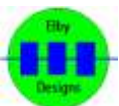




## MIDI-Retrofit-8 8-channel MIDI to TRIGGER Module

### Construction Guide V1.7

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# MIDI-Retrofit-8 MIDI to Trigger Module

## Construction Notes

Construction of the [MIDI-Retrofit-8 \(3D Model\)](#) is pretty straight forward. Attention must be paid, as usual, to the orientation of polarized components and the usual ESD procedures should be in place when handling sensitive components.

Construction should follow these simple steps:-

- a) dress the [MIDI-Retrofit-8 PCB](#) with all components as required – see Build Options
- b) install the board using the four mounting points
- c) install all required panel components
- d) connect panel components to the board using equipment wiring and the supplied crimp terminals

C103 should either be soldered to the terminals of S101 on the underside of the PCB or simply screwed in to the S101 terminals.

## Build Options

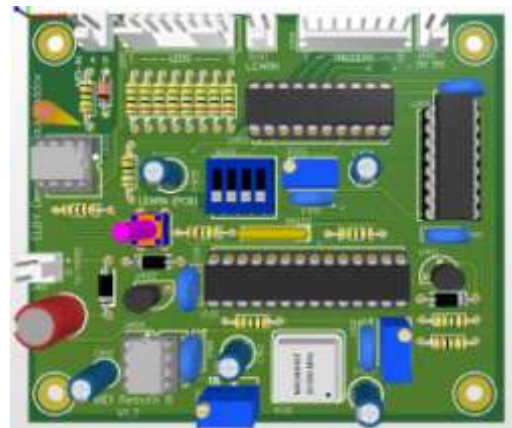
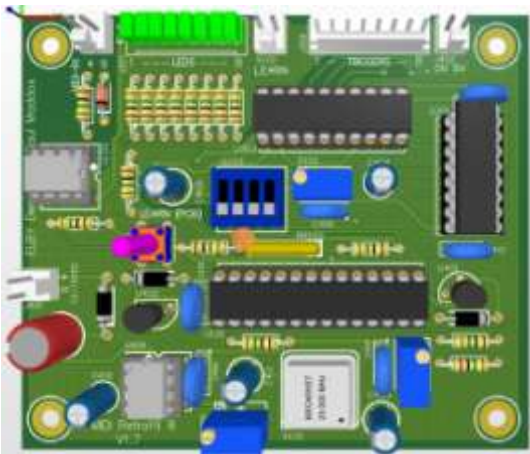
There are a couple of build options that will be decided on how you will be installing the MIDI-Retrofit-8 and will affect the selection of some components on the PCB.

### LED Indicators

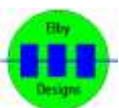
The LED Indicators serve 2 functions:

1. The LEDs flash whenever their respective TRIGGER Output is fired and so allow the user to observe the 'trigger pattern'
2. The LEDs provide a 'progress indication' during the [LEARN] mode

If you intend to re-assign the TRIGGER Channels on a regular basis then we recommend that the LEDs be fitted external to the PCB in an easily viewable location along with the [LEARN] switch. Install the 8-way MTA header as shown at right. An external momentary pushbutton switch should also be connected to S101.



If you intend to re-assign the TRIGGER Channels only once or rarely, then mounting the LEDs on the PCB is recommended. The external [LEARN] switch is not needed as the internal switch is provided for that purpose. Install the 8x LEDs as shown at left.

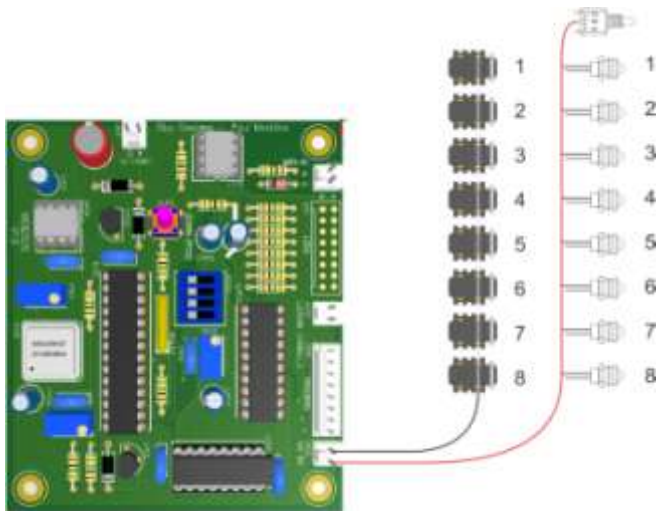


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## MIDI-Retrofit-8 MIDI to Trigger Module

J402 is used to provide 0V and 5V to the external TRIGGER jacks (if fitted) and the LED anodes (if external LEDs are fitted). This should not be used as a 5V power supply for external equipment and you must NOT connect this to an external 5V supply.



When installing external LEDs connect the ANODE of each LED to the [+5V] terminal on J402.

