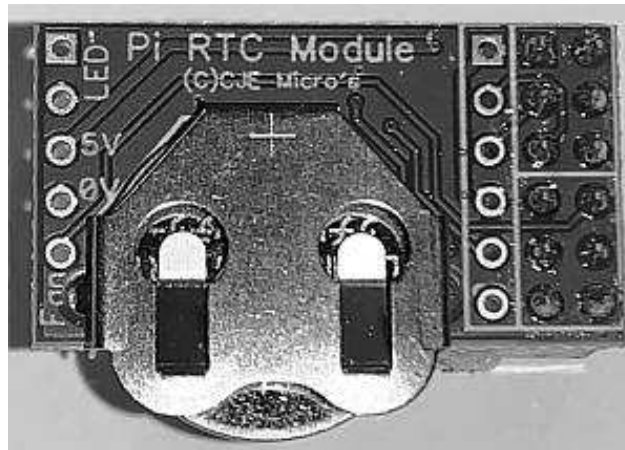# Real Time Clock Module for the Raspberry Pi
## For Models A, B, A+, B+, Pi Zero, Pi 2, Pi 3 & Pi 4
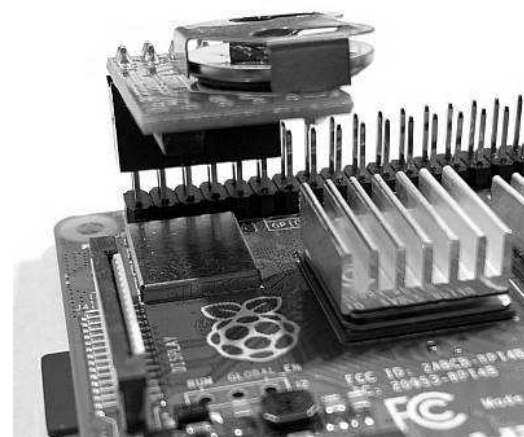

Fitting Instructions

The Real Time Clock (RTC) Module for the Raspberry Pi has been carefully designed to ensure that it fits within the footprint of the Raspberry Pi models 1-4, and so should fit into most cases.

These fitting instructions apply to all versions of the RTC Module, including those with a temperature sensor fitted. For the temperature sensor only board (ie. no RTC), please skip the section about fitting a battery.

1. Firstly, fit the CR1620 battery supplied with the RTC Module. To do this, carefully remove the battery from its packaging and slide into the battery holder on the underside of the RTC Module. Make sure that the + sign on the battery faces the + sign on the battery holder (see picture 1).

2. Plug the RTC Module into the first 12 GPIO pins closest to the SD Card end of the Raspberry Pi, so that the RTC Module is next to the small DSI connector (see picture 2).
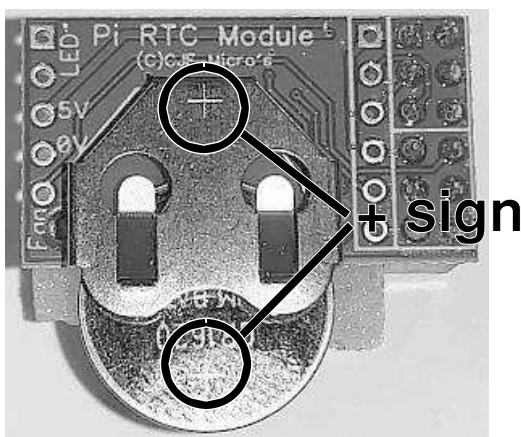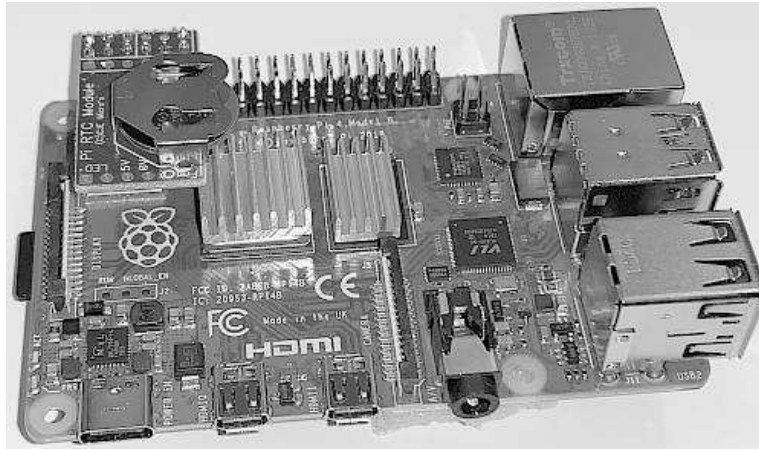

