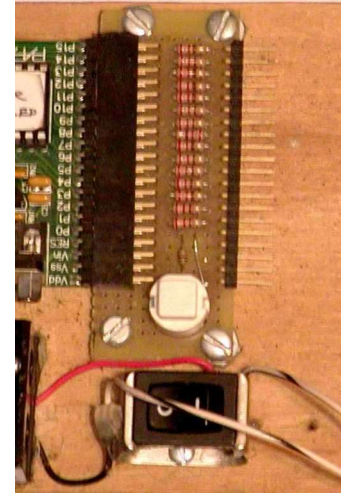
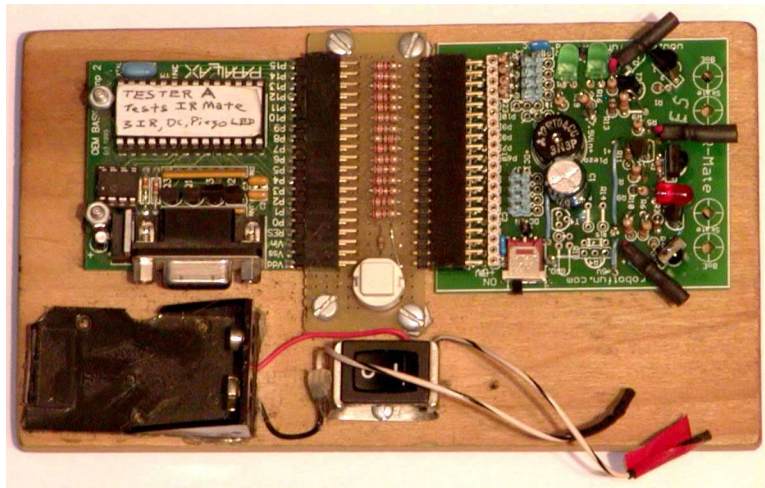
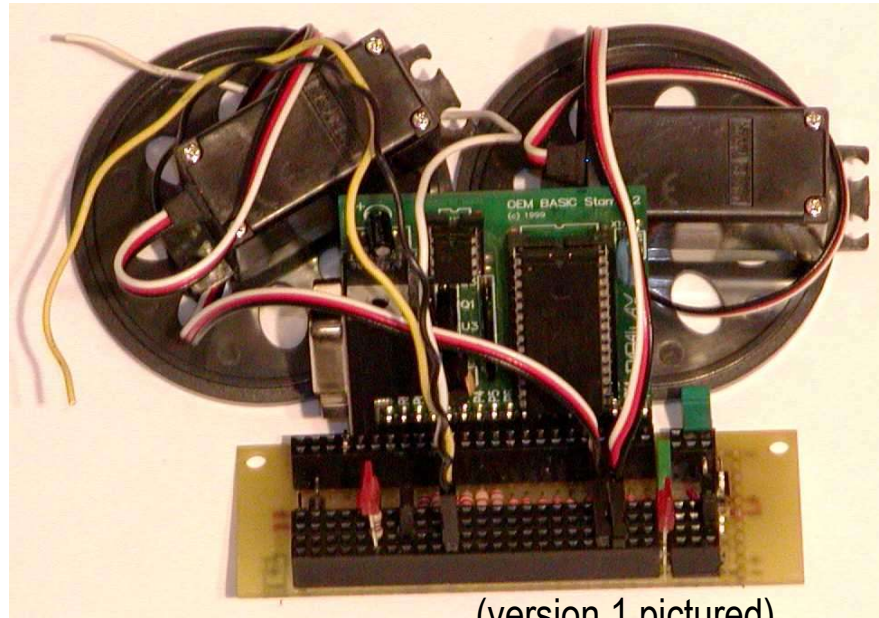


