

PSB # 697 APC # 388/398 482/582 611/711 DEADLINE: 8/31/92

Date: August 1991

From: Product Service Schaumburg

Subject: AC Line Fuse Blowing

Models Affected: MSF 5000, PURC 5000, MSR 2000, MID BAND, UHF, 800, 900 MHz  
WITH C28 BATTERY CHARGING POWER SUPPLIES

There are TWO problems that are causing the AC Line Fuse to blow.

First, during the time frame of March to June 1991 it was discovered that the capacitors C602 and C603 were being damaged during the wave soldering line process. The damage caused high leakage current, which made the clock circuit unstable. When the clock circuit becomes unstable and goes out of regulation, the AC input current increases and the Main Input Fuse blows. This problem was corrected in production on 6/15/91. The Regulator Boards affected are TRN-7241A, TRN-7277A, TRN-7404A. The capacitors were yellow chip caps on the back side of the boards. They have been replaced by brown ceramic chip caps on the revised 'B' version boards.

Second, the over-voltage circuit incorrectly senses an over-voltage condition during an AC line loss of a duration between 3 to 15 seconds. When the AC power is removed from the station and no battery is attached, these voltages begin to bleed off several large capacitors in the power supply. A finite amount of time is required for these voltage levels to decrease to zero. If the AC power is restored during this discharge cycle, these voltages may reappear at levels, which cause the regulation and control circuits on the battery charger board to believe an abnormal condition exists which it then attempts to correct. The corrective action places a choke across the ferro-resonant winding in the transformer, which causes a higher current draw to occur. In the 500 watt power supply this higher current draw can cause the Line Fuse to blow. A solution has been implemented using a diode in the over-voltage circuit. The diode is soldered from U602 pin 6 to the collector of Q616 on the solder side of the regulator boards TRN-7241B, TRN-7277B, TRN-7404B. The purpose of the diode is to remove the voltage from the input to the voltage comparator when an AC failure has been detected.

If you are experiencing Line Fuse failures with stations shipped between March and June 1991, serial numbers CRE to CRM it is recommended that the regulator boards be replaced with the revised 'B' version boards.