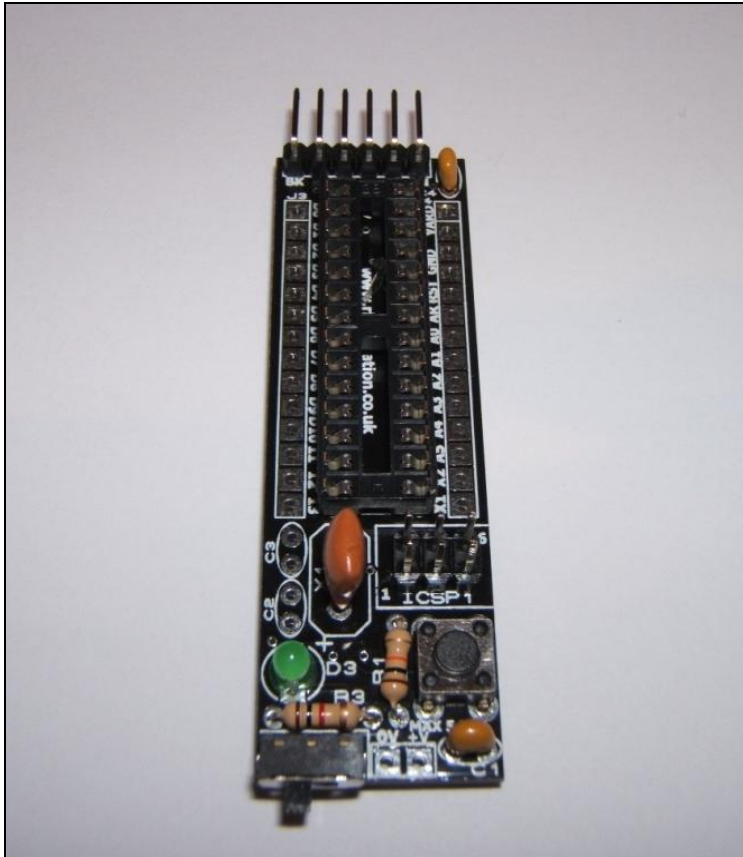
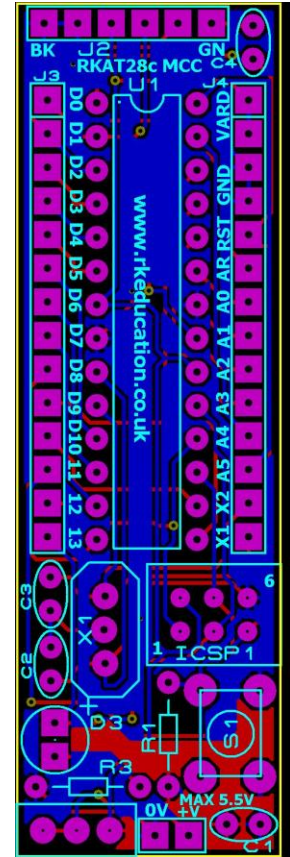


