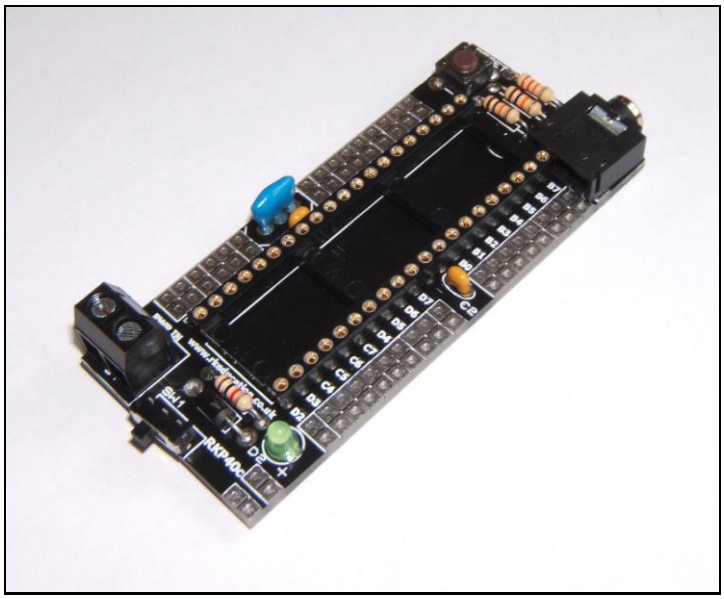
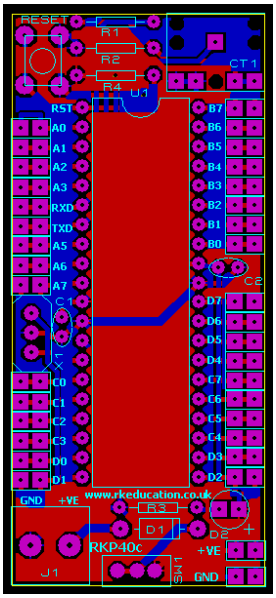
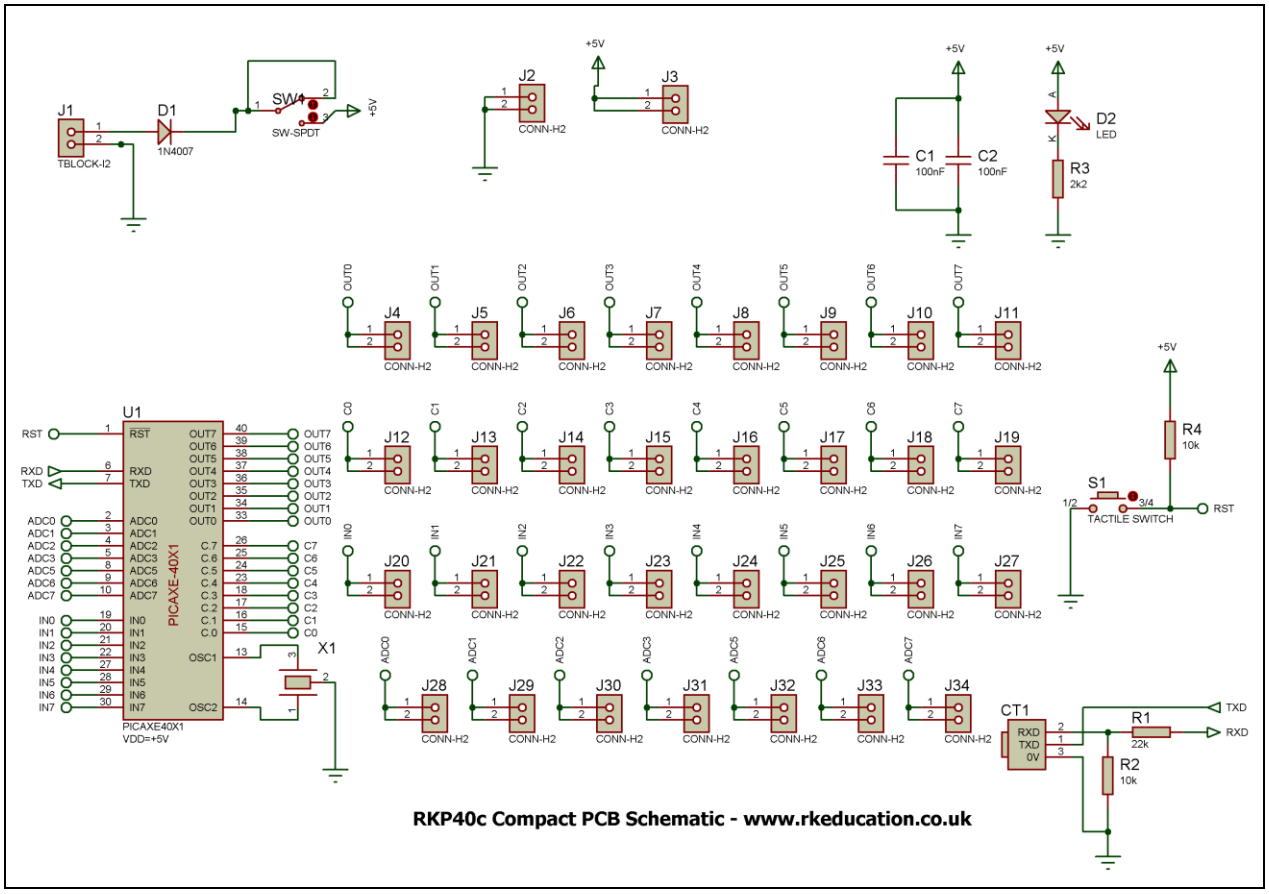
RKP40C Component List and Instructions