BS2OEM I/O Board

Russ Ferguson
Prototype

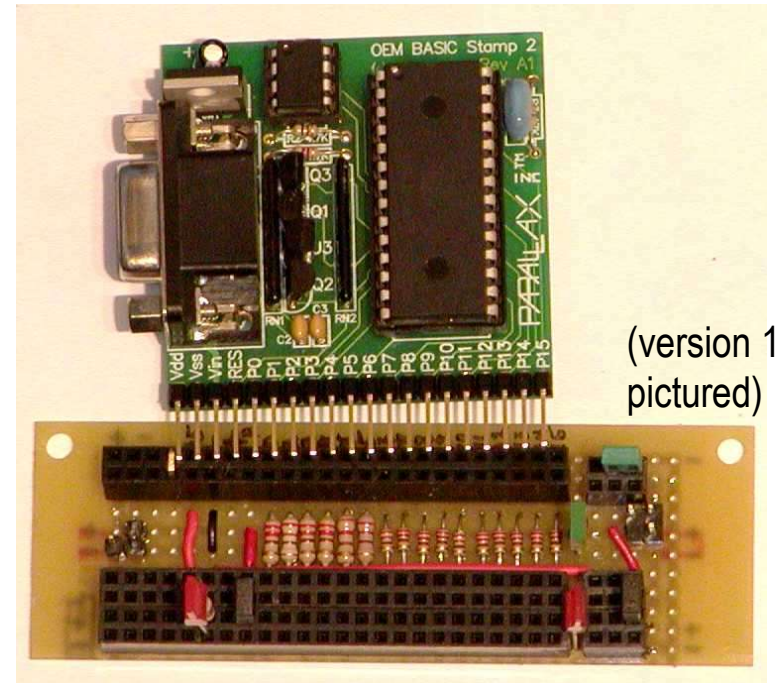
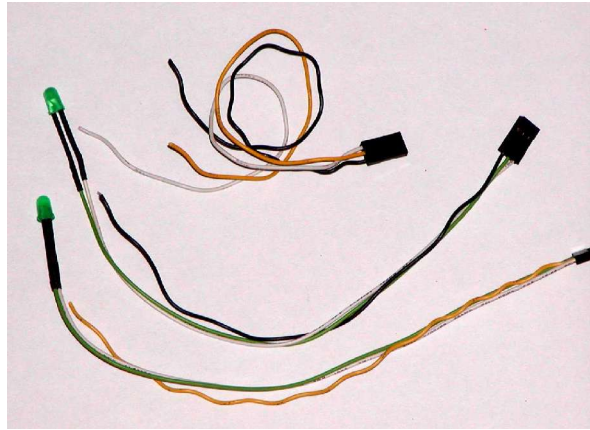


- A test board for a product called the “IRMate” provided the initial idea of BS2EOM I/O adapter board.

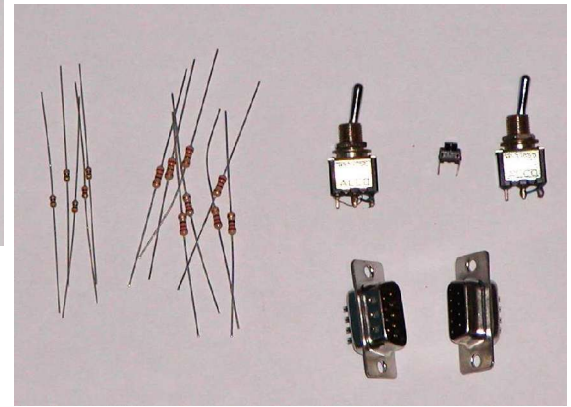
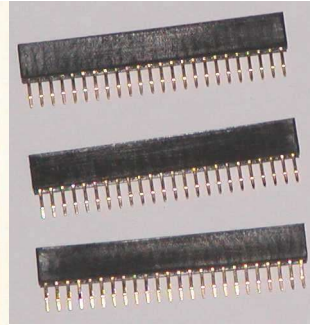
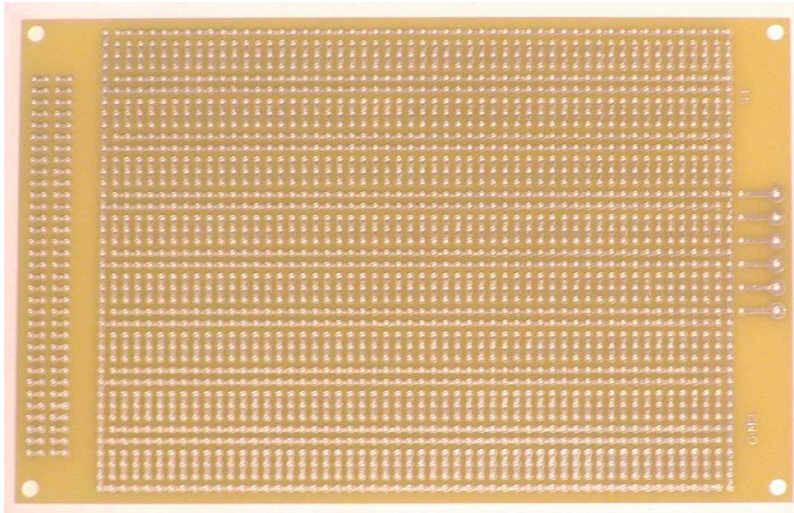


(version 1 pictured)

- The design is to include:
 - I/O features of the Homework Board (like current limiting resistors)
 - Connectors for Power switch, power indicators, and Reset switch that will be located somewhere else
 - Gnd, +, and Stamp Pin connections that are each available through the use of one 3 pin connector
 - Uses a Circuit Board with an existing pattern, and requiring minimal modifications to the traces.

