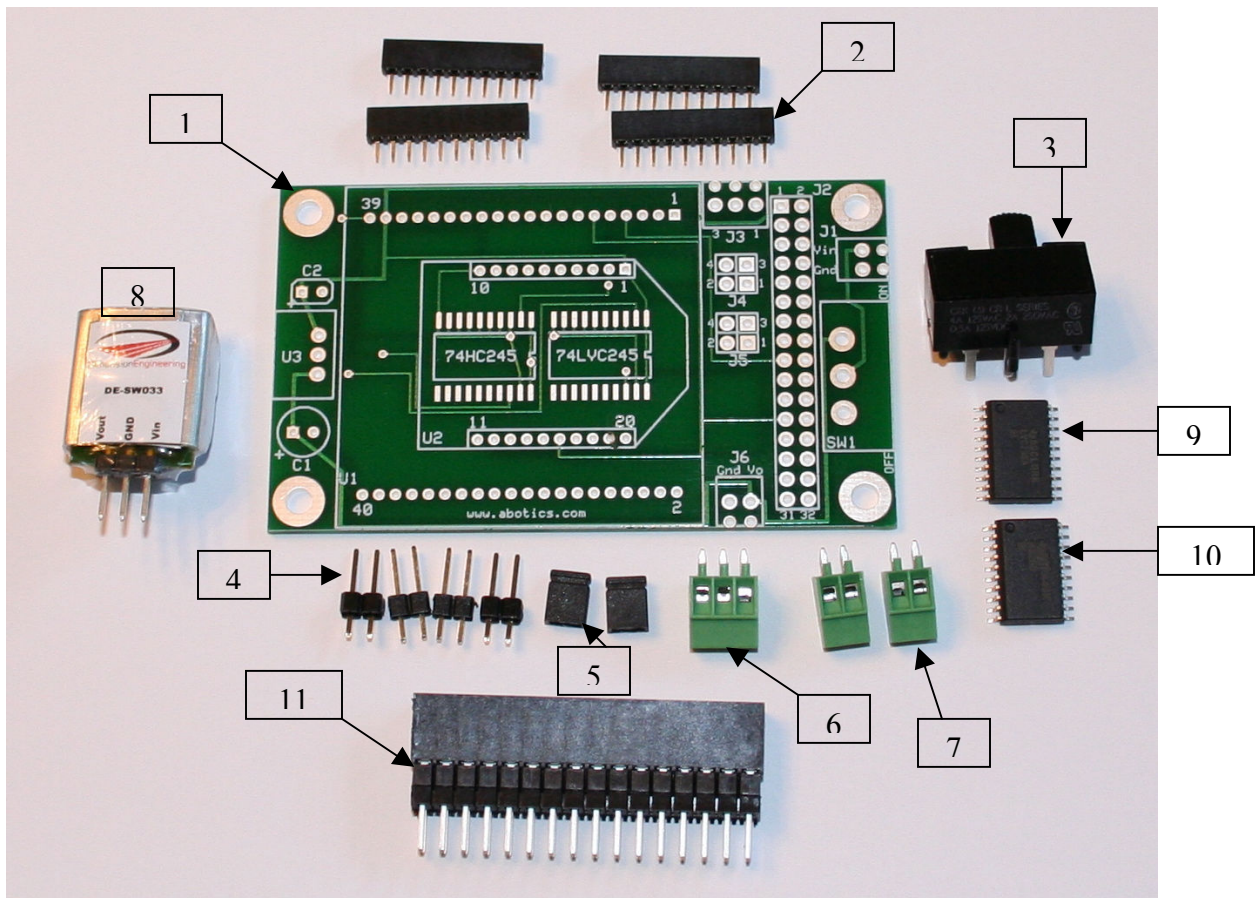


OPEN-ROBOT MatchPort PCB Assembly

By Abe Howell's Robotics

Kit Contents:

