FlexRadio Systems
Software Defined Radios

ECO-001 - Protection Diodes for the SDR-RFE Board – 8/17/04

Purpose: The purpose of this ECO is to add protection diodes on the input of the SG-4586 low noise preamplifier located on the RFE board. The parts are added to prevent damage to the preamp by nearby transmitters on the same band on which the SDR-1000 may be receiving.

Procedure: Two diodes, type 1N4148, 1N914, or similar, are to be installed between K14 and C47 on the RFE board. Disassemble the SDR-1000 as follows.

(An antistatic work area with grounded tip soldering iron or station is recommended for the following work)

1) Remove all power and computer connections to the SDR-1000. Remove the radio stack if installed in an enclosure.
2) Remove the BPF filter board by removing the 4ea 4-40 nuts securing it to the stack. Lift carefully. Remove the small coax connection between the BPF and RFE boards.
3) Inspect the RFE board to see if the diodes were installed at the factory as shown in the photo below. RFE boards shipped after August 1, 2004 will already have the diodes installed. If diodes are installed, reassemble the radio.
4) Removed the four nylon standoffs (5/8" long) and remove the RFE board. Please note that there are four nylon washers on the standoffs.
5) Using an Exacto knife or similar tool carefully scrape away the solder mask exposing the copper trace between K14 and C47 as seen in the photo.
6) Tin the exposed the copper trace being carefully near chip capacitor C47.
7) Solder one diode, cathode or banded end, to the trace and the other end to the "via" near T2.
8) Solder the second diode, anode end (no band), to the trace and the cathode end to the other "via" near T2.
9) This completes the modifications. Reassemble the radio in the reverse order.