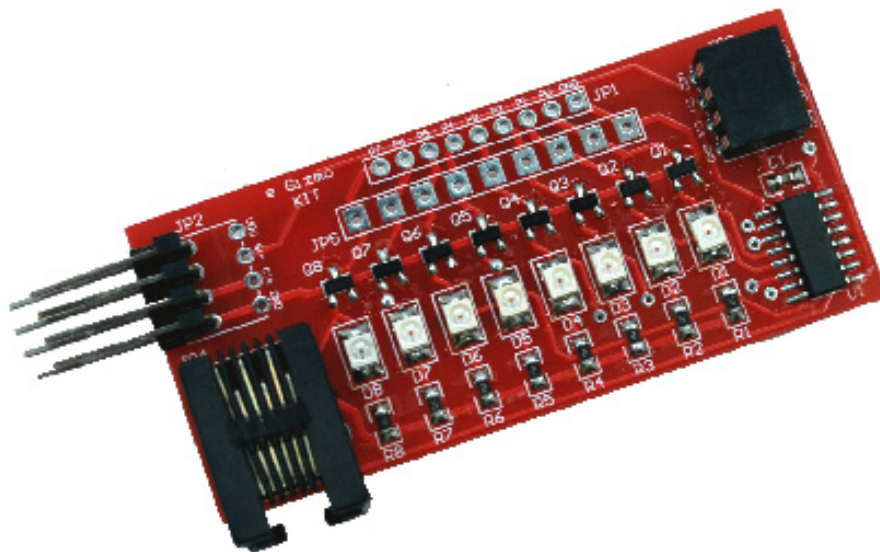


Output Expander Module

Hardware Manual Rev 1r0



FEATURES & SPECIFICATIONS

The output expander module is in reality a serial to parallel converter with 8 output ports per board. Each output ports has LED state indicators. Up to 10 modules can be cascaded to build up to 80 additional output ports with the use of just 3 microcontroller I/O ports. Works with 3.3V and 5V logic.

