

## N4YG DDS Sidetone Installation

The instructions below apply specifically to the Corsair II. They may be used for other transceivers but with some variation depending on the keying signals available in the transceiver and the audio amplifier interface requirements. In the configuration here, the keying voltage is 0 volts when not keyed and 12 volts when keyed. If you do not have a keying voltage like this, you can either provide additional components to obtain the proper signal. All solid state rigs seem to have a plus voltage at the key terminals which must be pulled low (grounded) to key the rig. This point could be used for keying the DDS sidetone if the firmware load for the code practice version is used. Any DC supply voltage between 8 and 20 volts can be used.

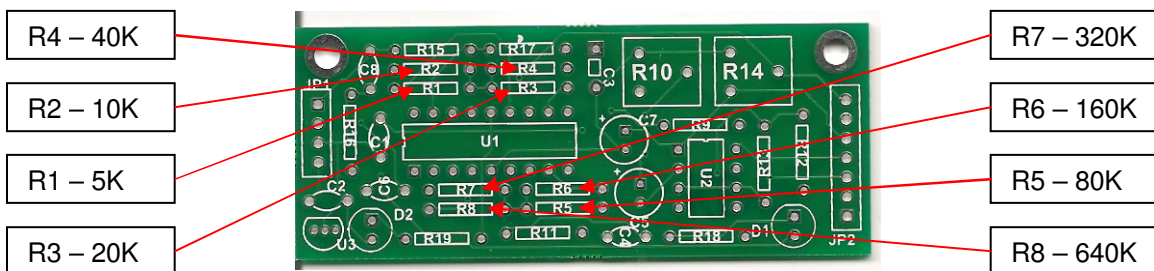
### Corsair II Installation

To install the N4YG DDS Sidetone in the Corsair II, follow the following steps.

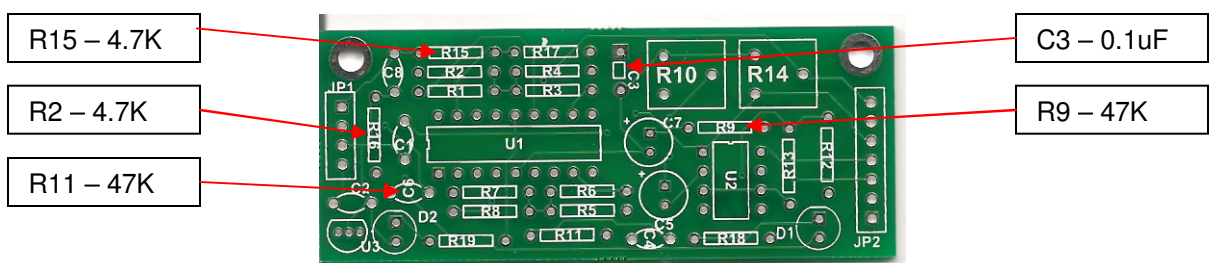
1. Assemble the board.
2. Prepare the Corsair II to receive the DDS Sidetone.
3. Mount the DDS Sidetone board.
4. Connect the Cable to the Corsair II (4 connections).
5. Turn on Corsair II, test and adjust tone and volume.

### PC Board Assembly

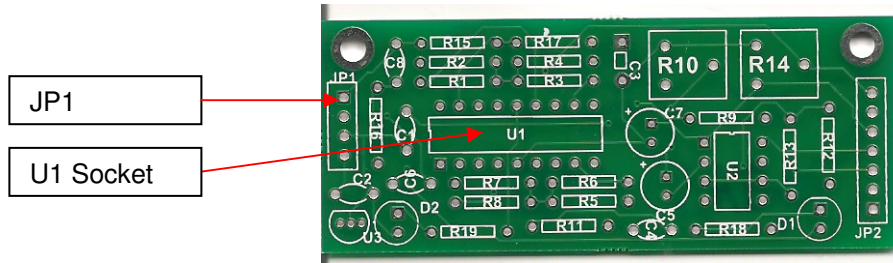
1. Install 8 1% Digital-to-Analog precision ladder resistors, checking the resistance of each before forming the leads and placing them on the board. Be careful to match the resistance value with each position.



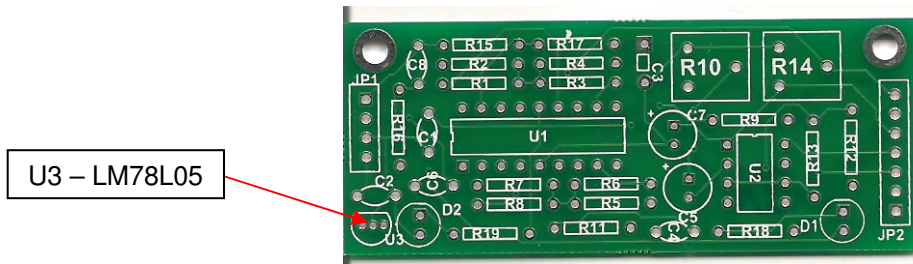
2. Install 4 5% resistors and 1 axial lead capacitor as shown. **Note: R11 IS NOT installed in the position indicated on the board. It is installed in the position indicated for C6 instead.**