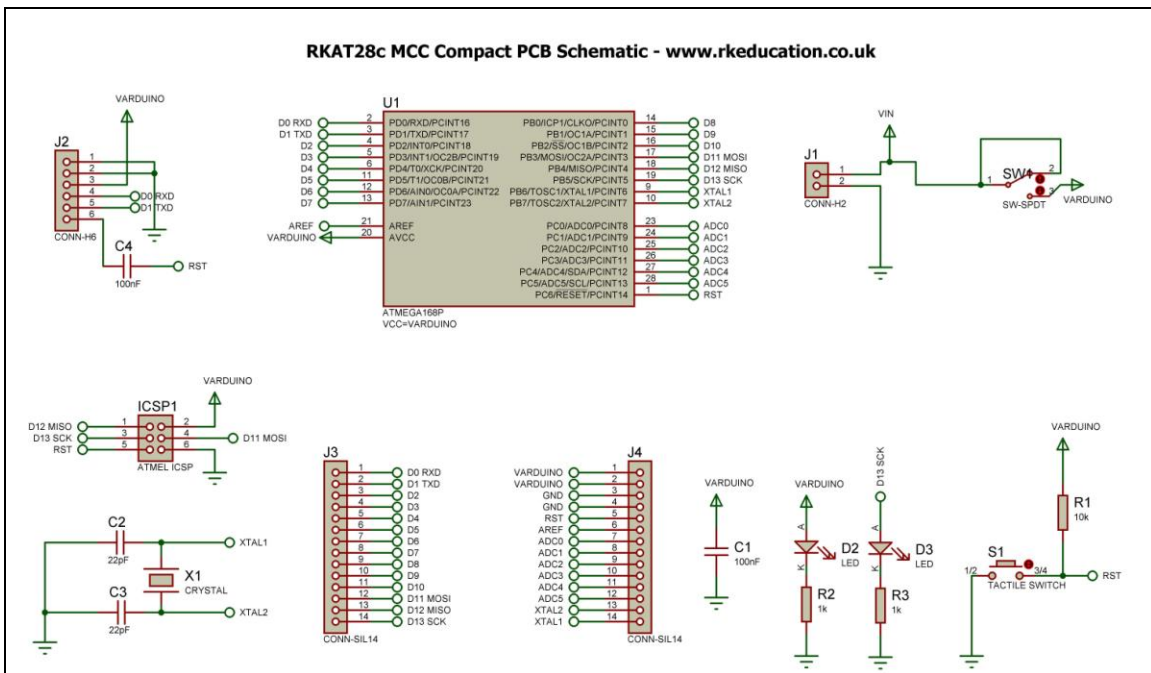
## RKAT28c MCC Component List and Instructions



Constructed PCB



PCB Layout



Schematic Diagram

## Description

The RKAT28c MCC compact project PCB has been designed to use ATMEL microcontrollers such as the ATmega328p, ATmega168 and Arduino

- A low cost method of producing Atmel projects
- Uses a high quality, double sided PCB
- Software is downloaded from a PC into the microcontroller from an Atmel AVR programmer or a FTDI USB cable
- The clock reference can be a ceramic resonator or crystal oscillator
- All input and output pins have a PTH
- Easily interfaced to peripheral devices
- Power supplied via either a DC socket or 2 way header – 5.5VDC max
- Power can also be supplied from the FTDI cable
- Power switch and LED power indicator

## Component List

C1, C4 – 100nF multilayer ceramic capacitor

C2, C3 - caps for use with crystal oscillator, refer to MCU technical information

D2, D3 – 3/5mm LED

ICSP1 - 2x3 way header plug

J1 - header for power supply

J3, J4 - 14 way SIL sockets (optional)

R1 – 10k  $\frac{1}{4}$  watt resistor (brown black orange)

R2, R3 – 1k  $\frac{1}{4}$  watt resistor (brown, black, red)

S1 - tactile switch

SW1 - Ultra miniature slide switch for power switch

TB1 – 2 way 5mm pitch terminal block for power supply

U1 – 28 way DIP socket with ATMEL microcontroller

X1 –ceramic resonator or crystal oscillator, when using an osciallator C2 & C3 will need to be used

## Instructions

The PCB has been designed to use Atmel microcontrollers and MCUs based on Atmel such as Arduino. For instructions on using your chosen microcontroller please see the appropriate website and/or forum.

## Connecting Power

Power is connected to the PCB via 2 way header marked J1. The 0V input, usually black is marked clearly as is +VE which is usually red, a regulated power supply should be used. The recommended voltage range for an Atmega328P-PU MCU is between 1.8 and 5.5VDC, please consult the technical information for your chosen MCU.

A power switch has been included and is to the left of the power supply header. When the PCB is powered the LED D2 should light.