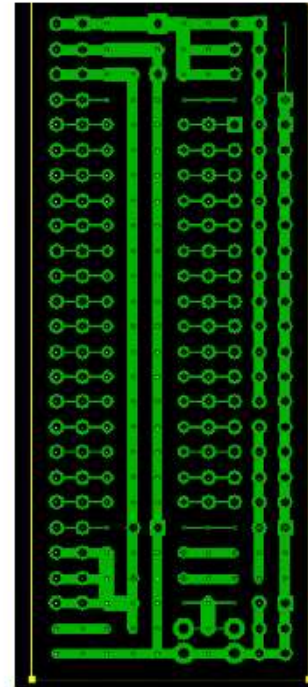
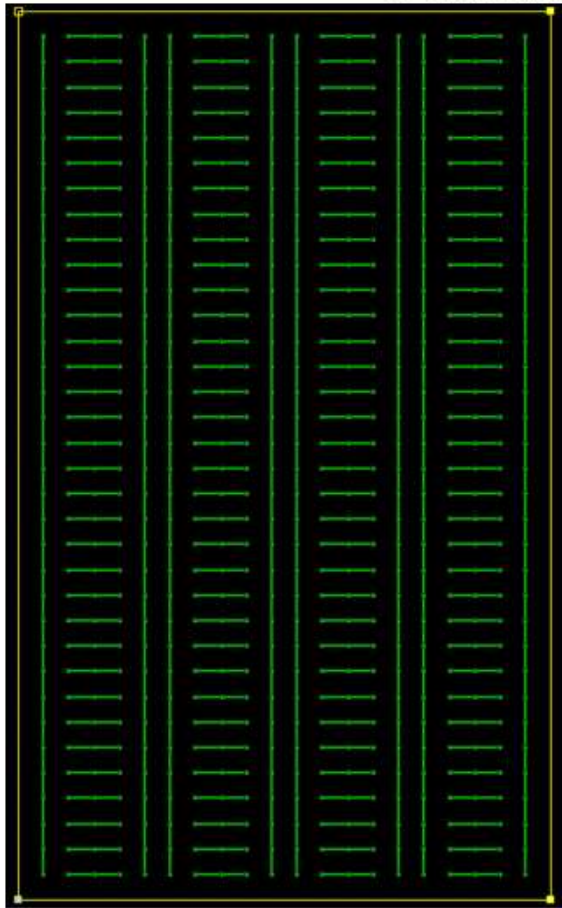


- I/O devices will be developed on separate boards and be connected to the main I/O board using cables salvaged from old PC LED cables. A third wire will have to be added to the connector. The three wires in the connector will connect to Gnd, +, and Stamp pin.



- The PCB Board will come with a trace design already on it.
 - Two rows will provide a buss for Gnd and +
 - Two rows will provide a connection to the Stamp pins.
- Three female ribbon connectors will be laid out on the PCB Board to provide a socket for the BS20EM, and sockets for the 3 pin connectors.

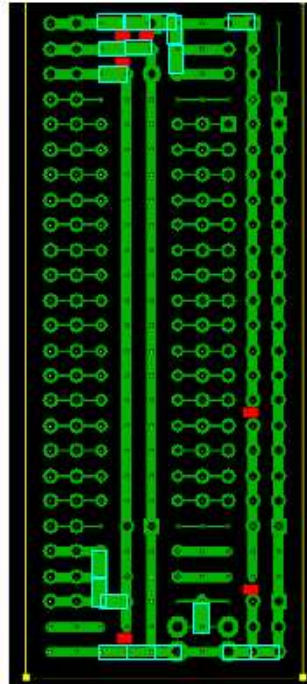
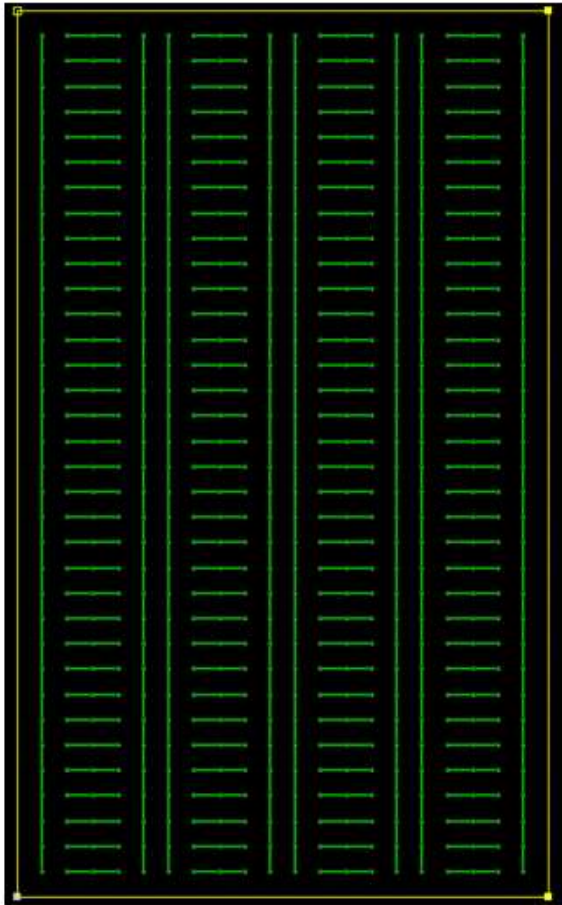
Version 2



