

# MULTI WAVE MIDI INLET



← MAKE NOISE →

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# 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 or reversed eurorack bus board cable connection, abuse of the product, removing knobs, changing faceplates, 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.

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

Please contact [technical@makenoisemusic.com](mailto:technical@makenoisemusic.com) with any questions, Return To Manufacturer Authorization, or any needs & comments.

<http://www.makenoisemusic.com>



About This Manual:

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# INSTALLATION

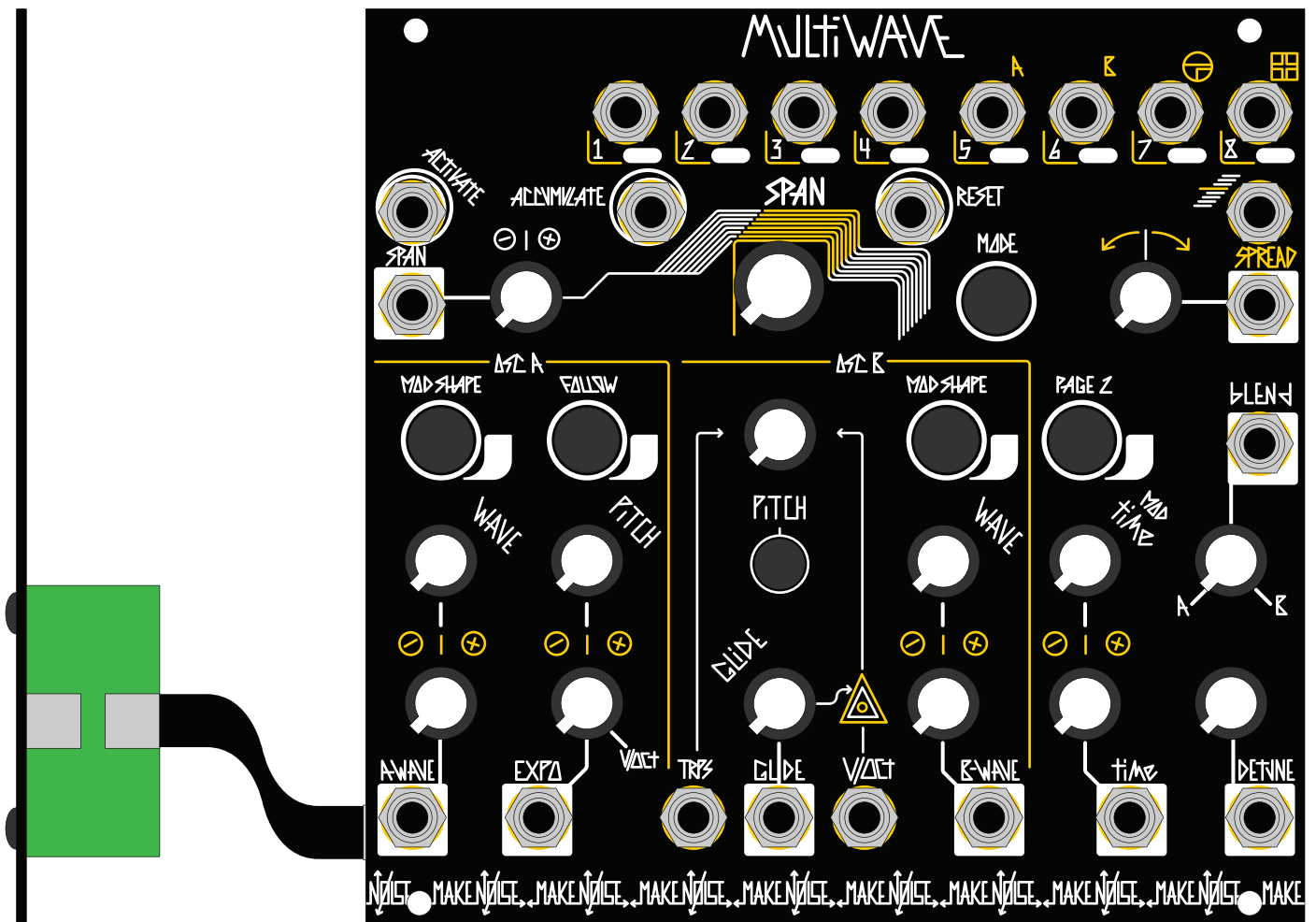
## Electrocution hazard!

Always turn the Eurorack case off and unplug the power cord before plugging or unplugging any Eurorack bus board connection cable. Do not touch any electrical terminals when attaching any Eurorack bus board cable.

The Make Noise MultiWAVE MIDI Inlet is an electronic music module requiring no power to operate. It must be properly installed into a Eurorack format modular synthesizer system case.

Go to <http://www.makenoisemusic.com/> for examples of Eurorack Systems and Cases.

To install, find 2HP in your Eurorack synthesizer case. Connect the MultiWAVE MIDI Inlet to your MultiWAVE with the included USB cable.



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# OVERVIEW

The MultiWAVE MIDI Inlet music synthesizer module is a passive expansion module that adds USB MIDI access to the MultiWAVE. It enables Activation of MultiWAVE channels via MIDI signals (including MPE) from a USB MIDI host (such as a computer running a DAW or MIDI sequencer). The MultiWAVE MIDI Inlet is required for MIDI control of MultiWAVE outside of the New Universal Skiff System.

