

# Assembling the m3220

## Parts List - (Stage1)

- |                            |           |
|----------------------------|-----------|
| 1 C/Film 270 1/8W Res      | R3        |
| 1 C/Film 560 1/8W Res      | R2        |
| 1 C/Film 1.2k 1/8W Res     | R5        |
| 1 C/Film 10k 1/8W Res      | R1        |
| 1 C/Film 6.8 1/4W Res      | R4        |
| 1 C/Film 10 1/4W Res       | R4        |
| 1 C/Film 15 1/4W Res       | R4        |
| 2 Socket Pin 1 Posn        | R4        |
| 4 0.1uF Dipped Ceramic Cap | DC1,2,3,4 |
| 1 10uF 6.3v Tantalum Cap   | RC2       |
| 1 3mm LED Green            | L1        |
| 1 2N2222A Transistor       | T1        |
| 1 m3220 PCB                |           |

It is recommended that R4 and the 2 socket pins are pre-assembled then soldered into the PCB as a unit. Chose starter value of R4 based on LCD's LED Vf: 3v/3.3/4.0 as 15/10/6.8 Ohms & if in doubt use 15. Max current should be 120mA.

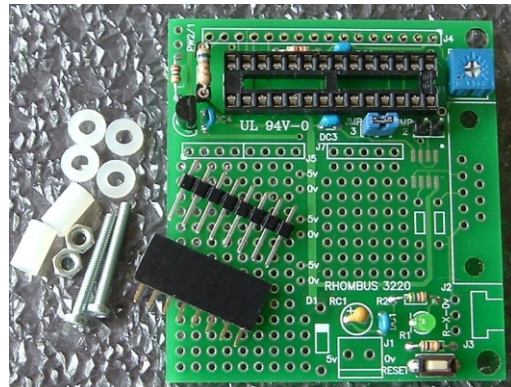
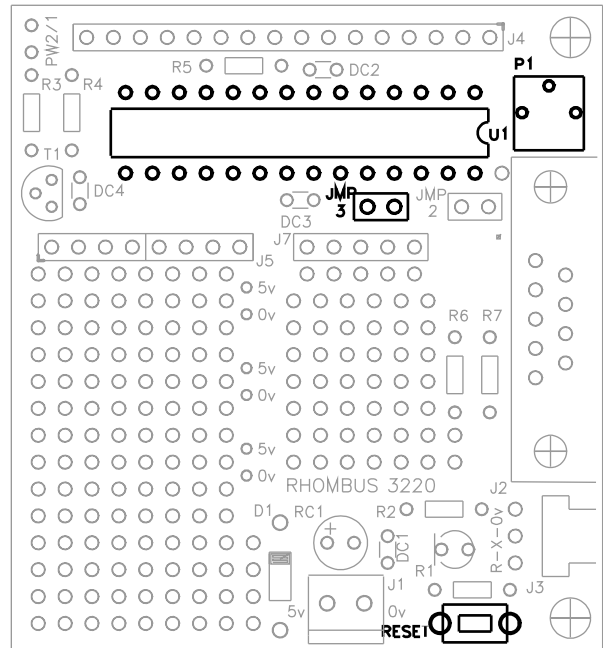
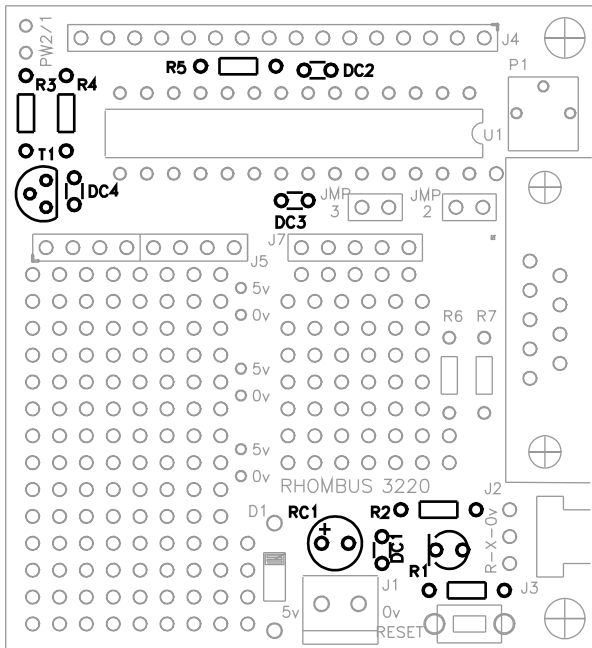
## Parts List - (Stage2)

- |                             |          |
|-----------------------------|----------|
| 1 DIP Socket 28 Pin         | U1       |
| 1 1/4" Pot 3362 10k         | P1       |
| 1 Header Male/Female 8 Posn | J5       |
| 3 Header Male 5 Posn        | J7, Jmp2 |
| 1 Button T1107              | Reset    |
| 1 0.1" Shunt                |          |

