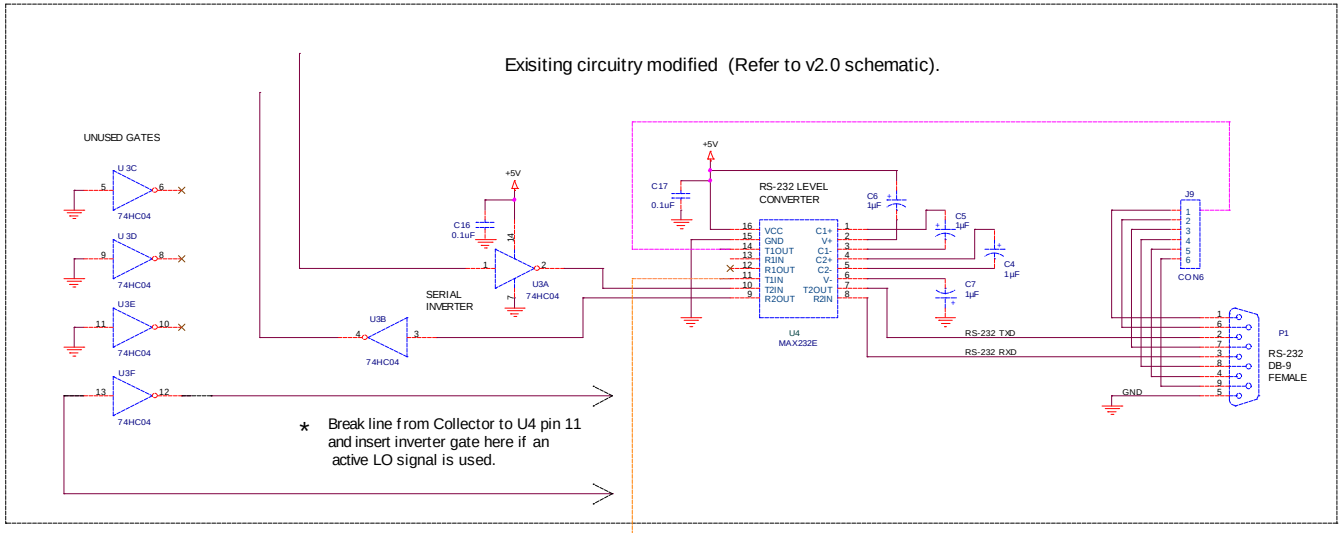
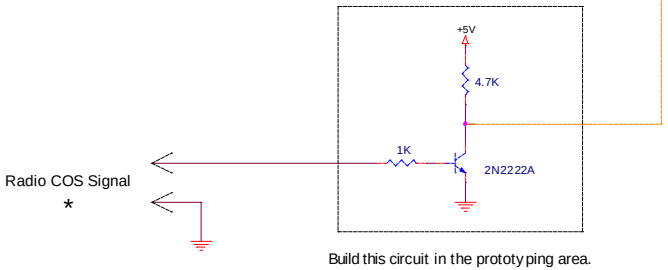
SUGGESTED COS MODIFICATION FOR VA3TO LINKING INTERFACE





This COS signal conditioning mod utilizes a transistor switch/buffer and the exisiting MAX232 (U4) on the VA3TO linking interface to provide the proper +/- RS-232 levels that EchoLink wants to see.

1. Locate and cut the trace on the bottom of the pcb between U4 (MAX-232) pins 13 and 14. Solder a wire from U4 pin 14 to J9 pin 1 (near the DB-9 connector).

2. Isolate U4 pin 11. This pin is grounded on both sides of the pcb so it is easiest done by keeping the pin from being inserted into the chip socket. Remove the chip from its socket and carefully bend pin 11 slightly out and away from the body of the part so that it doesn't touch the socket contact when the chip is re-installed.

3. In the prototyping area, build up the circuit with a 2N2222A transistor and two resistors as shown to the left. Solder a wire between the collector of the transistor to (the now isolated) U4 pin 11.

4. Determine the polarity of the COS signal coming from your radio. If it is active HI (+ voltage when unsquelched), wire the circuit as shown. If it is active LO (+ voltage when squelched) then you will need to invert the signal. If this is the case, you can use an unused gate from U3. The unused inputs are grounded. Again, it is easiest to remove the chip and bend the pin so that it doesn't touch the socket contact when the chip is re-inserted.

   You need also to consider the voltage level of the COS signal coming from your radio. You may need to alter the value of the series base resistor (1k) if the voltage is below a couple of volts or above 5 or 6 volts. A typical TTL level is ideal and will activate the circuit as shown.

5. In EchoLink, go to TOOLS - SYSOP SETTINGS - RX CONTROL and set Carrier Detect to respond to Serial CD.

* Standard disclaimer:

Some radios provide a ready COS signal, others will have to be picked off internally, i.e. from an LED or the receiver chip or some other signal that switches when the squelch changes state. This circuit/modification will work in most cases however, because there are literally hundreds of makes/models of radios, further pre-conditioning of the signal may be required. Where and how you pick off the signal is your responsibility. (I couldn't possibly know where to pick off the signal in every radio known to man.) Modify at your own risk.

Schematic Capture: H.Duff VA3TO www.iLINKca.com

Title: VA3TO INTERFACE COS MOD

Size: C | Document Number: <Doc> | Rev:

Date: Wednesday, August 28, 2002 | Sheet 1 of 2