Constructed PCB



PCB Layout



Schematic Diagram

Description

The RKP40C compact project PCB has been designed to use PIC microcontrollers such as PICAXE

- Software is downloaded from a PC into the microcontroller via a 3.5mm stereo socket
- The clock reference is from a ceramic resonator
- All input and output pins have a PTH
- Easily interfaced to peripheral devices
- Power supplied via a terminal block – 6VDC is recommended
- Power switch and 2 LED power indicators

Component List

C1, C2 – 100nF multilayer ceramic capacitor
D1 – 1N4007
D2 – 3/5mm LED
IC1 – 40 way DIP socket with PIC microcontroller
R1 – 22k ¼ watt resistor (red red orange)
R2 & R4 – 10k ¼ watt resistor (brown black orange)
R3 – 1k ¼ watt resistor (brown, black, red)
DL SOCKET – PCB mount 3.5mm stereo connector
TB1 – 2 way 5mm pitch terminal block for power supply
Ultra miniature slide switch for power switch
X1 – 4MHz ceramic resonator

Instructions

The PCB has been designed to use microcontrollers based on PIC, for instructions on using your chosen microcontroller please see the appropriate website

Connecting Power

The power is connecting the terminal block TB1, the 0V input, usually black is marked clearly as is +VE which is usually red, a regulated 6VDC power supply can be used, other voltages may be used as required. The recommended maximum voltage for a PIC is 5.5VDC, the 6VDC supply is reduced by approximately 0.7VDC by diode D1, D1 may be left out but if this is done adjust the supply voltage accordingly.

A power switch has been included and is to the right of TB1.

Downloading software

Once the software has been written using the PICAXE Programming Editor (or equivalent) it can be downloaded into the PICAXE (or equivalent). This is downloaded using a download cable that connects either to your PC's serial port or USB port. Insert the download plug into the download socket and activate the program function in your Programming Editor. If all goes well it will tell you the program download was successful.