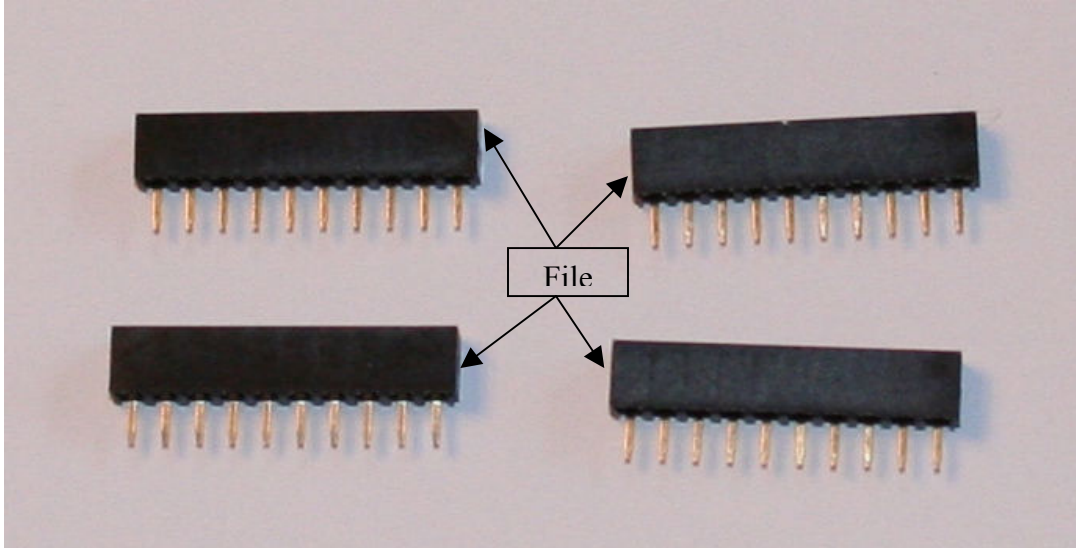
1. (1) – OPEN-ROBOT MatchPort PCB
2. (4) – 2mm pitch MatchPort sockets
3. (1) – SPST switch
4. (4) – 0.1" pitch 2-position non-polarized headers
5. (2) – 0.1" pitch jumpers
6. (1) – 0.1" pitch 3-position terminal
7. (2) – 0.1" pitch 2-position terminal
8. (1) – DE-SW033 3.3volt switching regulator
9. (1) – 74LVC245 octal buffer
10. (1) – 74HC245 octal buffer
11. (1) – 32-position Samtec socket for connecting SRV1 Camera Board



Figure#1. Kit Contents.

Preparing the 0.05" pitch MatchPort sockets:

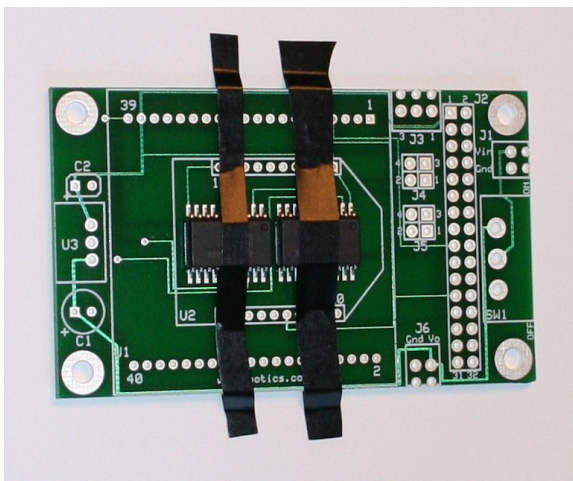
You will need to slightly file one end on each of the 2mm pitch MatchPort sockets. Be careful not to file too much of the plastic otherwise the metal pin will be exposed.



Figure#2. File ends of 2mm MatchPort sockets.

Solder 74LVC245 and 74HC245 Octal Buffer:

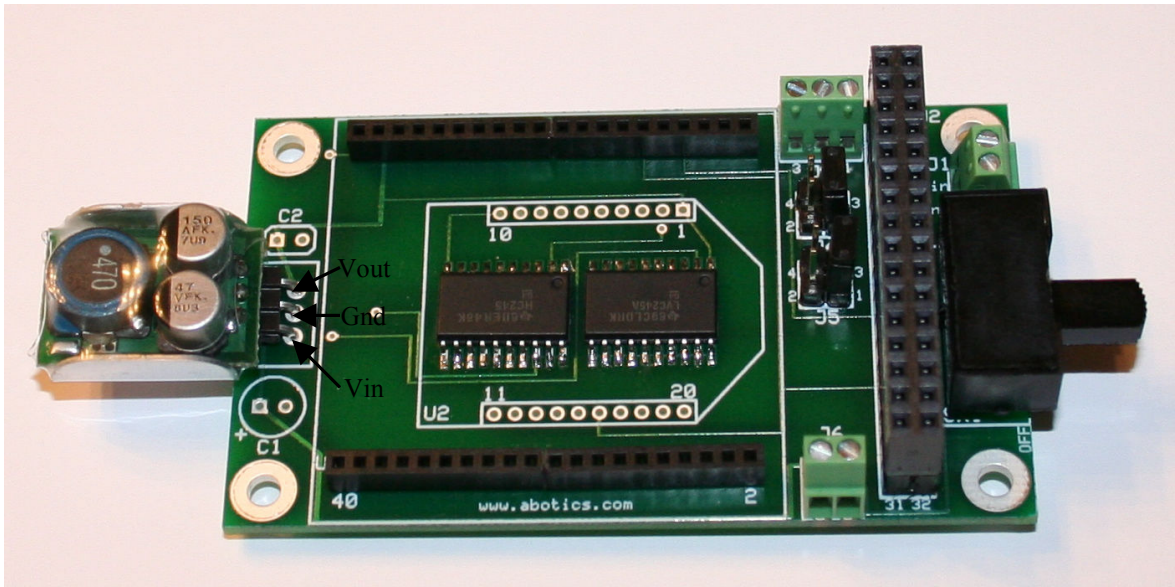
The 74LVC245 and 74HC245 chips are fine pitch SOIC chips and are not as easy to solder as say a 0.1" PDIP. However, there is something that will make this a lot easier. Simply cut two small pieces of tape and then use these to secure each chip to the PCB and also to your work surface. Be sure to orient the chips as shown below in figure#3. Now you can easily solder using 0.015" diameter solder (RadioShack#64-035) and a fine tip soldering iron. Don't worry if you accidentally solder-bridge two pins during the solder process because in the end you can use a piece of desoldering braid (RadioShack#64-2090) to remove the excess solder.



