

MIDI I/O Kit

Features

- Simple MIDI input and MIDI output.
- Suitable for beginners.
- Shipped from the UK.
- RoSH compliant and lead free.
- Double sided PCB with ground plane for noise immunity.
- Latest MMA approved circuitry.
- Designed to work with all micro-controller development boards.
- 5V or 3V3 option.
- Technical support – email tripplikit@chrispidd.com.

MIDI

Musical Instrument Digital Interface, or MIDI for short, is the long established standard that allows electronic musical instruments to talk to each other or to a computer. Now, using this simple interface, you can:

- Make your own musical input device such as a percussion controller.
- Make a real time MIDI processing device such as an arpeggiator.
- Control lights or other visual effects from music software.
- Even make your own electronic musical instrument.

Connecting To Your Micro-controller

The Tripplikit MIDI I/O is designed to provide a MIDI input and a MIDI output with the maximum of simplicity having just four connections to your micro-controller board.

The Tripplikit MIDI I/O board can be configured to work with either 5V or 3V3 systems by fitting certain of the resistors and omitting others. Connecting your MIDI I/O interface to the wrong voltage system is very unlikely to cause any damage but the MIDI I/O will probably not function correctly.

The 4 connections are as follows:
















- **V+** Should be connected to 3V3 or 5V depending on your system.
- **Gnd** Should be connected to the ground of your system.
- **MIDI In** Should be connected to a UART Rx pin of your micro-controller.
- **MIDI Out** Should be connected to a UART Tx pin of your micro-controller.

The UART should be set to 31,250 baud, asynchronous mode, 1 start bit, 1 stop bit, 8 bits and no parity.

This is not the place to go into an in depth discussion on MIDI, however, if you have any questions on MIDI, please contact me on tripplikit@chrispidd.com

Kit Contents

The MIDI I/O interface kit consists of the PCB and the following components.

Name	Value		Version
R1	220R		Both
R2	220R		3V3 ONLY
R3	2k2		Both
R4	270R		5V ONLY
R5	10R		3V3 ONLY
R6	220R		5V ONLY
R7	33R		3V3 ONLY
R8	220R		5V ONLY
D1	1N4148		Both
C1	1uF		Both
C2	1uF		Both
U3	6N138		Both
PL3	pin header		Both
PL1	5 pin DIN		Both
PL2	5 pin DIN		Both

Note that the kit is supplied with all the components to build either the 3V3 or the 5V version of the MIDI I/O interface.

Before starting, you must decide which version you require and only fit the components appropriate for that version.

The table above shows which components should be fitted for each specific version and which components should be fitted to both versions.

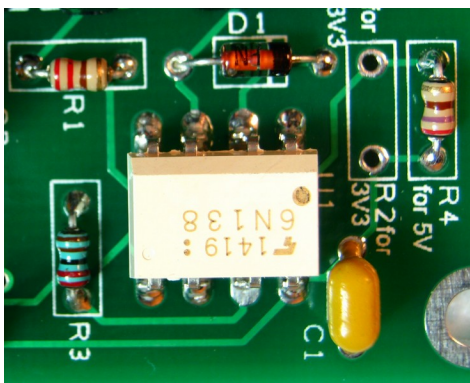
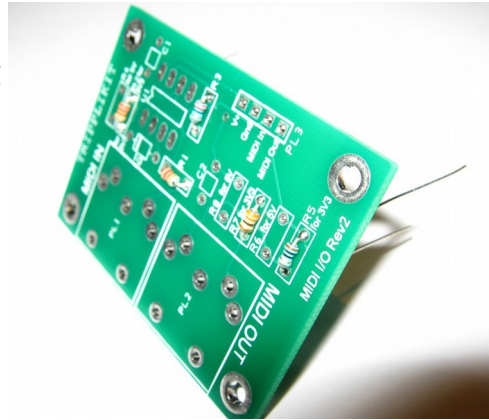
Assembly

We suggest that you fit the components in the order described here as this has been found to be the easiest way.

First fit all the resistors required for your application. In the picture a 3V3 version is being built.

Note the resistor leads have not been snipped of the back of the board yet.

Next fit the diode (D1) and the two capacitors (C1 & C2)



Now fit the opto-isolator (U1). Although this device is not particularly static sensitive, it is a good idea to make sure you are earthed while fitting it, for instance by using a wrist strap.

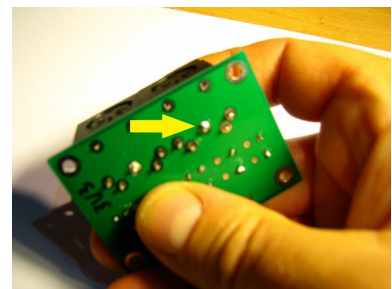
The diode and the opto-isolator are the only components which must be orientated correctly as shown in the picture.

To fit the 5 pin DIN sockets, mount them on the board and solder the pin in the middle - arrowed in the picture.

Now, resolder this pin while pushing the socket flat down onto the PCB as shown in the picture.

When both sockets are correctly positioned the remaining pins of the sockets can be soldered.

Finally fit the connection pin header if required. If you are permanently connecting the MIDI I/O unit to your project you can solder wires directly to the PCB.



Circuit Diagram