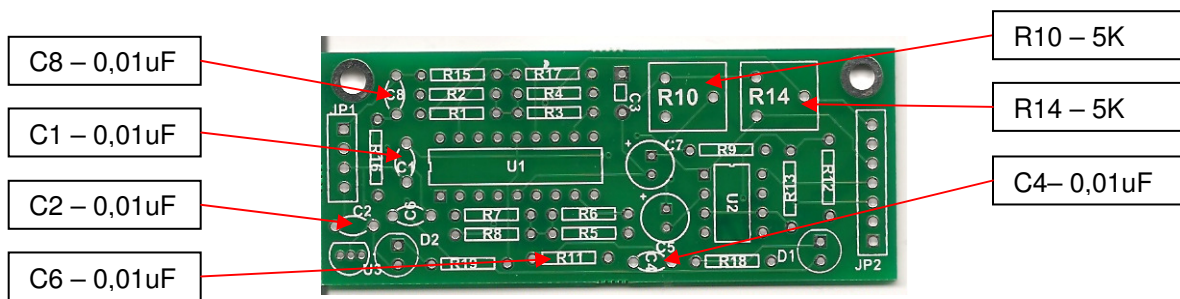
3. Install the right-angle 4-pin header at position JP1 and 18-pin DIP socket at position U1.



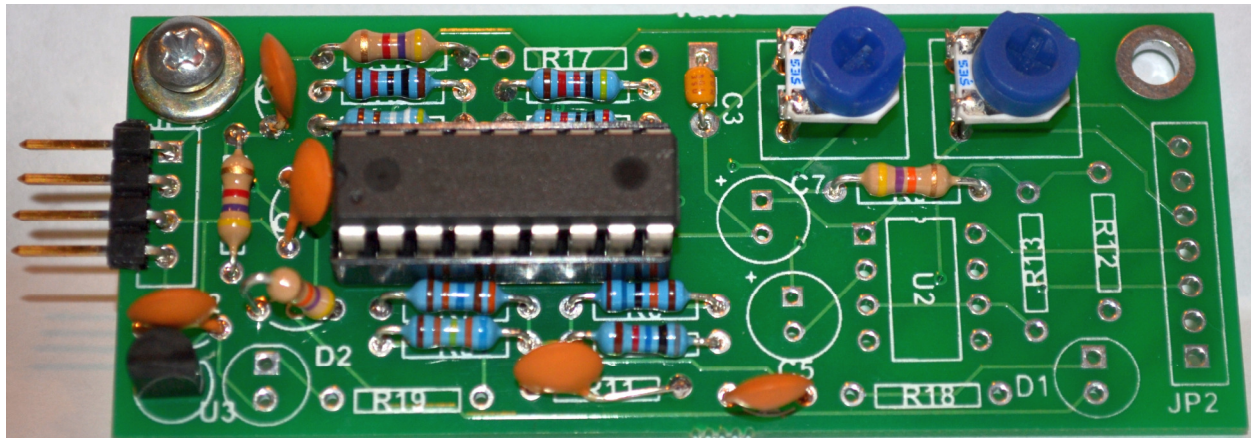
4. Install LM78L05 regulator at position U3. **NOTE: The orientation of this part is not shown correctly as printed on the board. Rotate U3 180 degrees before installing it.**



5. Install 5 0.01 uF ceramic disk capacitors and 2 5K trimmer potentiometers as shown. **NOTE: C6 is not installed in the location as printed on the board, but rather in the position indicated for R11,**



This completes board assembly. The finished board should appear as shown below except that the 16F88 chip should not be installed until connections have been made to the transceiver, power applied and the presence of 5 Volts between pins 14 and 5. When this is verified power should be removed before inserting the 16F88.



### **Corsair II Preparation**

1. With the Corsair II upside down, mount the board along the side chassis above the IF/AF board.
2. Disable the internal sidetone keying circuit by shorting the end of resistor R89 to ground. You can accomplish the same thing by shorting the base and emitter leads of Q11 together.

### **Board Mounting and Connection to Transceiver**

The board may be mounted in any convenient location. The photo below shows the board mounted along the side chassis on a small aluminum L bracket. Only one mount hole is used with a single ¼" standoff, however 2 holes are available. After the board is secured, plug in the 4-pin connector into J1 with the pin 1 indicator near the JP1 label. The wires should be trimmed to remove any excess length before attaching them as indicated below.

1. Connect the wire coming pin 1 to pin ST of connector 90. One way of doing this is to unplug the connector and attach a small piece of wirewrap wire around the exposed pin, just a little so that the connector can be reconnected. The wirewrap wire can then be connected to the wire coming from pin 1.
2. Connect the wire coming from pin 2 to the lead of capacitor C56, the one nearest U5. You may want to remove the heat sink from U5 first. You will have to remove some of the coating on the lead of the capacitor near the board. Once this is done, the wire can be soldered to the exposed lead.
3. Connect the wires coming from pins 3 and 4 to convenient sources of ground and +12 or +13.6 volts.

Turn on the transceiver and key the transmitter and adjust the VOLUME with R10 and the TONE with R14.

This completes installation.