(View from
bottom of
board)

- The existing PC Board pattern is on the left
- The pattern on the right is what will be used.

Version 2

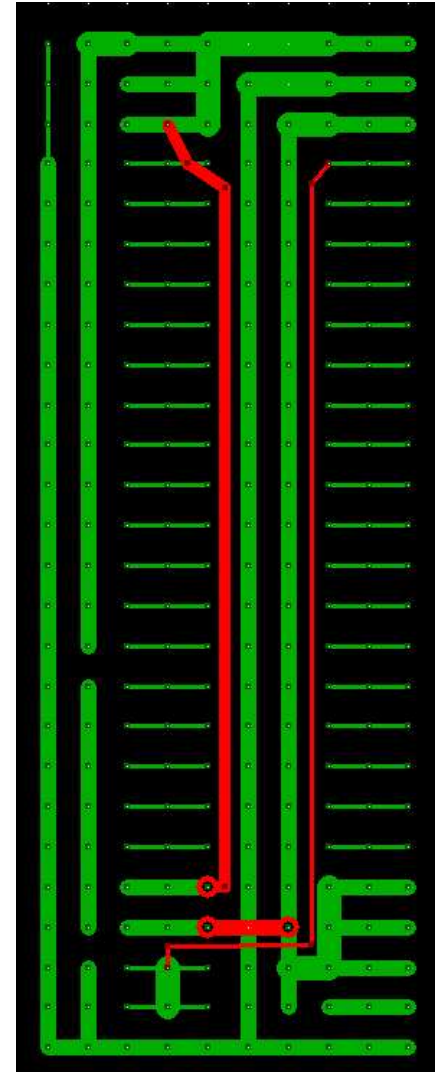


RED lines highlight the traces that are to be cut.

BLUE rectangles highlight the traces that are to be jumpered.

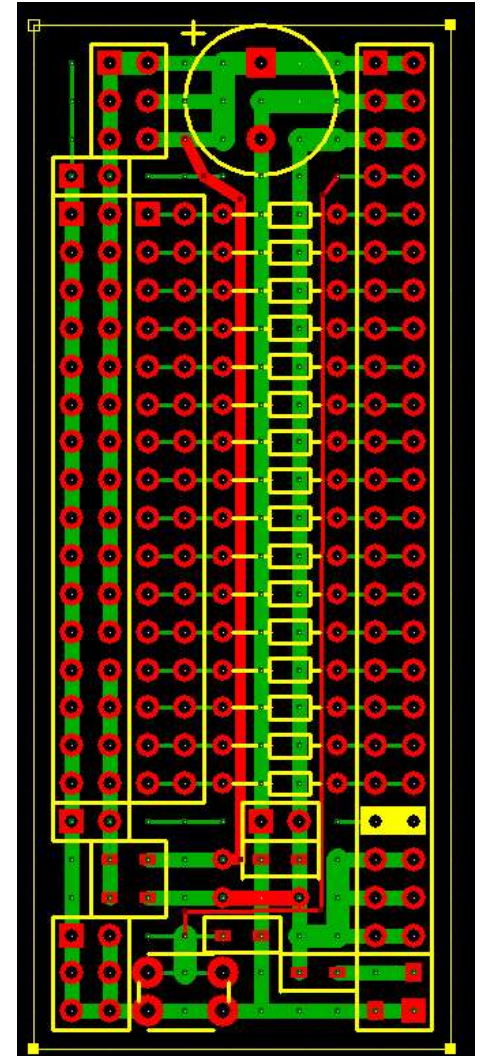
Version 2

- Wires in red will be added to the top side of the board.