- Activate MultiWAVE via MIDI/MPE using USB-C input and a USB Host
- Easy access to MultiWAVE USB functions (firmware updates, custom wavetable uploading)



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# USING MIDI WITH THE MULTIWAVE

With the MultiWAVE MIDI Inlet, or when installed in the New Universal Skiff System, the USB-C input can be used for Activation of MultiWAVE channels via MIDI signals from a USB MIDI host (such as a computer running a DAW or MIDI sequencer).

Using USB-MIDI or leaving a USB cable plugged directly into the MultiWAVE's on-board USB jack for an extended period of time (for FW update or wavetable management) outside the New Universal Skiff System, or without the MultiWAVE MIDI Inlet, is not supported. The skiff panel and MIDI inlet provides the required physical and electronic stability to the USB port.

The MultiWAVE must be running version 4.1.6 or higher in order to receive MIDI messages. Go to <https://www.makenoisemusic.com/firmware/> to download the latest version.

New MultiWAVE button functions with MIDI update:

1. Long press the MODE button in normal operation to cause a MIDI panic. The MODE led will light red while the button is held. Since MultiWAVE does not respond to Note-Off messages, "stuck notes" are not a problem, but this function is useful for resetting all the channels' pitches, as MIDI note values are otherwise held per channel until a new value is received.
2. On Page 2, long press the MODE button to enable/disable MPE functionality. During the long press, the SPAN window lights BLUE to indicate MPE is ON, or OFF to indicate MPE is OFF.

## MIDI Operation with MPE OFF

### MIDI Channel 1

MultiWAVE responds to messages received on MIDI channel 1 the same way it does to Activation gates and 1v/oct signals, utilizing the Span Modes to Activate channels at the designated pitch.

Using Round mode with Span set to 1 and sending MIDI notes on Channel 1 creates simple "Round Robin" polyphony and is the simplest way to play MultiWAVE with a keyboard (patch Channel Index to PoliMATHS' Span input as normal to create the standard voice structure).

Modulation dissemination at the 1v/oct input is summed with Channel 1 MIDI notes, resulting in transposition.

The Ch1 output generates signals based on Activated channels.

Glide, MultiMod reset, and Accumulate all operate just as they do from patching Activations.



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## MIDI Channels 2-9

The next eight MIDI channels each Activate a specific channel of MultiMod. These Activations are independent of the Span mode, bypassing the N.U.S.S. “front end.” These MIDI channels are useful for targeted poliphonic sequencing of MultiWAVE.

When using these MIDI channels, Modulation dissemination at the 1v/oct input is summed with MIDI notes, resulting in transposition.

The Ch1 output generates signals based on Activated channels.

Glide and MultiMod reset are not triggered by Activations from these MIDI channels. Also, Activations from these MIDI channels are not affected by Accumulate.

## MIDI Channel 10

Midi messages received on MIDI Channel 10 cause global Transposition on MultiWAVE. Like the Transpose input, this bypasses the “front end” and causes an immediate change in pitch on all MultiWAVE channels.

Note: As with the physical Transpose input, MIDI Transposition messages do not cause any activity at the CHI output, or any resets of the internal multimod bus.

## MIDI Operation with MPE ON

When MPE is turned on (long-press MODE button on Page 2 to turn Span window BLUE), MIDI messages are interpreted differently. The DAW or controller should be set to send MPE in Low Mode or “Lower Zone” with Channel 9 as the top channel. This mode distributes note events across MIDI Channels 2 thru 9 with per-channel pitch bend for special controller effects and alternate tunings. Channels 10 and above do not operate in this mode. Use this mode only if you have an MPE-capable controller or DAW.

### Technical Details

- Channel 1 becomes the MPE master channel rather than the Span-Midi channel.
- Pitch bend on channel 1 (MPE master) is still  $\pm 2$  semitones.
- Pitch bend on ch 2-9 (MPE Members) becomes  $\pm 48$  semitones.
- Channel 10-16 are disabled. (Transpose mode on Ch10 is disabled)



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## Other MIDI Messages

MultiWAVE can also receive Pitch Bend and CC messages. These operate differently depending on whether MPE is turned on.

- **Pitch bend:**
  - Global (Ch1, Ch10, MPE master):  $\pm 2$  semitone range.
  - Per Channel (Ch2 - Ch9):  $\pm 2$  semitones in normal mode,  $\pm 48$  semitones in MPE mode
- **Global CCs:**
  - These are global only (Ch1, Ch10, MPE master)
  - These all sum with the pot position
  - CC2 (Breath Controller)  $\rightarrow$  Spread
  - CC4 (Foot Controller)  $\rightarrow$  Detune
  - CC5 (Portamento Time)  $\rightarrow$  Glide
  - CC8 (Balance)  $\rightarrow$  Blend
- **Per Channels CCs:**
  - Global (Ch1, Ch10, MPE master): Sets the same value on all channels.
  - Per channel (Ch2 - Ch9): Both normal and MPE modes. Sets a value per channel.
  - These all sum with the pot position
  - CC16 (General Purpose 1)  $\rightarrow$  Osc A Wave
  - CC17 (General Purpose 2)  $\rightarrow$  Osc A Expo
  - CC18 (General Purpose 3)  $\rightarrow$  Osc B Wave
  - CC19 (General Purpose 4)  $\rightarrow$  Multimod Time