1. Fitting the RTC Module's battery   *2. Fitting the RTC Module on the first 12 GPIO pins*

3. When you first start your Raspberry Pi after fitting the RTC Module, you will need to set the system date and time in the usual way, but afterwards the RTC Module will retain the date & time when the Raspberry Pi is switched off.

3. The RTC Module in place on a Raspberry Pi 4

Support for the RTC in RISC OS is already built-in, and just needs configuring to 'Set manually' from Configure. Alternatively, if no network time is found, it will default to the RTC time. Software to read the temperature from the optional temparature sensor is available from our website at http://www.cjemicros.co.uk/rpi-rtc

To enable support for the RTC and/or temperature sensor in Raspbian, see the detailed instructions on our website at http://www.cjemicros.co.uk/rpi-rtc
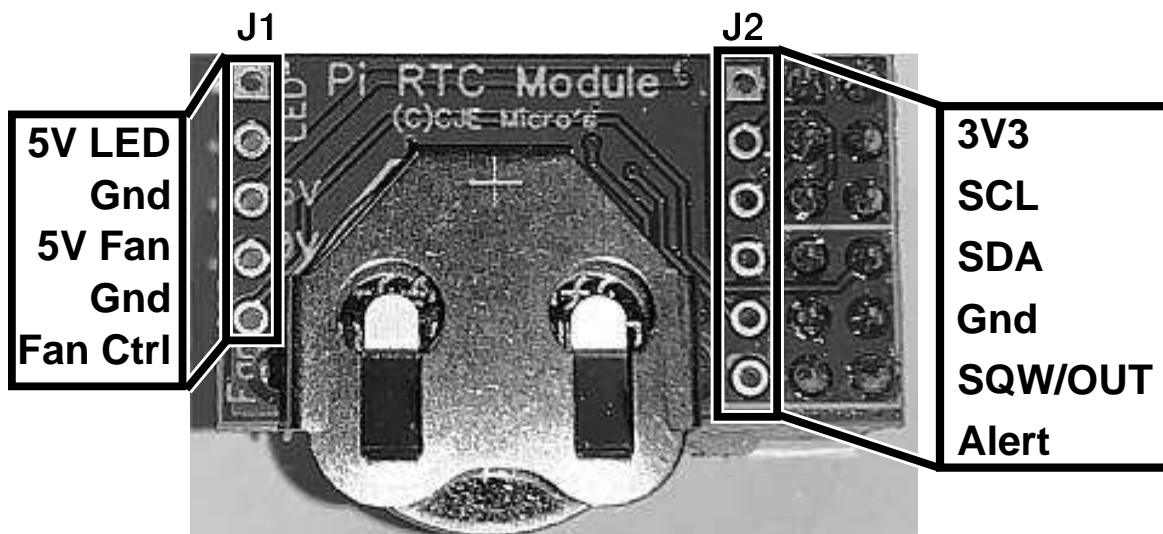
I^{2}C Addresses

RTC (DS1338) I^{2}C address: &D0 (write), &D1 (read)
Temperature sensor (MCP9801 or TMP75) I^{2}C address: &9E (write), &9F (read). By making a solder bridge between the two pads to the left of the this chip and cutting the track between pins 5 & 6, or 6 & 7, or 7 & 8, the address can be changed to &96, &92 or &90 (write), and &97, &93, &91 (read).

Pass-Through and Additional headers

The RTC Module has support for additional headers, should you wish to fit them, to allow connection of a 5V Power-on LED and the offical Pi4 case fan on J1 and pass-through of the I^{2}C bus on J2. Also available on J2 are the SQW/OUT output from the RTC and Alert output from the Temperature Sensor (if fitted). Details of how to use these outputs can be found on the relevant datasheet for each chip.

J1
5V LED
Gnd
5V Fan
Gnd
Fan Ctrl

J2
3V3
SCL
SDA
Gnd
SQW/OUT
Alert