edge the Wogglebug System will be kicked in the ass.

Clock OUT:
Squared, clock signal, 0 to +10V.

Random Gate Burst:
Squared, gate signal, 0 to +10V. Random, but controlled gates synced to the Clock (though sometimes sputtering and spazzing off for brief Moments of brilliant freedom, only to fall back into the hands of the clock).

Overview:
Amongst other things, the Make Noise Wogglebug contains the following:1 Voltage Controlled Clock, 1 Sample & Hold, 2 Lag Processors, 1 Random Gate Burst Generator, and 2 VCO1 Digi Ring Mod-most of which are patchable via the instrument's panel.

While I have broken the Panel Controls & I/O description into Sections for explanation, please understand that ALL portions of the Wogglebug Interact in a system that is capable of CV and Signal generation, as well as CV and Signal Processing. For example, changing the Chaos Balance will affect the Stepped, Smooth and Woggle CVs, the Smooth VCO, Ring-Mod and Woggle VCO OUTs! The way that I like to think of the system is that the Woggle circuit (bottom) is chasing the Smooth/ Stepped circuit (top) which is being kicked in the ass by the Clock (center).

It is very possible to make patches and panel settings which lock up the System, and thus the CV outputs will hang at whatever was the last voltage and The VCOs will drone on almost unchanging. When this happens, a tweak to just about any panel control will wake and disturb the Wogglebug. This is especially true with the Range controls, will cause great variation in the system. With the Smooth Range set lower than the Woggle Range, the Woggle circuit will more easily “catch” the Smooth circuit. If the Woggle range is set lower than the Smooth Range, the Woggle circuit will never be able to catch the Smooth VCO. Finally, consider that many changes in the system are NOT immediate. This is due in part to the slow response of the vactrols used in the circuits.

IS THE WOGGLEBUG MY SYNTHESIZER'S ID MONSTER? SHOULD I BEWARE of the WOGGLEBUG?

YES and maybe.

The "WoggleBug" is a random voltage generator, originally designed by Grant Richter of Wiard Synthesizers. The Wogglebug's purpose is to overtake the control voltages produced by your keyboard during performance and to give voice to your synthesizer's ID. It is your synthesizer's ID MONSTER. A continuation of the "smooth" and "stepped" fluctuating random voltage sources pioneered by Don Buchla, the core of the circuit is based on the Buchla Model 265 "Source of Uncertainty" module, which many consider to be the most musical of all random voltage generators. Like the 256, the Wogglebug utilizes a vactrol based low frequency smoothing filter, VCO, and Sample & Hold to produce Stepped and Smooth (or lagged, slewed) control voltages in the range of 0 to 10 volts.

Grant's Wogglebug design expands on this system to include the other-worldly Woggle CVs (stepped voltages with decaying sinusoids at the edges), which must be heard in action to be truly appreciated. In a moment of considerable noise, Richter decided to tap into the sound sources at the uncertainly beating heart of the Wogglebug and bring them forth to the instrument's panel. He then figured a clever way to "ring modulate" these sounds, and that too is on the panel of all Wogglebugs. Thus, the Wogglebug is a complete system- no external modules are necessary; however, all voltage controlled systems long to be tickled, bitten, plagued, and eventually, destroyed by the Wogglebug.

I fell in love with Grant's #3 circuit the moment my first Wogglebug came to life on my experimenter's breadboard. Since then, I have built a few DIY Wogglebug #3, including the Ryan Williams designed clone PCB. I have been lucky enough to have used the Wiard Wogglebug #5 extensively, and I now feel VERY HONORED to be presenting this circuit as a Make Noise module.

Until now, the Wogglebug has only been available as the Wiard Wogglebug #5 for the 300 series or as the Wogglebug #3 DIY project, popularized by the folks at electro-music. The Make Noise Wogglebug is neither #3 nor #5. In the truest spirit in the truest spirit of Wiard Synthesizers, the Make Noise Wogglebug is not a clone, but instead it is a tribute to all that Woggles: a continuation of the Wogglebug. Like the #3, the Make Noise Wogglebug is a single Wogglebug system. However, the Make Noise Wogglebug improves upon the #3 by offering further functionality such as an External IN for the ring mod circuit, the ability to directly inject a signal to the heart of the Wogglebug via Heart IN, and the Random Gate Burst function, all of which have never appeared on any Wogglebug. I have also redesigned the Cluster circuit, and thus it has been renamed as CHAOS BALANCE to reflect its further purposes. This control now allows for some new functionality that has again, never appeared within any Wogglebug to my knowledge.

Tips and Tricks:

-Utilizing an external clock will allow for separate control of the rate of change within the system, and the smoothness of response. When an external clock is inserted, the Clock Rate/ Chaos Control affects only the smoothing circuit.

-Utilizing high frequency external Clocks, such as a VCO or the Clock from the Doepfer A-188 BBD modules, will produce interesting results at the Stepped OUT, not unlike bit crushing.

-Patching the module back into itself often produces interesting results
Try applying the Stepped OUT to the Clock CV IN.

-To achieve something similar to Child Tones, utilize 2 Wogglebugs, inserting the Smooth or Woggle VCO out from one, into the External Ring Mod IN of the other. The Child Appears at the Ring-Mod OUT of the second Wogglebug.

-It is sometimes exciting to kill the bug; stop it dead in its tracks! Plugging a dummy cable into the External Clock IN does just this! The whole system will hang, and ever so uncertainly.

-A method similar to the above suggestion is to kick the Wogglebug with a GATE or pulse instead of a Clock. For example, apply a keyboard gate to the External Clock IN. Every time you hit a key the Wogglebug is disturbed and new voltages appear.

-The control voltages produced by the Wogglebug are capable of large swings, to achieve more subtle effects when using the Wogglebug to Modulate, for example a VCO or VCF, set the Chaos Balance knob somewhat CCW, set the Smooth Range CCW. To taste of course. Attenuation at the destination will also help to achieve subtlety.

-To disturb the Wogglebug, set the Chaos Balance at 50% and apply the disturbing control voltage to the Heart IN.

-The Wogglebug makes for a WICKED ring-mod, however things will get real messy real quick. For greater control of the system when using as a ring-mod, set the clock to full CW, insert a Control voltage from sequencer, expression pedal or keyboard to the Heart IN, set Chaos Balance To full CCW. Inject your external signal at the Ring Mod External IN. Adjust the Range controls For desired timbre. It is possible to set the Range controls close enough so that the Wogglebug is quiet When no signal is present at the External Ring-Mod IN. Woggle control is like a Time Warp Control!

-The Woggle circuit is chasing the Smooth circuit; adjustments in the Smooth section will affect The Woggle section. For example, lowering the Smooth Range will effectively lower the median level of the Woggle CV. This is useful for taming and controlling the Woggle CV.