### Downloading software

Once the software has been written using an appropriate programming editor it can be downloaded into the MCU. There are 2 methods of downloading software into the MCU,

- 1) Software can be downloaded using a USB FTDI cable that connects either to your PC's USB port and to the header J2.
- 2) Using an AVR programmer or equivalent, connect this to the ICSP 2x3 way header.

Please refer to the technical information for your MCU and/or programming system for specific information relating to the MCU and programming method you are using.

### Using the I/O pins

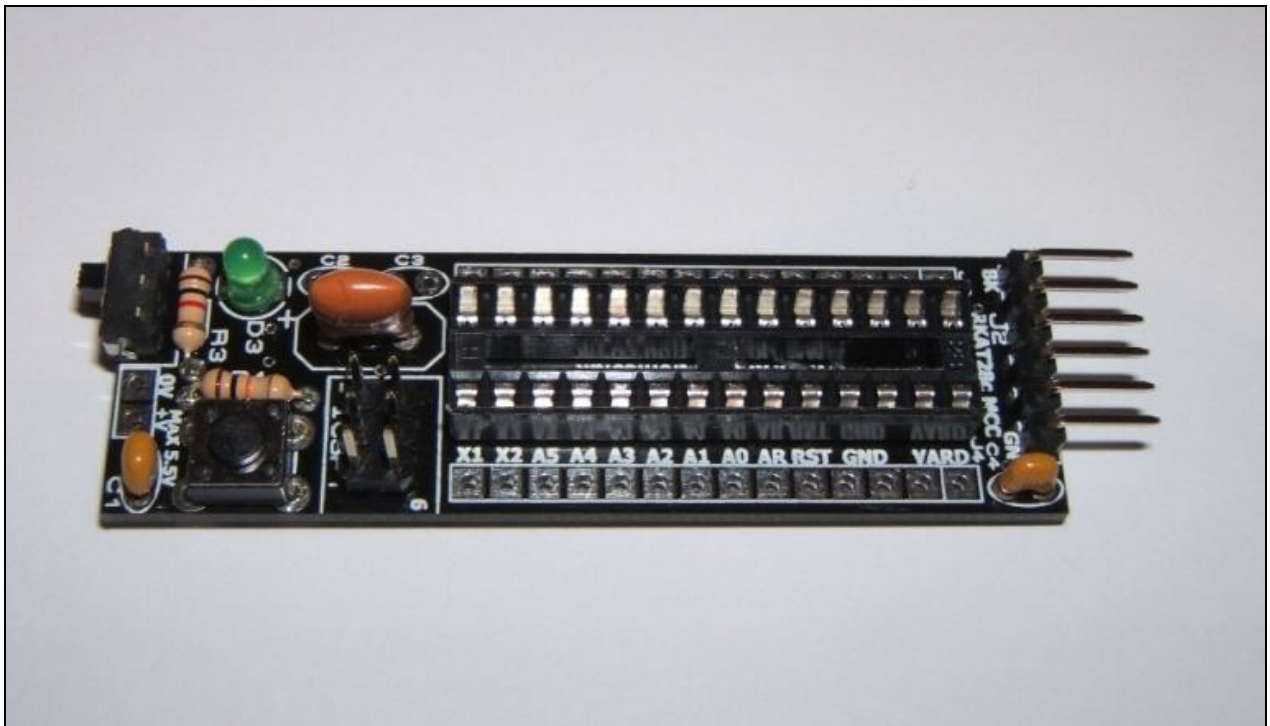
Using the i/o pins is simple and is just a case of soldering jumper wires between the appropriate pin and peripheral.

Please visit our website

[www.rkeducation.co.uk](http://www.rkeducation.co.uk)

If you have any comments or queries please email us at

[technical@rkeducation.co.uk](mailto:technical@rkeducation.co.uk)



RKAT28c MCC Compact PCB Schematic - www.rkeducation.co.uk

