Solar System Galaxy Keypad V2

The Solar System can use RS485 connected devices such as the Honeywell Galaxy keypad, but it can also work with ESP8266 based WiFi devices.

There is a design for a module which fits inside a Honeywell Galaxy keypad, and provides WiFi connectivity rather than using the RS485 bus. It contains an RS485 bus driver and connects to the keypad internally.

Parts

- 1x A standard Honeywell Galaxy keypad, set to address 0
- 1x PCB as per `12VGalaxyKeypadV2.svg`
- 1x SP3458 driver, 3.3V, SO8 (e.g. RS part 7695324)
- 1x 10kΩ 1206 SMT resistor (e.g. RS part 6791765)
- 1x Pololu D24V5F3 3.3V switching regulators (recommend buying direct from Pololu is US)
- 1x 3 pin headers for 3.3V regulator
- 1x ESP-01 processor
- 1x 4 pin mill-grid header, if needed for serial re-flashing, (e.g. RS part 6700927)

Assembly

We suggest fitting the regulator first, as the ESP-01 gives over it. You will need to crop the pins once fitted.
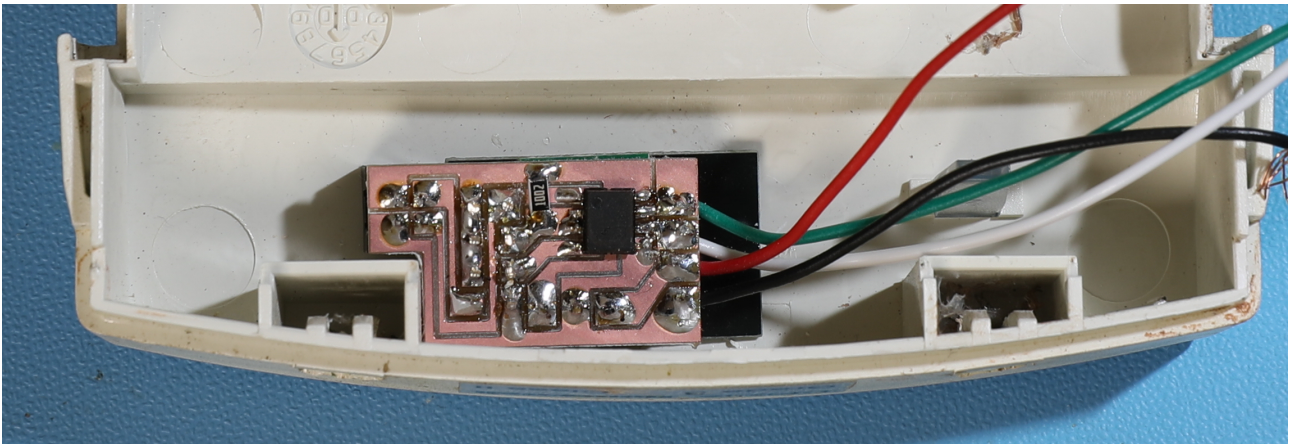
Then the ESP-01, 4 way connector, and then the SO8 driver. The 10kΩ can be fitted last.
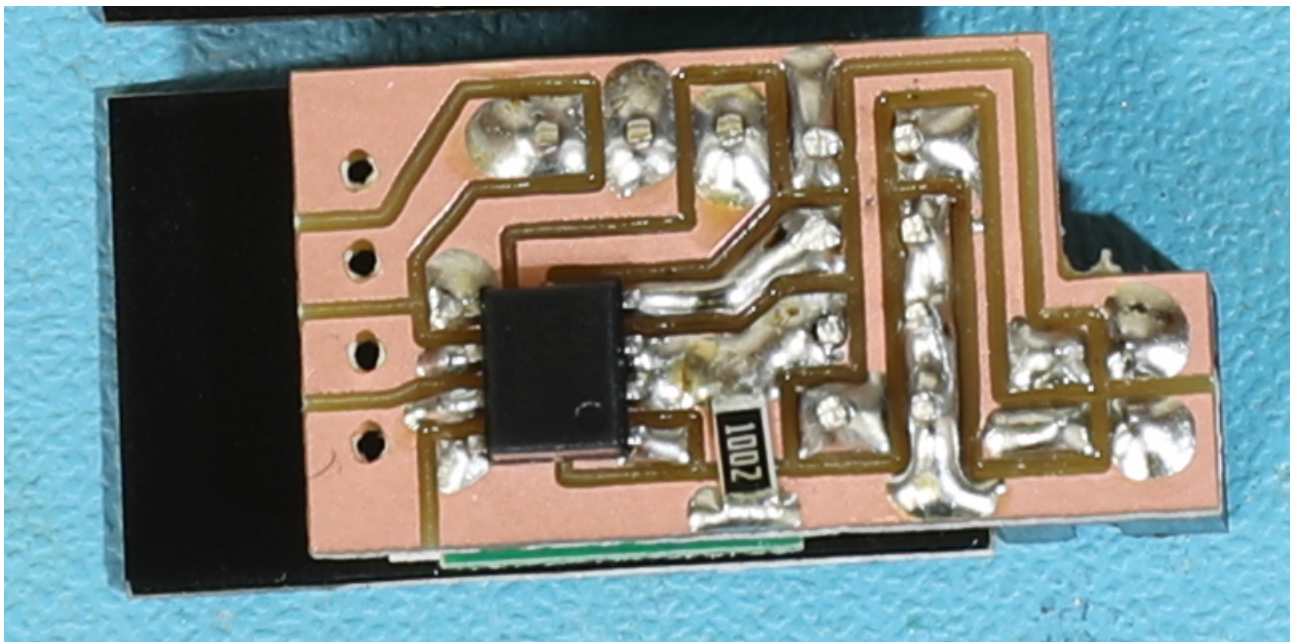
Fitting to keypad

The design is specifically made to fit inside the keypad.