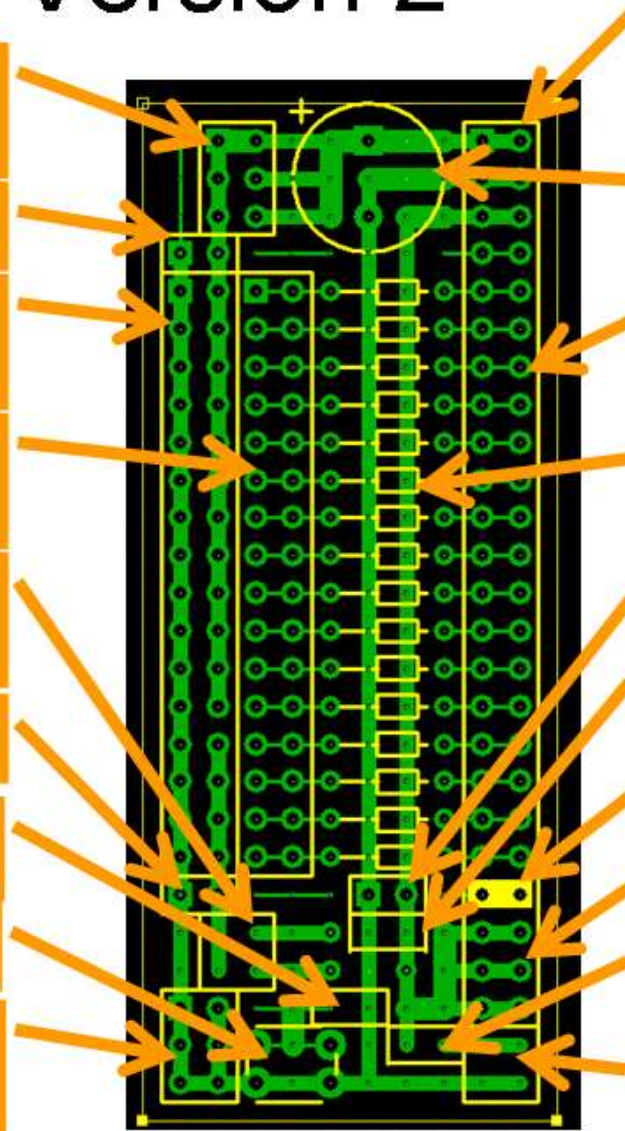
Version 2

- View of top of board with parts and wires.



Version 2

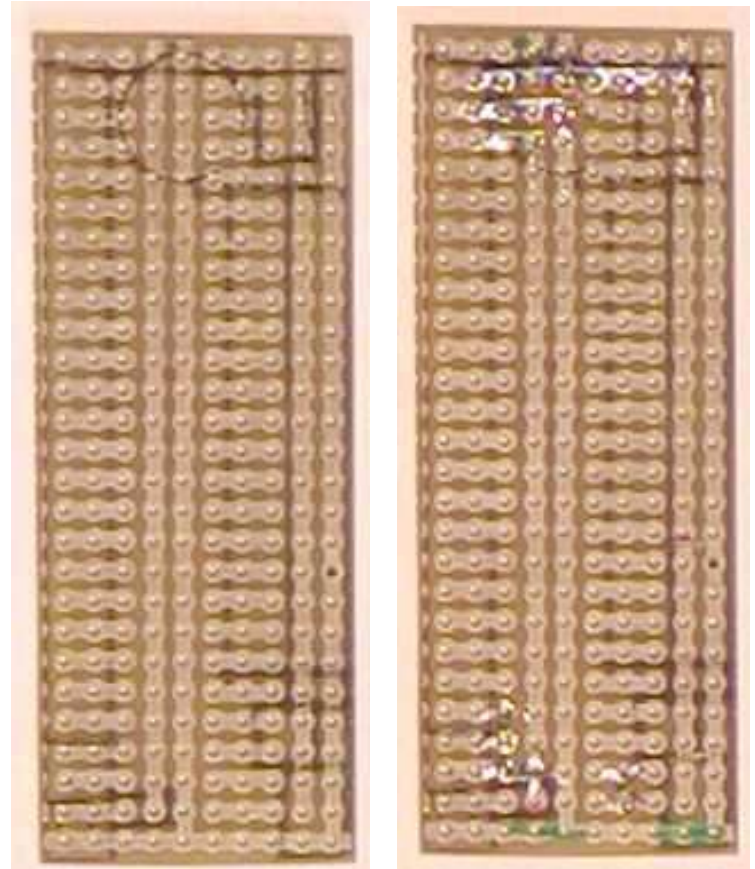
- 48 pin female connector (2 of 3) cut down to 6 pins - VDD
- Indicator LED w/resistor
- 48 pin female connector (2 of 3) cut down to 32 pins
- 48 pin female connector (3 of 3) cut down to 32 pins
- 4 male pins for servo Vin or Vdd selection.
- Indicator LED w/resistor
- 2 male pins for external RESET switch
- Reset switch
- 48 pin female connector (3 of 3) cut down to 6 pins - VSS