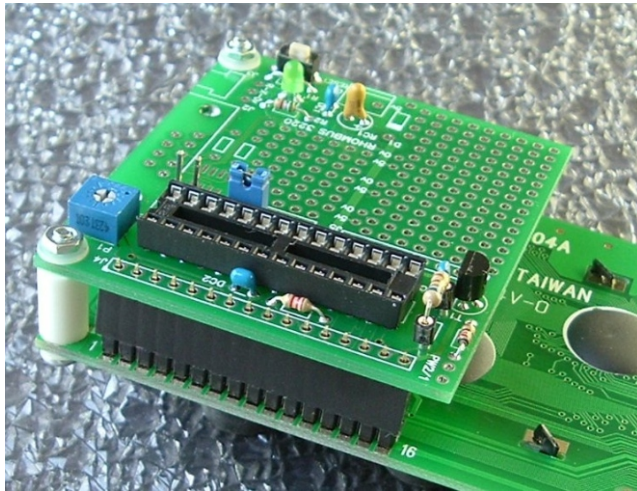
The 16 Pin Socket for the LCD should not be soldered until the PCB is mechanically assembled with the LCD - it is shown in the photo, but not soldered.

The user needs to decide whether to install the 8 Pin M&F connectors for a keypad at J5, and as to which is mounted in the PCB. See Manual for more details.

There are 10 Header Pins(not shown) for the 5 I/O directly connected at J5 - a double row could allow for power. But external Analog should not really be direct, but enter elsewhere followed by typically 10k then 0.1uF to 0v before entering the MCU.



# Assembling the m3220



## Parts List - (Stage3)

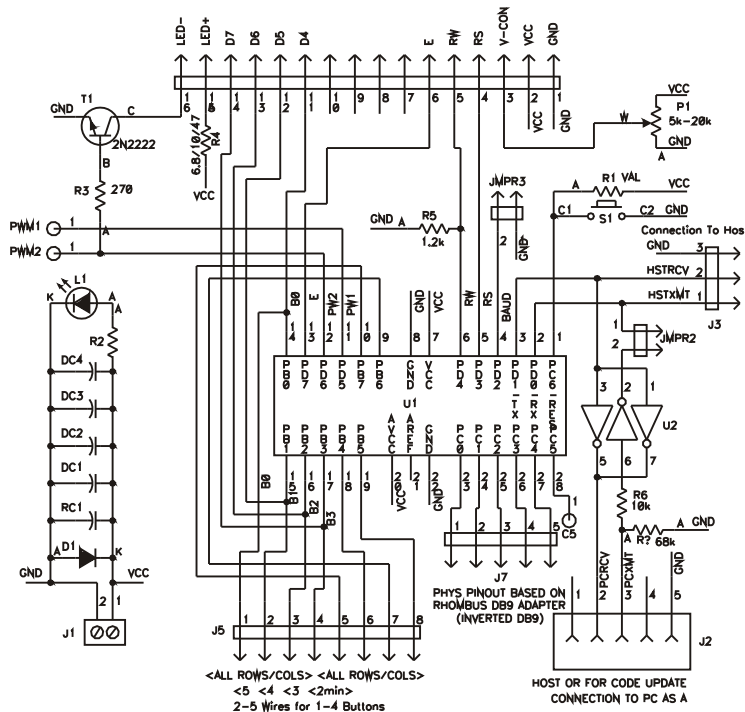
- 1 Header Male/Female 16 Posn J4
- 2 Phillips 4-40 Screws 3/4" Long
- 2 4-40 Nuts 3/16" Washer face
- 2 Nylon Spacers 7/16" Long
- 4 Nylon Washers

When correctly assembled, both faces of each PCB will be in contact with Nylon washers/spacers. The MCU must not be installed in the socket whilst soldering J4.

Initially the nuts should only be finger tight thereby allowing movement to achieve perfect alignment - view from more than one angle before tacking the end contacts on both sides. Recheck before soldering all remaining contacts.

## Final Stage:

- Add the wiring for the Host serial link - the PCB labels 'R-X' are with respect to this MCU. Therefore R is to Receive from the Host's Xmt pin and vice-versa for the MCU's X pin. The Host signals must be at 5v TTL levels and Idle at 5v (True)
- Add the 5v supply wiring
- Set the pot to its midpoint
- Remove the blue Shunt if installed (the 2nd Jumper pins in the photo are incorrect)
- Install the MCU (pin#1 towards blue Pot)
- Turn on the 5v and display the already loaded startup screen
- The 'RdSetup' example code will then establish the communication and verify internal settings
- The 3220 Manual has far more details



MINI 3220 PCB WITH KEYPAD, I/O CONNECTORS & 232 INVERSION