Remove the PCB from the keypad, there is then space in the front plastic housing.

You will need to connect 4 wires, these can either use the holes in the PCB (as shown) or simply be soldered to the PCB side edges.

These then connect to the back of the main PCB, in the same order. Note the markings (other side) for **-**, **+**, and ensure these connect to GND and 12V (black and red as shown).
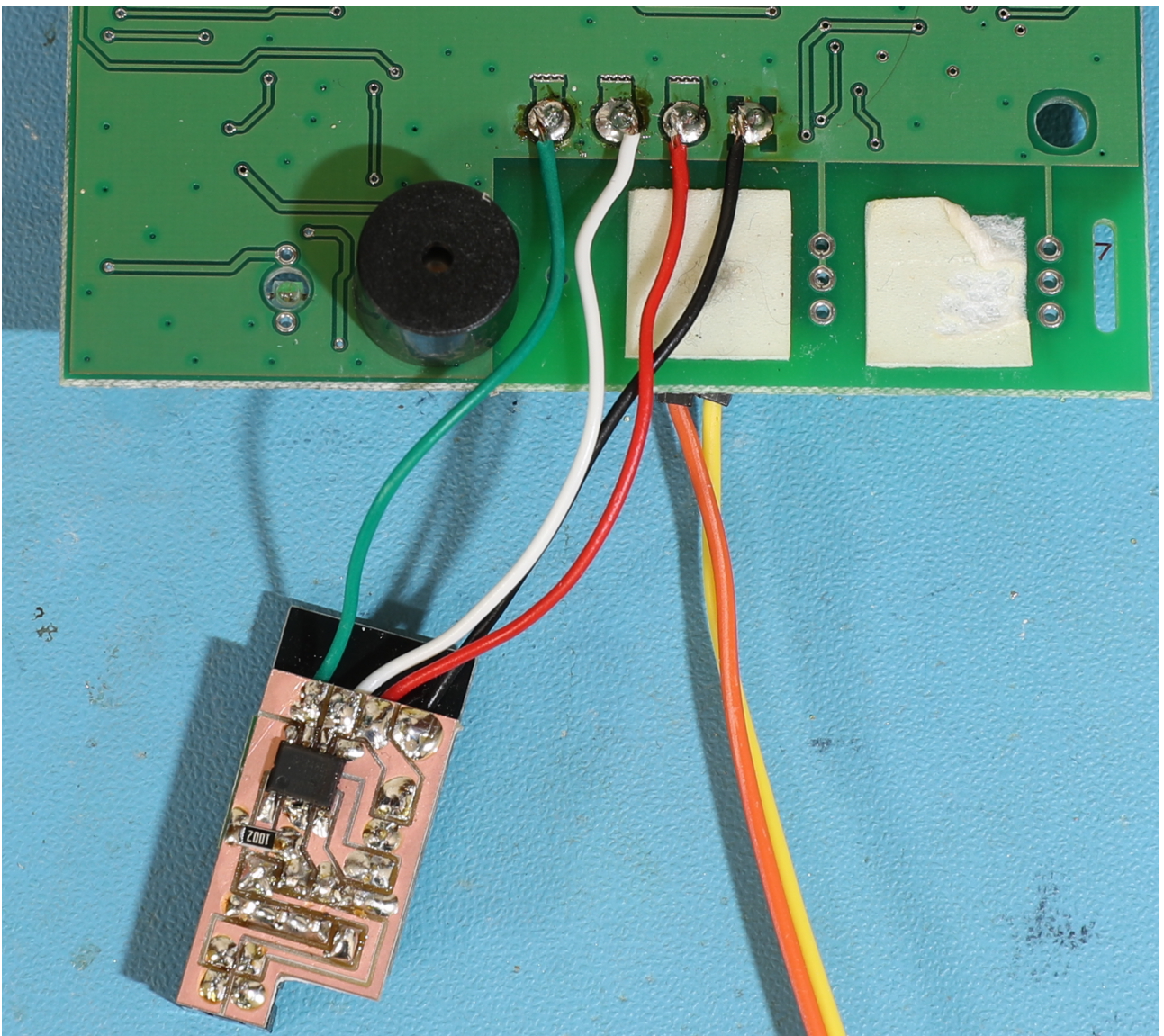
You can then re-assemble the keypad with the PCB in place. You only need to connect GND/12V to the keypad screw terminals, not the A/B bus wires. If you apply power the display will show the MQTT server and WiFi SSID and Device ID until it connects to the MQTT server.

Configuration

You will need to configure as a device, and specify the pins used :-

```
bustx="2" busrx="2" busde="0" keypad="1"
```