- BS2OEM will go here
- 1000mf 10v Filter Cap
- 48 pin female connector (1 of 3)
- 220 ohm ¼ watt resistors (16)
- LED PWR Ind w/resistor
- 2 male pins for ext LED PWR
- Plugged connectors
- 6 pins - Vin
- 2 male pins for external POWER switch
- 3 or 4 male pins for MAIN POWER

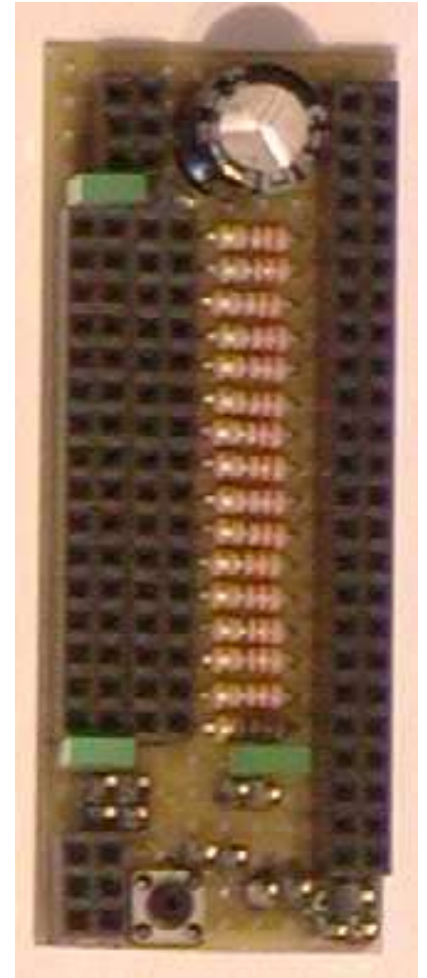
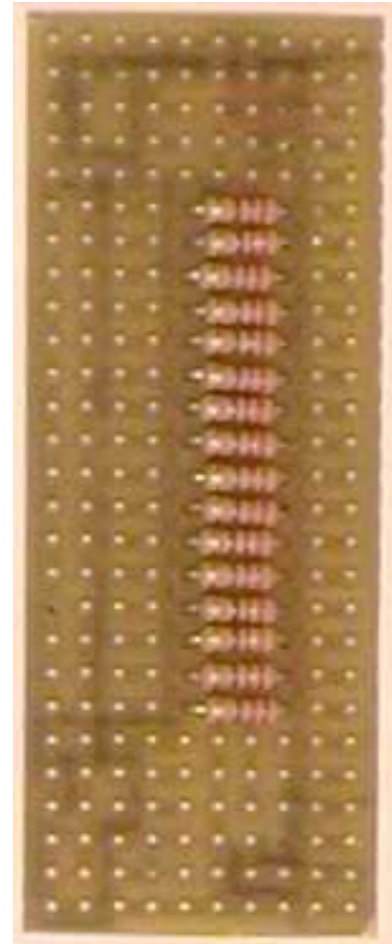
Construction of Version 2

- Draw the trace cuts and trace jumps on the circuit board
- Use a knife to cut traces.
- Use solder and buss wire to jump



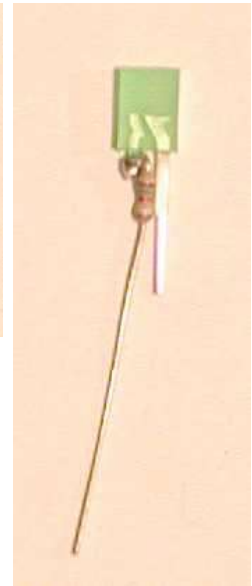
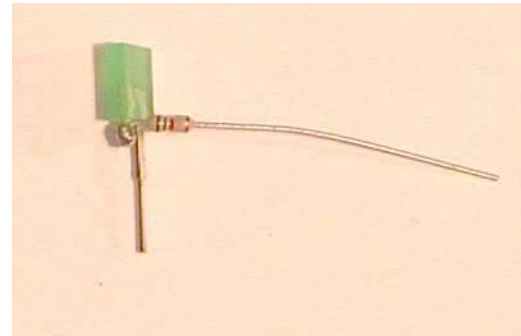
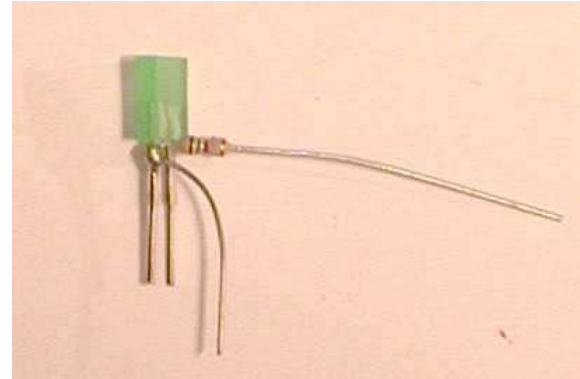
Construction of Version 2

