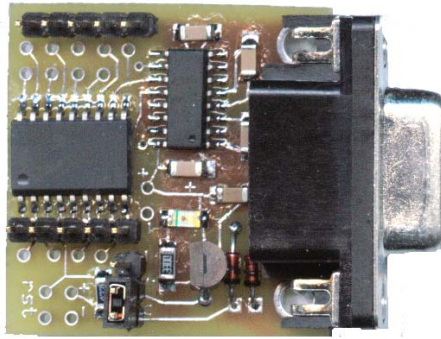


A232P88 RS232 w/PIC16F88 controller

Rev 1.0



Picture may vary from actual board due to revision changes

A compact controller board which includes an RS232 chip and standard DB9 serial connector. The board can be powered externally (3 to 6vdc) or it can be configured via a jumper to use the power available from the PC on the handshake lines. Ideal for developing small sensor projects that can be connected directly to a PC. It has an on-board voltage regulator and protection diodes for the PC handshake lines.

Parts List

- 5 - 0.1uf SMD capacitor
- 1 - 1uf SMD capacitor
- 1 - 330 ohm SMD resistor
- 1 - 4.7k SMD resistor
- 2 - 1N4148 (or equiv) diodes
- 1 - SMD LED
- 1 - Max3232 (or equiv) IC
- 1 - PIC16F88 SOIC
- 1 - LM3480 5v regulator
- 1 - DB9F connector
- 1 - 3 pin header w/jumper
- 1 - 5 pin header
- 1 - Printed circuit board

Assembly of this kit requires that the user has the necessary tools and skills to work with SMD (surface mount device) components. If you are not comfortable with soldering miniature parts, then please seek assistance from someone who is capable to do so. Small mistakes can cause many frustrating hours of grief in trouble shooting!

Minimum tools required:

A fine point low power (25w max) soldering iron and thin solder. Ideally, 0.022" diameter (or less) silver-bearing non-corrosive rosin core should be used. In addition, narrow needle nose pliers, diagonal cutting pliers, good quality tweezers, large magnifying glass, volt-ohm meter, and a 7 to 12 vdc power supply.

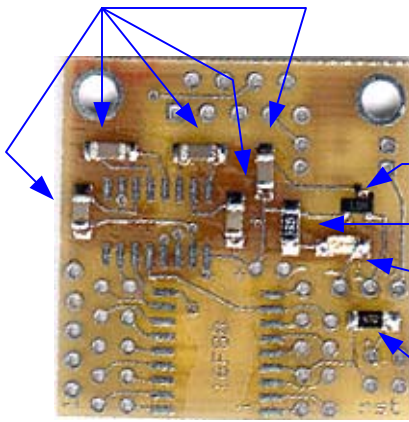
Make sure that you work in a clean well lighted area and have adequate desk area. If you have carpeting then please be aware of static discharge as well as accidentally losing tiny components in the carpets fiber. SMD capacitors and resistors are very tiny and can quickly become lost in the carpeting.

Disclaimer and Terms of Agreement

As with any kit, only the individual parts supplied are guaranteed against defects and not the user assembled unit. All kit parts are purchased from reputable sources such as Digikey Inc, Allied Electronics and Mouser Inc, however, should a kit part be ascertained to be defective it will be replaced at no charge within 30 (thirty) days of the purchase date. Beyond that, COMPSys Workbench and / or the COMPSys developer(s) assume no liability and WILL NOT be held liable nor be held responsible wholly or in part for any damages caused by the construction of and / or use of their products sold .

Assembly (rev D board)

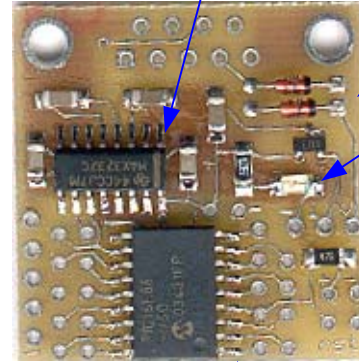
Five 0.1uf capacitors



LM3480 regulator
330 ohm resistor
LED
Note: Banded end faces edge of the pcb
4.7k resistor

