MIDI SWITCHER

The information on this page is the bare minimum needed to build the project, however you will find more information at **http://six4pix.com/switcher**

I recommend you check the expanded instructions before you start building the board.

Here are the component designators used on the PCB:

C1,C2,C3	100nF CERAMIC CAPACITOR (X3)
C4	47UF 63V ELECTROLYTIC CAPACITOR
C5	4U7 16V ELECTROLYTIC CAPACITOR
D1	1N4148 SIGNAL DIODE
D2	1N4001 RECTIFIER DIODE
R1	220R RESISTOR
R2,R3	1K5 RESISTOR (X2)
R4-R21	1K RESISTOR (X18)
LED1-8	3MM LED – BLUE (x8)
PWR, ACT	3MM LEDS – RED OR GREEN (x2)
REG1	7805 +5V VOLTAGE REGULATOR TO220
MODE	6MM TACTILE SWITCH
	Please carefully check the polarity of D1, D2, REG1 and all LEDs before soldering!
IC1	PIC16F1825 MICROCONTROLLER
IC2	6N138 OPTOCOUPLER
Beside LED1-8	TIP120 DARLINGTON TRANSISTOR TO220 (x8)
	Take care with transistor orientation. Use the outline printed on the PCB and note that transistors on right side are in the opposite orientation to those on the left.
MIDI_IN	5PIN DIN CONNECTOR FEMALE
DCIN, PORTA-H	STACKING DOUBLE TERMINAL BLOCK 5MM (X9)
	Clip the terminal blocks into strips of four before soldering. Ensure the cable entry hole for each terminal faces the outside of the board!

Attach the 4 brass pillar "legs" into the holes in the PCB using the M3 machine screws.

The default MIDI note to port mapping is

Port	Note	Port	Note
PORT A	C3 (60)	PORT E	E3 (64)
PORT B	C#3 (61)	PORT F	F3 (65)
PORT C	D3 (62)	PORT G	F#3 (66)
PORT D	D#3 (63)	PORT H	G3 (67)

The default receive channel is **MIDI Channel 1** for all ports. Output is set at **100% duty** (i.e. constantly ON when triggered) and **20 milliseconds duration**.

The configuration can be changed over MIDI using a downloadable Java application. Check the web link given at the top of this sheet for the full instruction manual and the application download.

*** Power the board from a DC supply of 7-35 volts**

*** Do not exceed 5A pulsed current draw per port, or 5A continuous current draw for all ports combined.**

*** Make sure your power supply can provide sufficient current to power your combined loads!**

*** Use the markings on the board to identify the location and polarity of each port**

***Check components and power supply for signs of overheating during use (reduce load or upgrade the supply accordingly)**

*** Be aware that when driving inductive loads like solenoids, you may feel small electric shocks if you touch certain components (e.g. transistor tabs) and connections while the loads are being switched. These shocks are harmless, but can be disconcerting if you are not expecting them!**

*** NEVER CONNECT THE BOARD DIRECTLY TO MAINS ELECTRICITY!!!!!**

*** Always check the manual if you have any doubts**

*** Have Fun!**

Feel free to contact me at **sixtyfourpixels@gmail.com** with questions, suggestions and feedback.

MIDI SWITCHER

The information on this page is the bare minimum needed to build the project, however you will find more information at **http://six4pix.com/switcher**

I recommend you check the expanded instructions before you start building the board.

Here are the component designators used on the PCB:

C1,C2,C3	100nF CERAMIC CAPACITOR (X3)
C4	47UF 63V ELECTROLYTIC CAPACITOR
C5	4U7 16V ELECTROLYTIC CAPACITOR
D1	1N4148 SIGNAL DIODE
D2	1N4001 RECTIFIER DIODE
R1	220R RESISTOR
R2,R3	1K5 RESISTOR (X2)
R4-R21	1K RESISTOR (X18)
LED1-8	3MM LED – BLUE (x8)
PWR, ACT	3MM LEDS – RED OR GREEN (x2)
REG1	7805 +5V VOLTAGE REGULATOR TO220
MODE	6MM TACTILE SWITCH
	Please carefully check the polarity of D1, D2, REG1 and all LEDs before soldering!
IC1	PIC16F1825 MICROCONTROLLER
IC2	6N138 OPTOCOUPLER
Beside LED1-8	TIP120 DARLINGTON TRANSISTOR TO220 (x8)
	Take care with transistor orientation. Use the outline printed on the PCB and note that transistors on right side are in the opposite orientation to those on the left.
MIDI_IN	5PIN DIN CONNECTOR FEMALE
DCIN, PORTA-H	STACKING DOUBLE TERMINAL BLOCK 5MM (X9)
	Clip the terminal blocks into strips of four before soldering. Ensure the cable entry hole for each terminal faces the outside of the board!

Attach the 4 brass pillar "legs" into the holes in the PCB using the M3 machine screws.

The default MIDI note to port mapping is

Port	Note	Port	Note
PORT A	C3 (60)	PORT E	E3 (64)
PORT B	C#3 (61)	PORT F	F3 (65)
PORT C	D3 (62)	PORT G	F#3 (66)
PORT D	D#3 (63)	PORT H	G3 (67)

The default receive channel is **MIDI Channel 1** for all ports. Output is set at **100% duty** (i.e. constantly ON when triggered) and **20 milliseconds duration**.

The configuration can be changed over MIDI using a downloadable Java application. Check the web link given at the top of this sheet for the full instruction manual and the application download.

*** Power the board from a DC supply of 7-35 volts**

*** Do not exceed 5A pulsed current draw per port, or 5A continuous current draw for all ports combined.**

*** Make sure your power supply can provide sufficient current to power your combined loads!**

*** Use the markings on the board to identify the location and polarity of each port**

***Check components and power supply for signs of overheating during use (reduce load or upgrade the supply accordingly)**

*** Be aware that when driving inductive loads like solenoids, you may feel small electric shocks if you touch certain components (e.g. transistor tabs) and connections while the loads are being switched. These shocks are harmless, but can be disconcerting if you are not expecting them!**

*** NEVER CONNECT THE BOARD DIRECTLY TO MAINS ELECTRICITY!!!!!**

*** Always check the manual if you have any doubts**

*** Have Fun!**

Feel free to contact me at **sixtyfourpixels@gmail.com** with questions, suggestions and feedback.