MAJOR COMPONENTS PRESENTATION

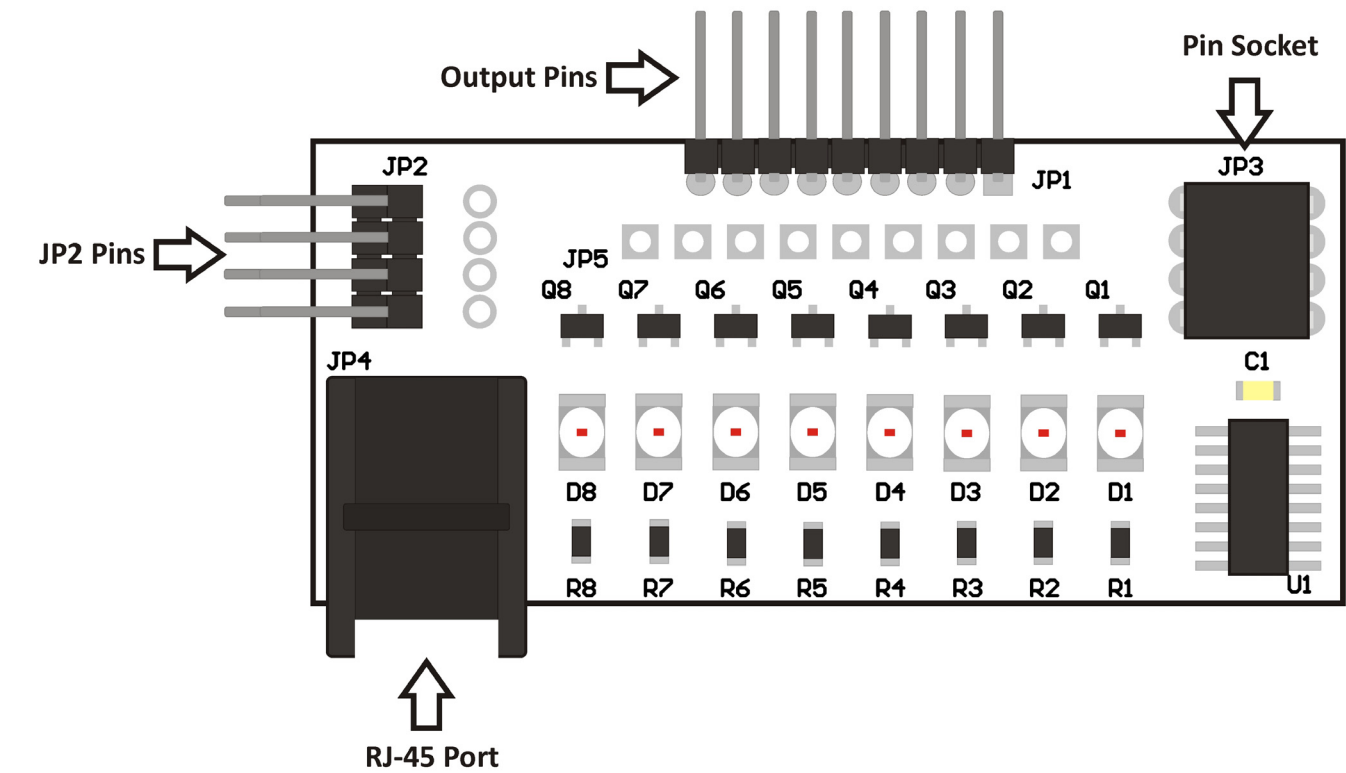


Figure 1. Output Expander Module & its major Components

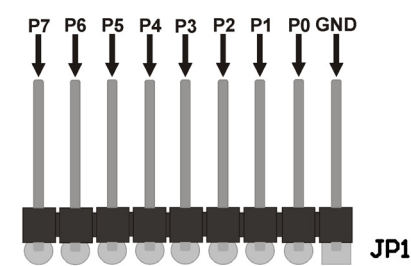


Figure 2. JP1 Pin I.D. Illustration

Table 1. JP1 Pin I.D. & Descriptions

Pin I.D.	Description
P7	Output.
P6	Output.
P5	Output.
P4	Output.
P3	Output.
P2	Output.
P1	Output.
P0	Output.
GND	Ground.

PIN ASSIGNMENTS

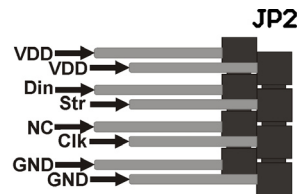


Figure 3. 'JP2' Pin I.D. Illustration.

Table 2. JP2 Pin I.D. & Descriptions

Pin I.D.	Description
VDD	Supply Voltage +5V
Str	Strobe
Clk	Clock(Hi,Lo)
GND	Ground
VDD	Supply Voltage
Din	Data In
NC	No Change
GND	Ground

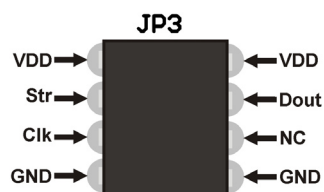


Figure 4. 'JP3' For Cascade, Pin Slot Pin I.D. Illustration.

Table 3. JP3 Pin I.D. & Descriptions

Pin I.D.	Description
VDD	Supply Voltage +5V
Str	Strobe
Clk	Clock(Hi,Lo)
GND	Ground
VDD	Supply Voltage
Dout	Data out
NC	No Change
GND	Ground