Figure#3. Solder 74LVC245 and 74HC245 Octal Buffers.

Solder Remaining Components:

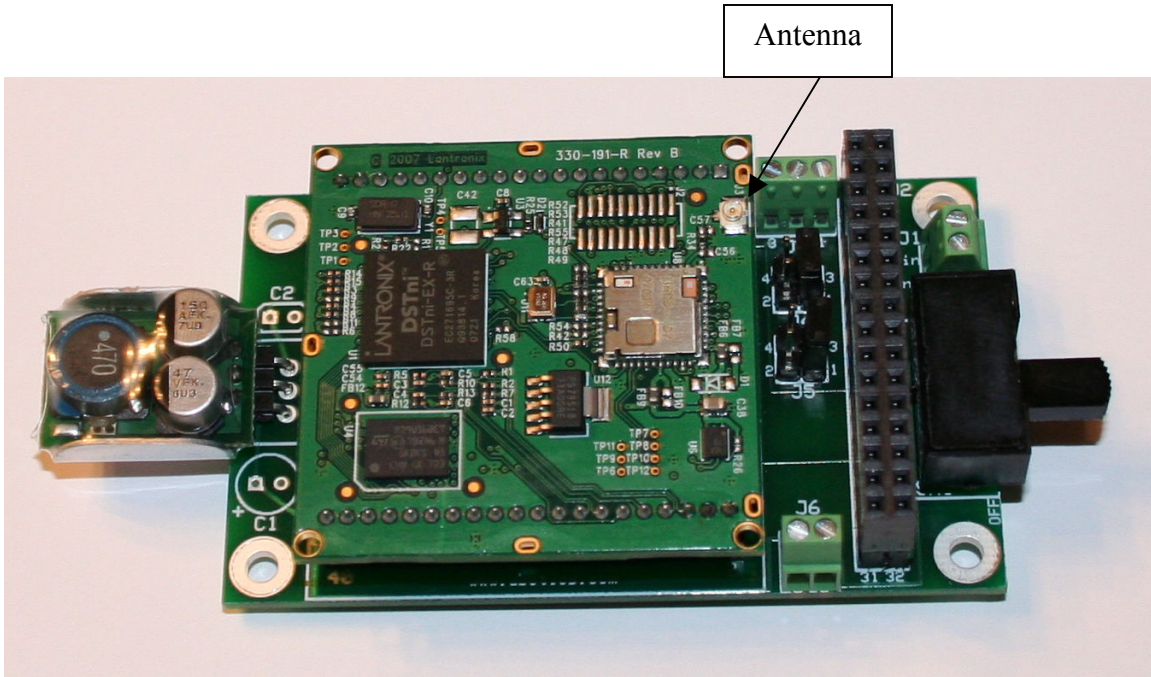
Solder the remaining components according figure#4 below. You will need to bend the DE-SW033 pins 90 degrees so that it won't interfere with the SRV1 Camera Board. Also be sure to add the 0.1" jumpers to J4 and J5. If you are adding the SRV1 Camera Board then attach the jumpers to pins 1&3 on both J4 and J5. Otherwise attach the jumpers to pins 2&4 on both J4 and J5. Figure#4 shows the jumpers attached to pins 1&3 and therefore is ready for the SRV1 Camera Board. The RECOM R-783.3-1.0 regulator can be used. However, using the RECOM requires adding a 10uF capacitor to C1 and a 0.1uF capacitor to C2.



Figure#4. Solder remaining components.