Using the I/O pins

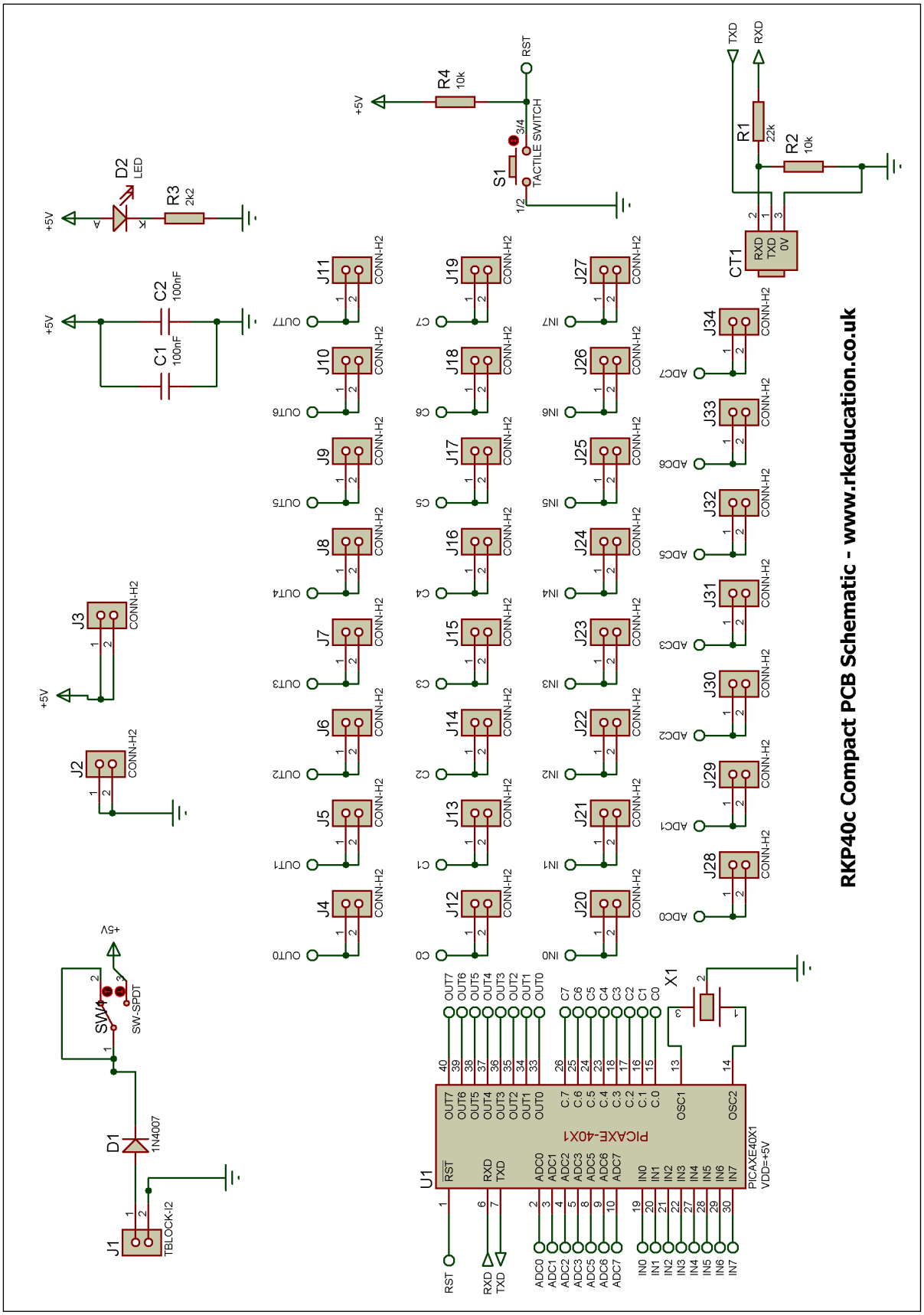
Using the i/o pins is simple and is just a case of soldering jumper wires between the appropriate pin and peripheral. Remember to use a common 0V. The PCB has have a reset but the chip can also be reset using the RST pin, to use the reset apply 0V to the RST pin. Power supply pins have been included below at the bottom left corner of the PCB, there are 2 0V and 2 +VE.

Please visit our website

www.rkeducation.co.uk

If you have any comments or queries please email us at

technical@rkeducation.co.uk


RKP40c Compact PCB Schematic - www.rkeducation.co.uk
U1
PICAXE-40X1
PICAXE40X1
VDD=+5V
X1
CT1
RXD
TXD
0V
R1
22k
R2
10k
R3
2k2
R4
10k
C1
100nF
C2
100nF
D1
1N4007
D2
LED
S1
TACTILE SWITCH
SW1
SW-SPDT
J1
TBLOCK-I2
J2
J3
CONN-H2
+5V
RST
TXD
RXD