Max3232 Pin 1
Banded end

Two 1N4148 diodes
Note: Banded end faces edge of the pcb

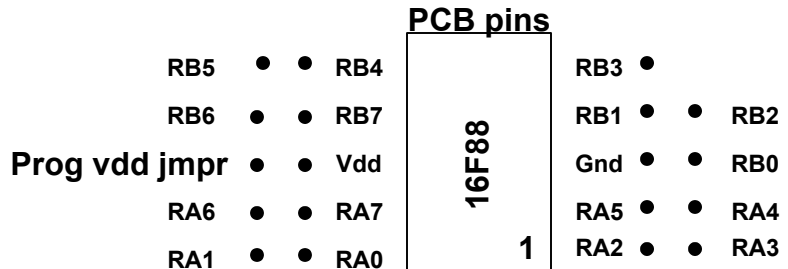
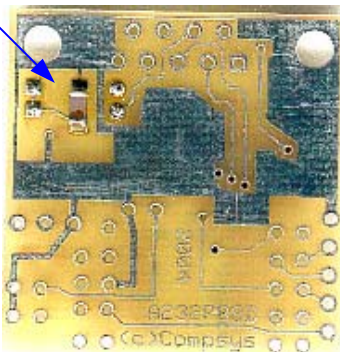


LED banded end

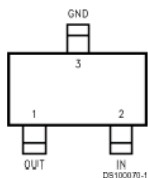
Pic16F88 Pin 1
(end with a small dot/dimple)

1. Mount and solder the 0.1uf capacitors, resistor and LED on the top side
The dark green band (cathode) of the LED faces the pcb's edge
2. Carefully orient and solder the Max3232 and PIC16F88 in place
Note where the PIN 1 positions are of the PIC and Max3232
3. Mount the LM3480 regulator (number faces up) and the 2 1N4148 diodes
The dark band (cathode) of the diodes face the pcb's edge
4. Solder the 1uf capacitor on the *back side* of the pcb as shown below.
5. Solder the RS232 DB9F connector and any pin headers (see next page)

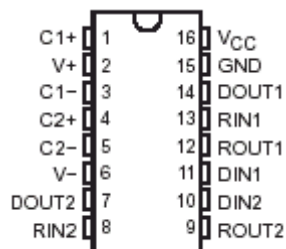
1uf capacitor



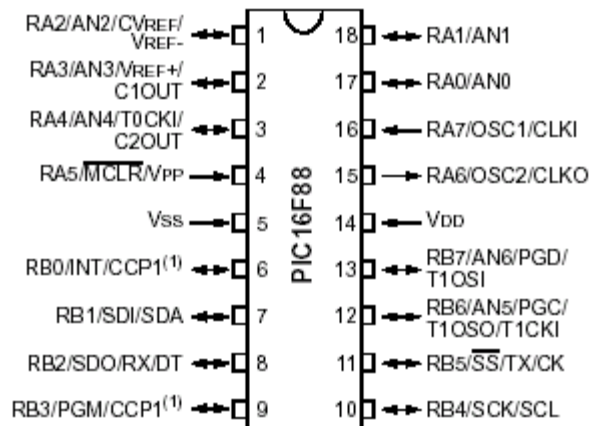
LM3480 (5v or 3.3v reg)



Max3232 (or equiv)



PIC16F88



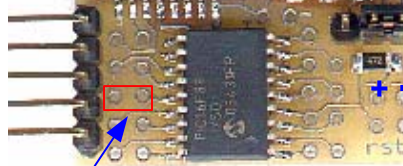
Power supply options

DB9F RS232 connector

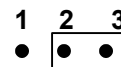
PIC 5 pin programming header

*Normally the PIC will need to be powered by its own power source. If the programmer is to be used to supply power, then a link or jumper needs to be placed on the two points next to Pin 4 (shown in red box)

- 1 - Gnd
- 2 - PGC (RB6)
- 3 - PGD (RB7)
- 4 - n/c*
- 5 - Vpp (RA5)



Power supply selector jumper



- 1 Gnd
- 2 V+ in to regulator
- 3 Power from RS232

To apply external power, remove the jumper cap from pins 2 and 3. Then apply external Vdc (6-9vdc) to pin 2

Place jumper cap on pins 2 and 3 to derive power from the PC's serial line.
NOTE: Power is only supplied when a terminal application has "opened" the com port.

DO NOT REVERSE POLARITY

Example shown using the Sensiron SHT11 temp/humidity device connected to the 4 lead wire. Results can be seen in a terminal window.

