# Assembling the Wee Little Talker

1) Install the 200K Ohm (Red, Black, Yellow) Resistors in R1.

2) Install the two 22K Ohm (Red, Red, Orange) Resistors in R2 and R3.

3) Install the 470 Ohm (Yellow, Violet, Brown) Resistors in R4.

4) Install the 150 Ohm (Brown, Green, Brown) Resistors in R5.

5) Install the 330 Ohm (Orange, Orange, Brown) Resistors in R6.

6) Install the two 68 Ohm (Blue, Grey, Black) Resistors in R7 and R8.

7) Install the two 4.7K Ohm (Yellow, Violet, Red) Resistors in R9 and R10.

8) Install the Five 10K Ohm (Brown, Black, Orange) Resistors in R11, R12, R13, R14 and R15.

Note that all IC sockets have a small notch on one side. The notched side always goes on the left side when installing the socket. This is also marked on the PC board too. This nock will help in installing the IC parts later.

When soldering multi-pin parts like Sockets, check that all pins are straight and fit through the holes on the PC board.

9) Install the 8-pin IC sockets for IC1. (Do NOT install the MSGEQ7 at this time.)

10) Install the 20-Pin IC Socket for IC2. (Do NOT install the Picaxe 20X2 at this time.)

11) Install LED1 (Red) and LED2 (Green). The longer lead goes in the right side (+) hole.

12) Install the 33 pf (33) C1 Disc Capacitor. It's to the left and below of IC1.

13) Install the six 0.1 uf (104) Disc Capacitors in C2, C3, C4, C5, C6 and C7.

14) Install Jack 2 and Jack 3 1/8-inch Audio Jacks.

15) Install the MCP1700-3302E, a 3.3 Volt Regulator in IC3. First bend the middle lead away from the flat side of the TO-92 case. (This will help install the middle lead into its hole.) Note the diagram for IC3 on the PC Board and insert matching the regulator flat side matches. Push the regulator down till it about 1/8 of an inch from the PC board. Solder the three pins and cut the extra part of the leads off.

16) Install S1, S2 and S3 push button switches. Push the switch's leads through the holes in the board till they are flat on board and level. Solder just one pin. Do not install the three color button caps at this time.

17) First, install JP1 (15-pin header) with the short side going into the holes on the PC board. Now, solder just one on the end. After soldering, check the alignment and melt the solder joint should the placement need fixing. Next solder one pin on the other end. As before, verify the is straight up and mounted flush to the PC board. The next step is to solder the other pins.

18) Install 8-pin Header into JP2. Solder only one pin and the alignment and melt the solder joint should the alignment need fixing. Now, solder the other seven pins.

19) Install the two 8 pin female sockets for the DFPlayer Mini. Install the first header and solder one pin. Verify that the header is in flat and straight. This is crucial for the module to plug into these sockets. Now, solder the other 7 pins and do the same for the other socket.

20) Install Jack 1, the DC Power Jack 2.1 mm. Be sure to match the diagram on the PC board. Solder just one pin at first. (It will take more solder then the parts that you installed earlier because the size of the holes.) Verify the power jack is flat on the PC board and matches the diagram. Melt the solder if the power jack needs moving. Now, solder the other two pins on Jack 1.

21) Install C8 (100 UF 25V Capacitor.) Note the positive side of the Capacitor (longer lead) goes to the hole towards the middle of the PC board. That hole also has (+) mark too. Solder and cut off the leads.

22) Install the three color button caps. S1=Red, S2=Green and S3=Blue.

## Power Check.

Before installing the parts in their sockets, a simple power test should be done. Connect up the 5 Volt power adapter to Jack 1. (Center pin of the power connector is positive.)
After applying power, the Green Power LED should light up. If not, please review your work for any bad solder joints or mistakes.
Remove the power and wait for the Green Power Light to go out.

## Final Installation of Components.

When install IC1 and IC2, the pins will be bent outward a bit too far for the socket. Use a pair of needle nose pliers to bend them inward so the pins line up with the holes in the socket. Make sure every pin goes into the socket before pushing them all the way in. Be careful, the pins can easily bend and break should they not go into the socket's holes.
23) Install the MSGEQ7 ASA chip into IC 1 socket.
24) Install the Picaxe 20X2 chip into the IC 2 (20 pin) socket. Be careful plugging in the chip since there many more pin and it's easy to bend or break a pin off. Also, plugging it backwards will destroy it.
25) Install the DFplayer Mini module into the two 8-pin sockets near the top of the PC board.
26) Connect the jumpers on pins 1&2, 5&6,7&8 of the 8 pin header.
Do a final check that all the parts are soldered or plugged into their sockets correctly.

## Final Systems Check

Install the Micro SD-Card with the label side up. It should slide in easily at first, then a spring will cause some resistance. Keep pushing till the card come to a stop.
Once you apply power to the board, the Wee Little Talker board will reset and pulsate the Red Status LED for a few seconds.
The board will run through system diagnostics to verify that the main systems are working correctly.
First up is the DFplayer Mimi audio player. The board will check if it can talk to the module. Should there be a communication error then the Red Status LED will flash about once a second.
The next check is for all the system and menu Vocal files are intact. The Red Status LED will flash fast if there is a problem in the files on the Micro SD-Card.
At this point the board will announce the name of the program and version number via the audio output jack.
The last system check is the MSGEQ7 Audio Spectrum Analyzer chip. The program will play 7 tones to verify the chip can hear them. (You will not hear the 7 tones.) If there is an issue with the MSGEQ7 chip hearing the tones, the board will tell you the chip is bad and flash the Red Status LED.

Please refer to the Wee Little Talker program's user manual for information using the setup menu and general use.