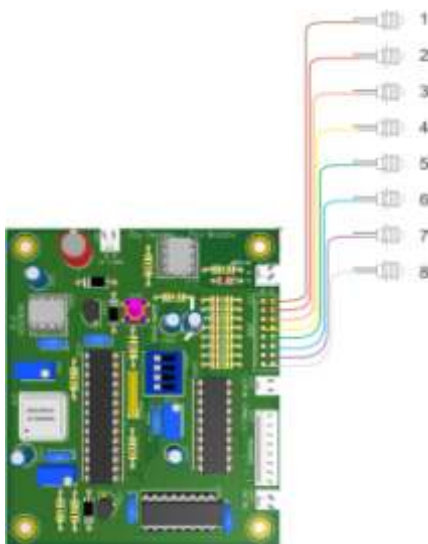
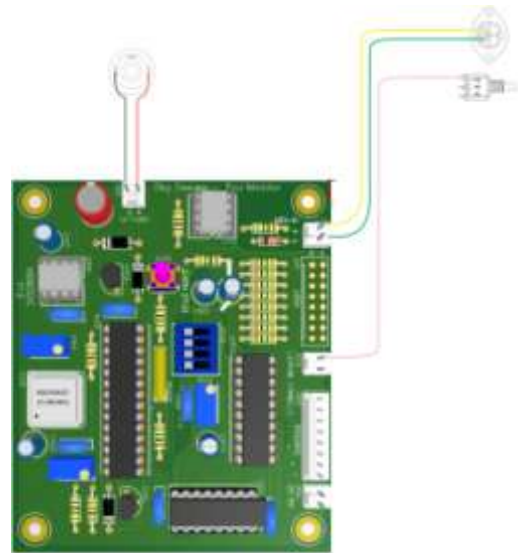
When installing external TRIGGER Output jacks connect the common tab of each jack to the [0V] terminal on J402.

If installing an external [LEARN] switch then terminate one of its terminals to S101 as shown.

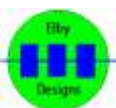
J401 is the power connection for the MIDI-Retrofit-8. The supply should, ideally, be in the range of 12VDC to 15VDC. If available within the unit then terminate a lead from J401 to suitable points in the unit. If using an external supply, then terminate a lead from J401 to a suitable DC connector.

J101 is the MIDI IN connector. A lead from J101 should be terminated on a suitable MIDI IN connector as required.

If an external [LEARN] switch is being installed, connect one of its terminals to S101 as shown at right.



Connect, if required, the cathodes of the 8 LEDs to J201 as shown at left.



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## MIDI-Retrofit-8 MIDI to Trigger Module

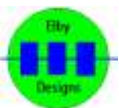


1 If installing external TRIGGER Output jacks, then terminate their 'signal' contacts to J309 as shown at left.

2  
3 If installing in to a unit, then terminate leads from J309 to suitable points in the unit.

4  
5 ***It is important to confirm that the points being used within the unit are suitable for connection to a direct logic-drive output.***

6  
7  
8 ***If not, you may damaged both the MIDI-Retrofit-8 and the unit.***



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# MIDI-Retrofit-8 MIDI to Trigger Module

## Setting-up the MIDI-Retrofit-8

There are 3 adjustments that can be made on the MIDI-Retrofit-8.

You will need a multi-meter or equivalent to perform steps (1) and (2). Step (3) is best done with an oscilloscope.

### DIPSWITCH #1

First you should select whether you want positive-going or negative-going trigger outputs. Your selection of the polarity will determine if the triggered state generates the lower voltage or the higher voltage. Depending on the setting of this switch steps (1) and (2) may have the opposite voltages

### DIPSWITCH #2

Set this switch to the ON position. This will allow the TRIGGER output to be held ON

Apply power after you have selected these options.

#### 1. TRIGGER Output Voltage Low

Adjust P301 until the TRIGGER output level is at the desired level which is, typically, 0V.

#### 2. TRIGGER Output Voltage High

Generate and hold a NOTE ON relative to one of the TRIGGER outputs. Adjust P401 until that TRIGGER output level is at the desired level which is, typically, 10V.

#### 3. TRIGGER Pulse-width

This adjustment defines the pulse-width of the TRIGGER outputs. This should be set to the smallest time period possible consistent with reliable triggering and operation of the attached triggered devices. If the pulse is set too small then the triggered devices may not trigger reliably or some devices may not produce the full 'sound' for which they were designed. On the other hand, increasing the pulse-width to a value well in excess of what is required to achieve a reliable trigger may affect the speed at which MIDI2SDS can accept repetitive triggers for the same output.

If you have an oscilloscope then you can easily and quickly set the pulse width to the desired period. If you do not have an oscilloscope then you should connect the TRIGGER outputs to the equipment to be controlled and set the pulse width to its minimum value. Generate triggers on all outputs and observe if any fail to generate a reliable signal, if necessary increase the pulse width until all outputs generate reliable instrument triggers.

P101 is used to adjust this setting.