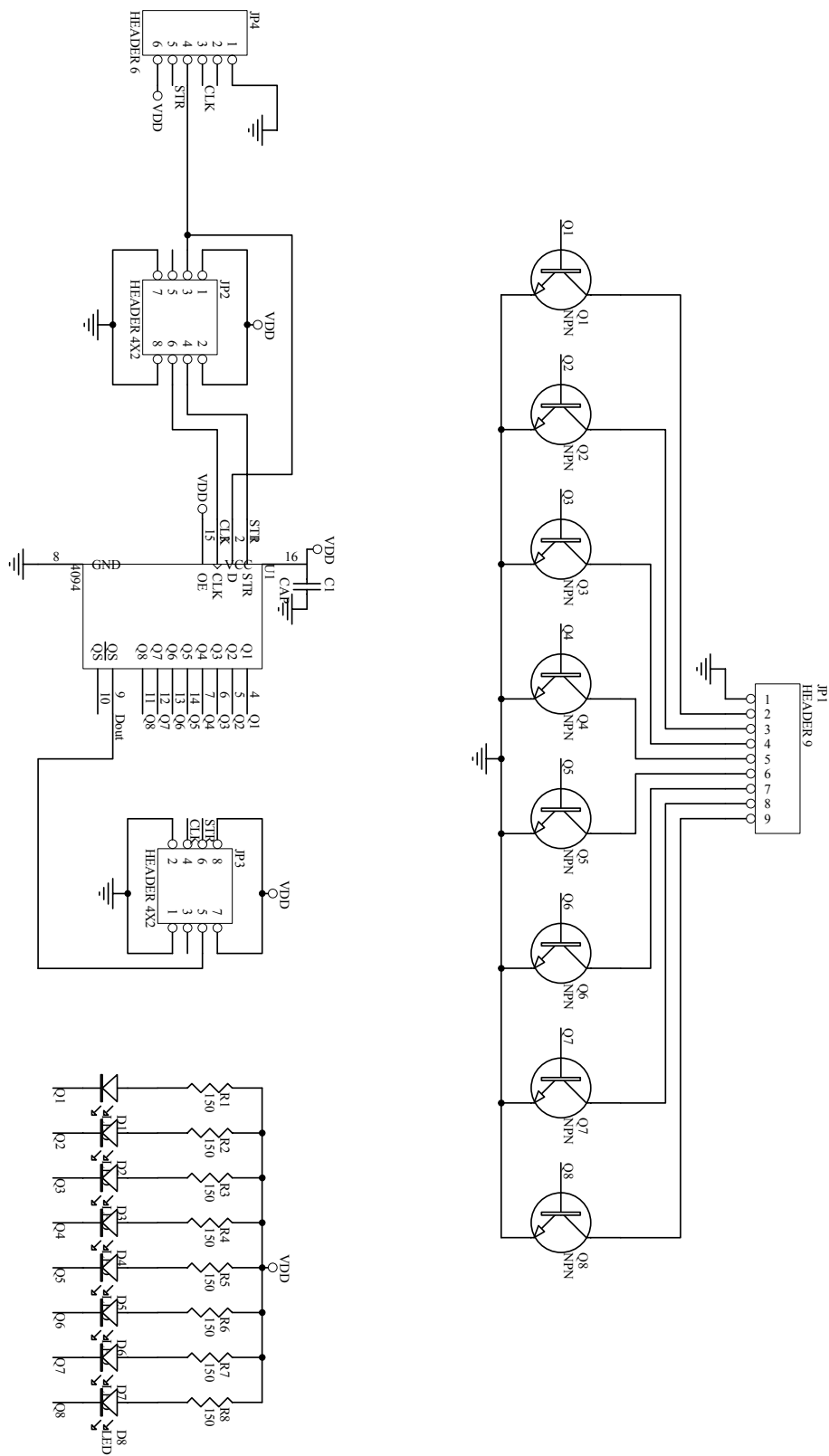


Figure 5. Schematic Diagram of Output Expander Module

PCB BOARD PRESENTATION

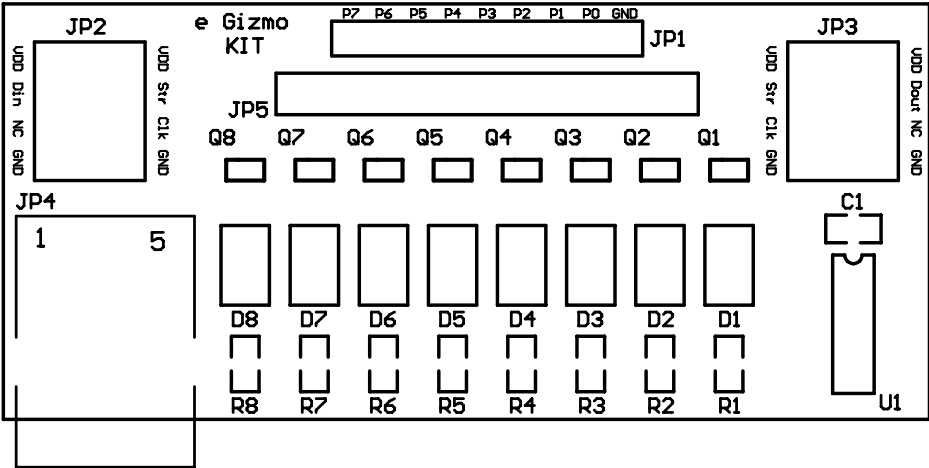


Figure 6. Output Expander Module PCB
(silkscreen layout)