Install MatchPort b/g Module:

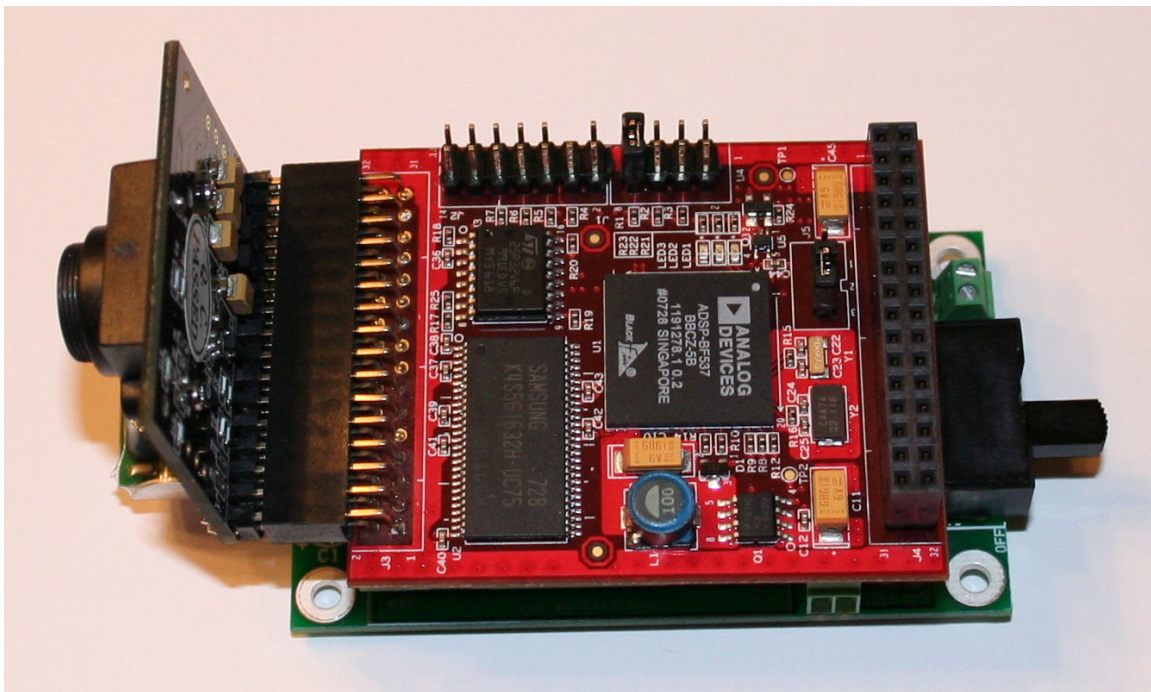
Install the MatchPort b/g module by orientating the antenna clip towards the 32-pin SRV1 Camera Board socket. Be sure to properly align the pins before firmly pressing into place. Please refer to figure#5.



Figure#5. Fully assembled MatchPort PCB with MatchPort b/g installed.

Install SRV1 Camera Board:

If you have the SRV1 Camera Board you can install by properly aligning the 32-pins on the SRV1 Camera Board with the 32-pin socket on the MatchPort PCB. Refer to figure#6.



Figure#6. Fully assembled MatchPort PCB with MatchPort b/g and SRV1 Camera installed.

MatchPort PCB Connections:

There are only three different connection points on the MatchPort PCB, J1, J3, and J6. Battery power in the form of a 6-AA pack is connected to the J1 2-position terminal block using the Vin and Gnd connections. Be sure to observe proper polarity, otherwise you can damage the board.

MatchPort PCB	Purpose
J1, Vin pin	Positive Battery Pack Wire
J1, Gnd pin	Ground Batter Pack Wire

Table#1. MatchPort J1 Terminal Block Connections.

OPEN-ROBOT's +5volt level PIC18F4520 serial port connects to the J3 3-position terminal block. You must supply +5 volts from OPEN-ROBOT's PIC18F4520 board to pin#1 on the J3 terminal. Pin#3 (PIC TX) from the J12 connector on OPEN-ROBOT's PIC18F4520 board connects to pin#2 of the J3 terminal on the MatchPort PCB. Finally, Pin#4 (PIC RX) from the J12 connector on OPEN-ROBOT's PIC18F4520 board connects to pin#3 of the J3 terminal on the MatchPort PCB.

OPEN-ROBOT PIC18F4520 Board	MatchPort PCB
J6, +5 volts header	J3, pin#1
J12, pin#3	J3, pin#2
J12, pin#4	J3, pin#3

Table#2. MatchPort J3 Terminal Block Connections.

The MatchPort PCB supplies OPEN-ROBOT with On/Off switched battery power from the 6-AA battery pack using the J6 2-position terminal block. The connections are labeled Gnd and Vo. Vo corresponds to battery voltage out.

MatchPort PCB	OPEN-ROBOT PIC18F4520 Board
J6, Vo pin	J1, pin#1
J6, Gnd pin	J1, pin#2

Table#3. MatchPort J6 Terminal Block Connections.

Please contact abe@abotics.com if you have any questions or concerns.