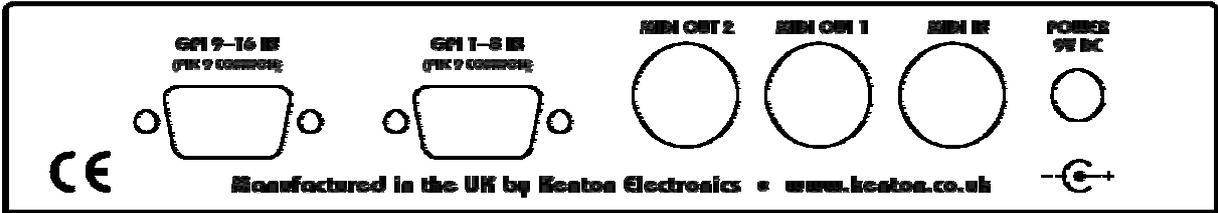




# GPIM-16

16 gpi inputs to midi



# *Operating manual*

# INTRODUCTION

Welcome to the **GPIM-16** - GPI to MIDI unit. The **GPIM-16** is very easy to use, but please take a few moments to read through the manual to avoid any operational difficulties.

## CONNECTIONS

### **MIDI In**

This is provided in order that you can 'daisy chain' several boxes together. Any data received at the MIDI In socket is merged with any new data generated from the GPI inputs and everything is then sent to the MIDI outs 1 & 2. There is no limit to the number of GPIM-16 units that can be daisy chined together as the data is re-generated rather than being merely copied.

### **DC IN 9V**

Plug the power adapter into here. The unit will take an adapter with an output of 9V either regulated or unregulated. The socket is a 2.1mm type with centre positive and is compatible with with locking type plugs. Do not use an adaptor with an output voltage higher than 9V, and the **GPIM-16** must not share an adaptor with any other device. Failure to observe this will invalidate your warranty, and will probably damage the other device, the **GPIM-16** and/or the power supply.

### **MIDI out 1 & MIDI out 2**

MIDI out 1 and MIDI out 2 carry identical MIDI information. The second output is provided so that data can be set to a backup computer system at the same time as supplying the primary computer.

## DISPLAY

The display has several functions; In normal operating mode, the display will show three horizontal bars until a GPI input is received, it will then show a number between 1 and 16 to indicate the GPI input which was activated. Note that if two inputs are received in quick succession, it will show the later one. After a couple of seconds, the display will revert to the three dashes display. In this mode, the dots above the display will indicate MIDI In and MIDI out activity. The display is also used for editing, which will be dealt with later.

## USING THE GPIM-16

Connect your GPI inputs to pins 1 to 8 of the 9 pin D connectors – pin 9 is the ommon ground connection. Connect any other MIDI source to the MIDI input and connect the power supply.

When power is applied to the **GPIM-16**, the words **KENTON GPIM** will scroll across the display, then three horizontal bars will show, indicating that no GPI input has recently been received.

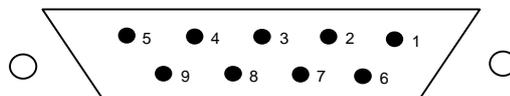
The factory default settings are listed on the last page.

Various parameters can be edited and stored – see the section on editing for more information.

The GPIM-16 also contains a MIDI analyser – see the MIDI analyser section for more information.

Connections for the GPI inputs are on 9 pin D connectors. Below is the view looking at the back of the unit and is the same view as looking at the solder connections of the corresponding plug.

Pins 1 – 8 are the input pins and pin 9 is the common ground connection. The input pins are internally pulled up by 4K7 ohm pullups to +5 volts. Shorting an input to ground (pin 9) activates that input.



## EDIT MODE

To put the GPIM-16 into edit mode, use a screwdriver or pen to press the recessed edit button. The **edit** dot will light to show that it is in edit mode. The **para** dot will also light to show that the required parameter can be changed by using the inc & dec buttons. When the required parameter has been selected, press the mode button. The **para** dot will go out and the **val** dot will light to indicate that the value can now be changed by using the inc and dec buttons.

When the required value has been set, either press the mode button again to select another parameter, or press the edit button again. This will return you to normal operating mode again and save all the settings you have changed. Note that settings are not stored permanently until you leave edit mode. Settings are stored in non-volatile eeprom memory.

Note also that the GPIM-16 will continue to function normally during the edit process, except that the display will not indicate an activated input.

### Edit parameters:

**'chn'** - select the MIDI channel which output MIDI messages will be sent on  
available values – 1 to 16 – default =1

**'nn1'** - set the note (or cont or prog) number for GPI input number 1 (2 to 8 follow consecutively)  
available values – 0 to 127 – default =36

**'oF1'** - set whether MIDI off messages are sent for GPI inputs 1 to 8  
available values – yes or no – default =yes (note: program changes do not send off messages)

**'nn9'** - set the note (or cont or prog) number for GPI input number 9 (10 to 16 follow consecutively)  
available values – 0 to 127 – default =44

**'oF9'** - set whether MIDI off messages are sent for GPI inputs 9 to 16  
available values – yes or no – default =yes (note: program changes do not send off messages)

**'dEb'** - set the debounce value for all GPI inputs – value shown in milliseconds (approx)  
available values – 1 to 100– default =10

**'out'** - set the output MIDI message type for all GPI inputs  
available values – 'not' (notes) , 'con' (controllers) or 'prg' (program changes) – default =notes

## MIDI ANALYSER

Power the unit on while holding the 'dec' button pressed. The display will show the firmware revision number until the button is released; the display will then show '**ntn**'. Use the **inc** and **dec** buttons to change the type of MIDI data which will be displayed, according to the following table:

**'ntn'** – note number

**'ntv'** – note velocity

**'ccn'** – controller number

**'ccv'** – controller number

**'chn'** – MIDI channel number

**'prg'** – program number

**'sxn'** – sysex no – shows '**sxy**' – sysex yes if sysex is being received

**'tcn'** – timing clock no – shows '**tcy**' – timing clock yes if timing clock is being received

**'clk'** – clock status – shows '**stt**' for start, '**stp**' for stop or '**cnt**' for continue

Pressing all three buttons **mode**, **dec** and **inc** together will exit analyser mode and return the unit to normal operation.

## FACTORY DEFAULTS

If you want to reset your **GPIM-16** to its factory default settings, you can do so by applying power to the unit whilst holding the recessed edit button pressed.

`def` (factory defaults) will momentarily be displayed when this has been done.

The factory default settings are:

MIDI channel #1

GPI 1-8 midi notes 36-43,

GPI 1-8 MIDI off enabled (yes)

GPI 9-16 midi notes 44-51

GPI 1-8 MIDI off enabled (yes)

Debounce time 5mS

Output message type=notes

## DISPLAYING THE FIRMWARE VERSION NUMBER

Power the unit on while holding the 'dec' button pressed – keep pressed while you read the number. When you release the button you will be in analyser mode. Pressing all three buttons **mode**, **dec** and **inc** together will exit analyser mode and return the unit to normal operation.

## SPECIFICATIONS

Power Input	9V DC – mains adaptor supplied
Power consumption	100mA, 2.1mm plug (centre positive)
MIDI	In, Out1 & Out2 (out1 & out2 give the same data out)
Inputs	16 GPI – 8 on each of 2 x 9 pin D connectors – pin 9 common ground
Display	3 x 7 segment display
Weight	850 gms including PSU
Dimensions	190 x 110 x 38 mm
Non-volatile memory	EEPROM (no back-up battery required)

## WARRANTY

The **GPIM-16** comes with a 12 month (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Kenton Electronics).

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firmware rev# 1138

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