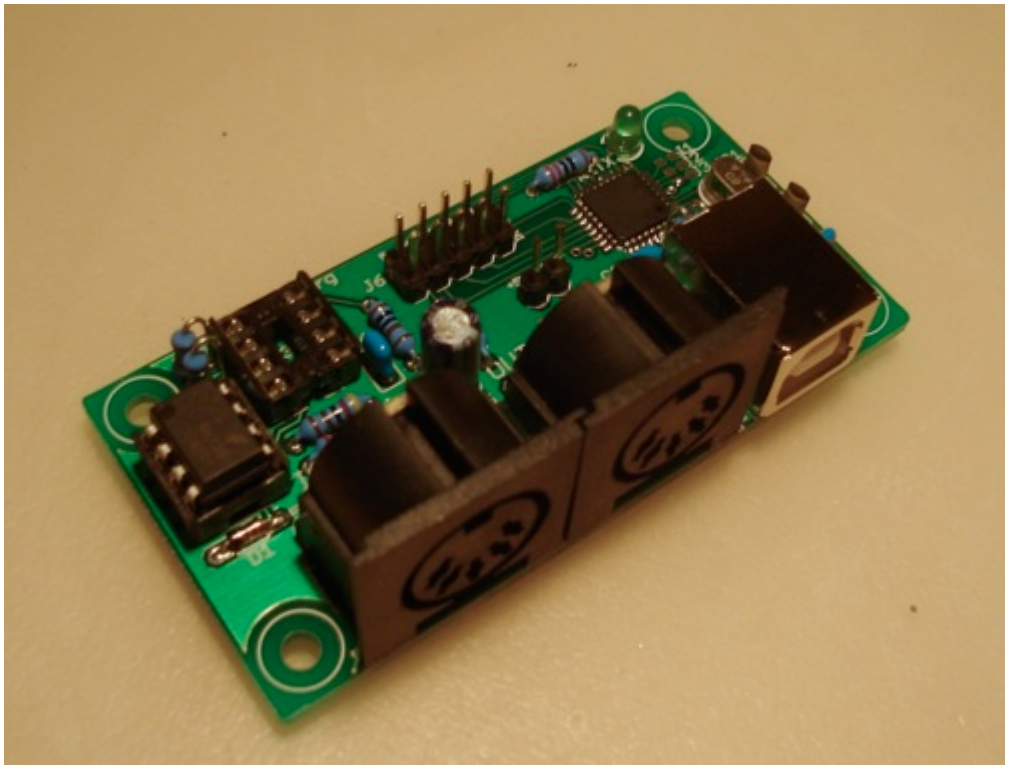
MBHP GM5 Module



Overview

The GM5 is a bus-powered USB MIDI interface IC from Ploytec. It provides up to 5 independent MIDI inputs and 5 independent MIDI outputs. It is only available as a surface mount IC, and only in large (250+) quantities. TK organizes regular bulk orders for this IC.

The MBHP “USB GM5 Module” is a simple PCB which holds the GM5 IC, a USB “type B” jack, and all required components for one MIDI input and one MIDI output. It does not require any other MBHP modules to provide basic 1×1 USB<>MIDI I/O functionality.

While there is debate among the MIDIbox community about the difficulty/practicality of SMT (surface mount technology) in DIY projects, it is generally agreed that you should not attempt to build this or any other project that requires you to solder surface-mount devices (SMDs) if you have never soldered before.

Options

A single MIDI input and MIDI output jack may be mounted to the board, or connected via SIL headers. The module includes an additional “Digital I/O” header, to which up to 4 additional inputs and outputs may be connected, in which case each physical i/o would require its own support parts (optocouplers, resistors, diodes etc). These “Digital I/O” pins could also be connected directly to Core module(s), with no need for optocouplers.

Multiple USB GM5 modules (and/or GM5x5x5 modules) may be connected to a single computer. Each

module will appear in your operating system with identical names unless you add an optional EPROM, programmed with the name you would like the module to appear as in your OS. This EPROM is not absolutely required in order to use multiple GM5s, but the option has been provided in case your needs would be better served with unique interface names.

5 VDC is also available from the USB GM5 module, at up to 500 mA. This is enough to power additional MBHP modules.

Alternatives

An alternative to this module is the “GM5x5x5”, a standalone 5×5 USB MIDI interface on a single PCB.

Another alternative is the USB PIC module, in which USB is wired directly to a PIC-based Core running special (non-MIOS) firmware. Further development of this module is unlikely, given the low cost and great performance of the GM5.

Construction

Parts

Lukas412 kindly shared his Mouser part list:

GM5 USB Module	Mouser Part#	Quantity
Resistors		
4.7k	291-4.7k-RC	1
1k	291-1k-RC	3
220	291-220-RC	4
27	291-27-RC	2
Capacitors		
100nF Ceramic	594-K104M15X7RF53H5	2
1000nF (1uF) Ceramic	810-FK28Y5V1C105Z	1
22pF Ceramic Cap	21RD722-RC	2
10uF Polarised Cap	647-UVR1V100MDD1TA	1
Diodes		
1N4148	78-1N4148	1
Mechanical		
USB Socket B-Type	534-924	1
MIDI sockets	161-0505	2
ICs		
Crystal 16 MHz	73-XT49U1600-20	1
Optocoupler 6N138	512-6N138	1
Serial EEPROM 24C04	698-CAT24C04LI-G	1
IC Sockets		
IC-Socket	571-1-390261-2	1

Operation

Drivers

No drivers need to be installed to use the GM5 with Linux or Mac OS X computers. It is a class-compliant device.

Windows computers may work with the GM5 using the Microsoft's driver, however the Ploytec driver works better.

Setup

Windows

Linux

Mac OS X

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