- Install the components
- The LEDs are rectangular green and came with the PC LED indicator cables. The LED's do not have load resistors.



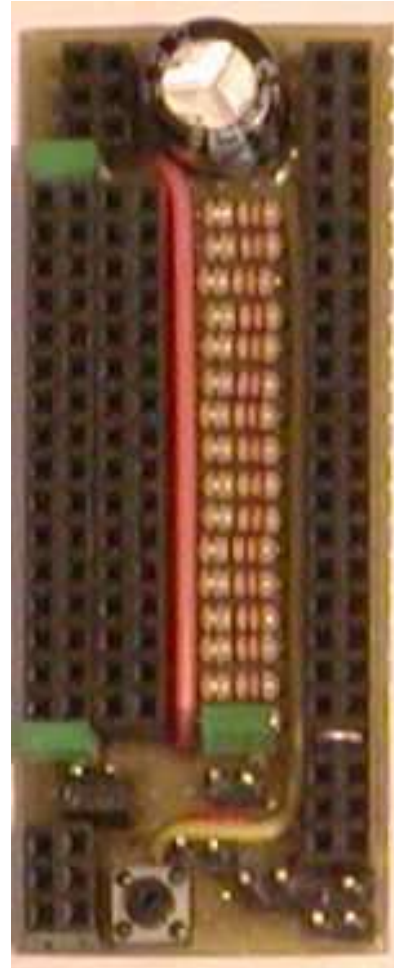
Construction of Version 2

- Wrap a lead of a 1/8 watt resistor around a leg of the LED.
- Solder the connection
- Clip the excess wire and bend the resistor to be parallel to the remaining LED leg.