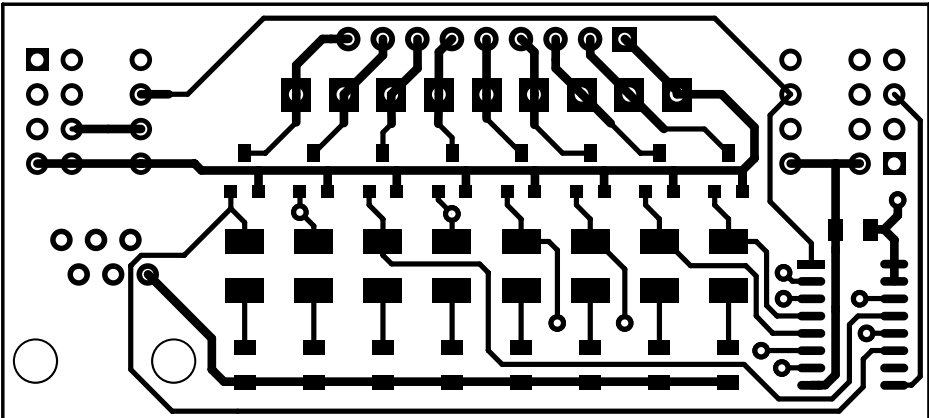


Figure 7. Output Expander Module PCB
Copper Pattern (Top Layer)

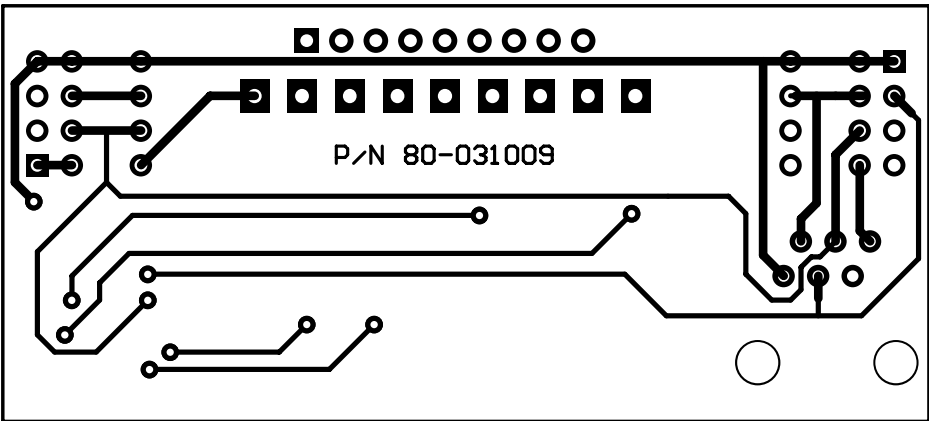


Figure 8. Output Expander Module
Copper Pattern (Bottom Layer)