

## ECO-020 QSD Swamping Resistor Values – 4/11/05

### **Rev. 1 Updated 9/9/05**

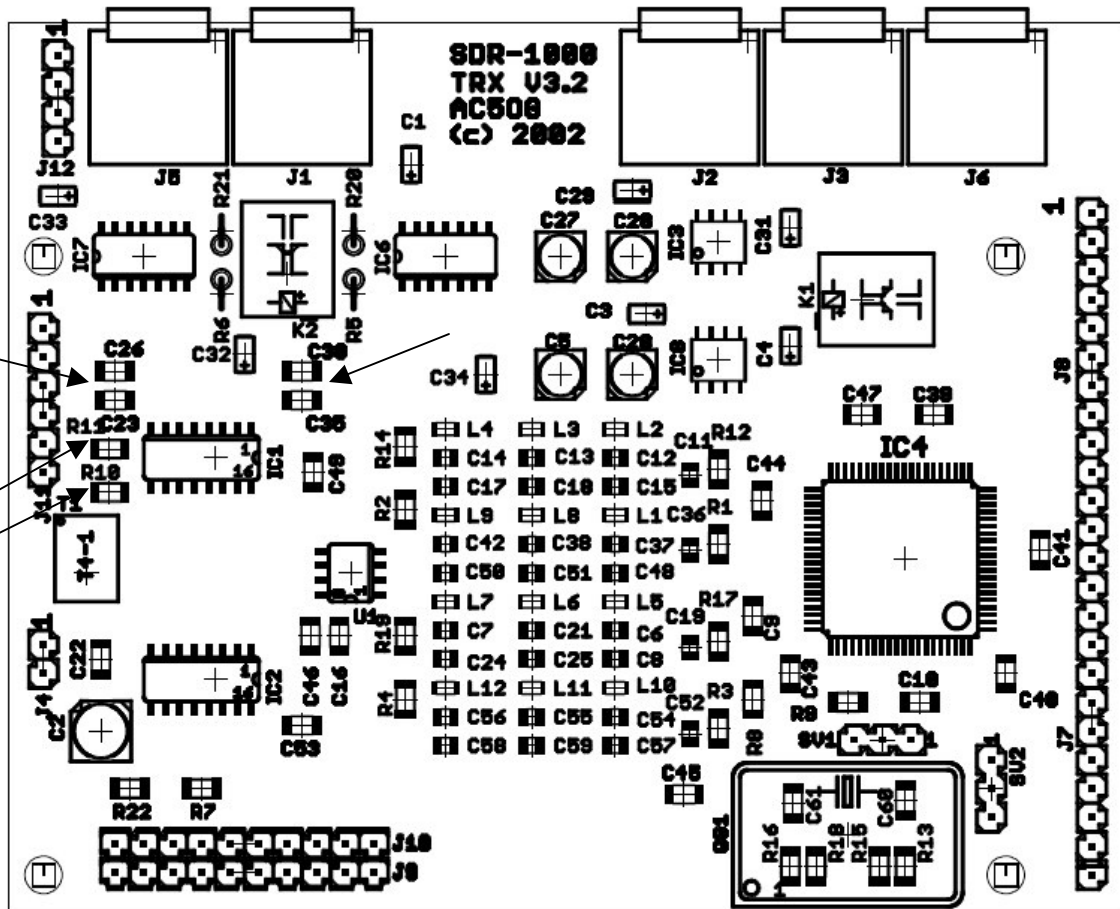
The out of band third order intercept (TOI) of the Quadrature Sampling Detector may be improved by changing the value of two 1206 SMD resistors on the TRX board. The original three board SDR-1000 had 150 Ohm resistors installed, which were replaced with 0 Ohm resistors (shorts) when the RFE board was introduced. Analysis has shown that 95.3 Ohm 1% resistors provide the proper termination for the low pass filters and preamplifier on the RFE board. This results in the improved out of band TOI as well as a lower noise floor due to better filter termination. ***Note: all radios shipped after April 11, 2005 have this modification installed. TRX boards shipped between January 1, 2005 and April 10, 2005 require that the four QSD sampling capacitors also be changed. During that period, 0.027uF capacitors were installed on the boards. All prior boards have 0.012uF capacitors installed. Check the first digits of the serial number on the bottom of the board for the date code beginning with the last two digits of the year manufactured.***

### **Tools and Components Required**

1. One fine tipped soldering iron
2. Second soldering iron for SMD removal or SMD removal iron
3. Rosen core solder
4. Two 95.3 Ohm 1% 1206 SMD resistors (Digikey RHM95.3FCT-ND or equivalent)
5. Four 0.015uF 2% PPS Film Capacitors (Digikey PCF1179CT-ND)

### **Upgrade Procedure**

1. Remove the BPF and RFE boards from the SDR-1000 board stack. There is no need to remove the TRX board from the PIO board to make this modification. ***Note that these boards can be removed from the stack without removing the bottom two boards from the enclosure.***
2. Locate R10 and R11 on the TRX board as shown in the drawing below.
3. Use either a SMD removal iron or two soldering irons to remove R10 and R11. Two irons can be used simultaneously on each end like a pair of “hot tweezers” to melt the solder and flick the part off of the PC board.
4. Install the two 95.3 Ohm resistors at R10 and R11.
5. Remove C23, C26, C30, and C35 if the radio was shipped between January 1, 2005 and April 10, 2005. Otherwise leave the existing capacitors in place.
6. Install the 0.015uF PPS Film capacitors in the four locations if removed in the previous step. ***Use caution not to overheat these capacitors during installation because the film will melt.***
7. Reinstall the boards in the stack, taking care to properly mate the interconnect headers attach the coax between the BPF and RFE boards.



TRX Board