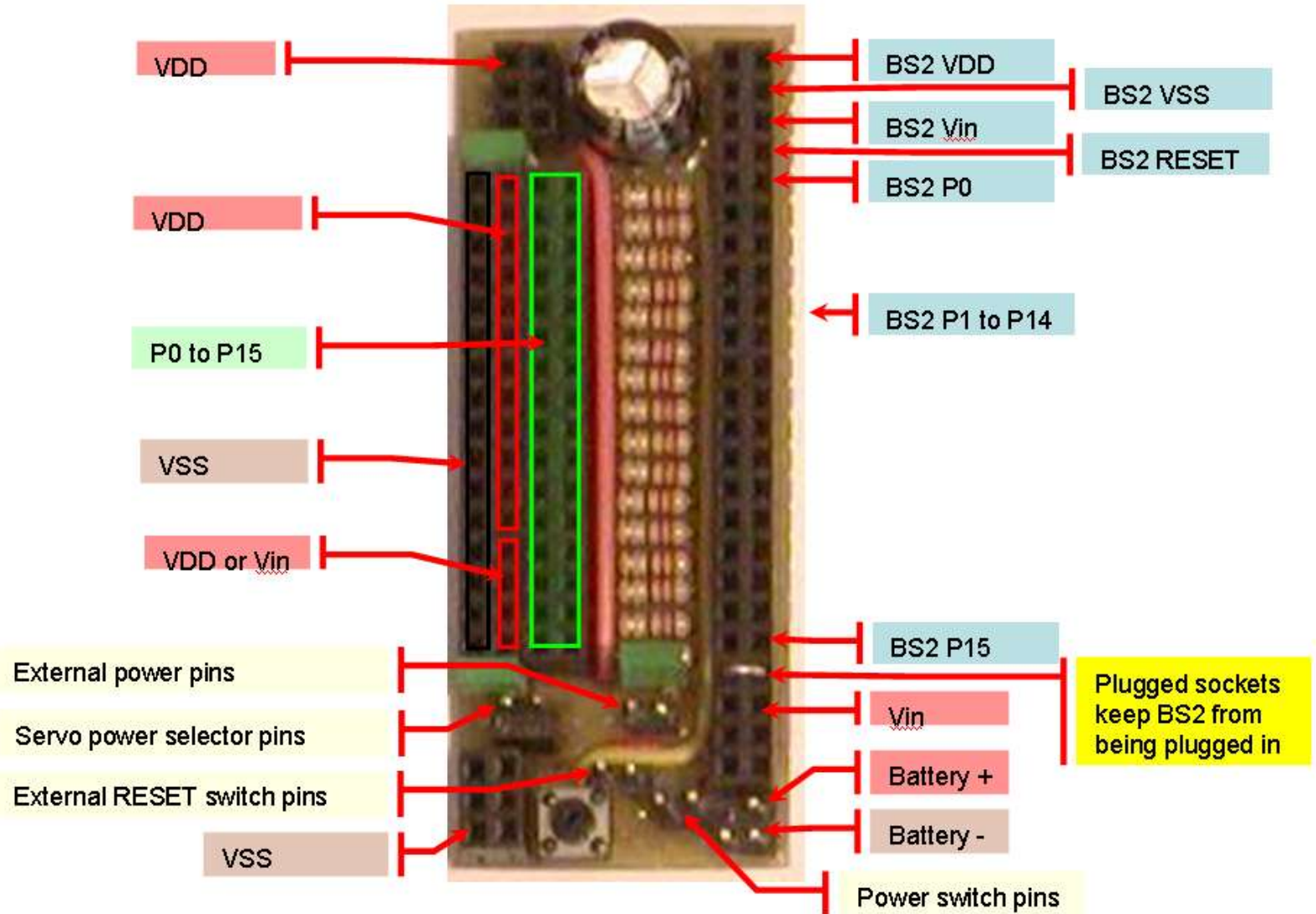


Construction of Version 2

- Install the jumper wires. They are yellow, pink, and red in the picture.
- Use a meter to test for shorts between all VDD, VSS, Vin connections.

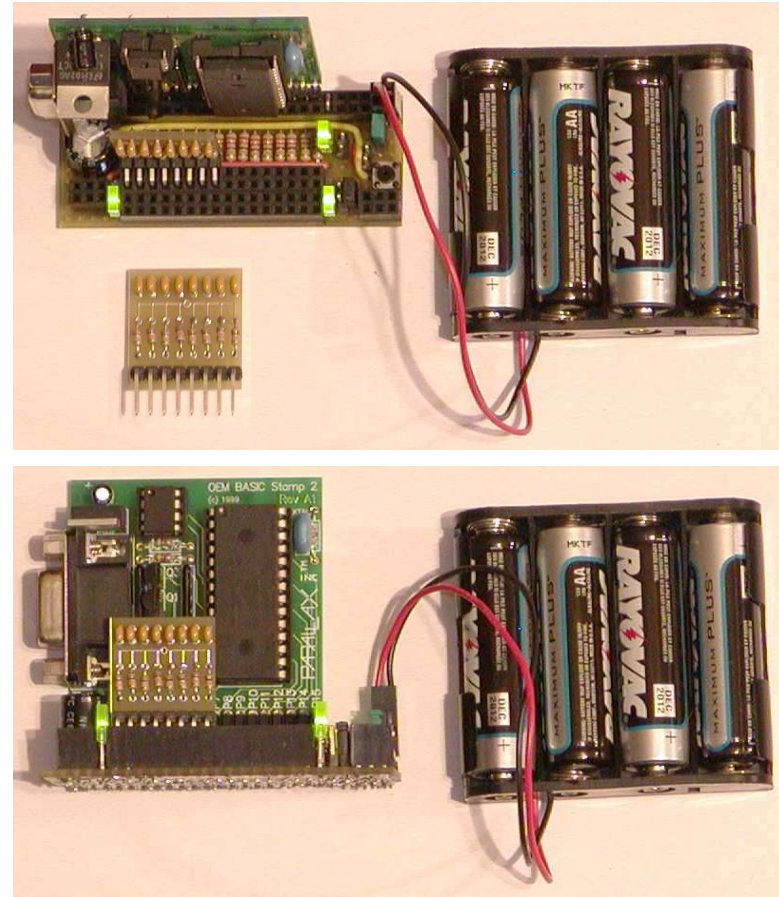


Construction of Version 2



Construction of Version 2

- Put a jumper on the power switch pins
- Put a jumper on the servo power selector pins
- Run a BS2 stamp test program.
- Stamp Tester is from Sid at NEWZED@aol.com



Construction of Version 2

- This project will probably be revised again.
- If you see any ways to improve it, please post or send a private note

A robot platform possibility

