

## 5.4 TROUBLESHOOTING

Effective troubleshooting requires a thorough understanding of the block diagram and circuit description located in Section 4 of this manual; then the Performance Tests in Section 5 will aid in localizing the trouble symptom to a particular PC board. Once this has been accomplished, the board can be replaced, or repaired with aid of the proper schematic and parts layout diagram. In general, it is preferable to replace a defective PC board assembly.

Equipment troubles are frequently due simply to improper control settings; therefore, before engaging in a troubleshooting procedure, be sure front-panel controls are set in proper operating position. Refer to the operating instructions in Section 3 of this manual for a complete explanation of each control's function along with typical operating instructions.

After verifying that the trouble is not improper setting of the controls or test setup, make a thorough visual inspection of the instrument for such obvious defects as loose or missing screws, broken wires, defective sockets, loose RF cables, and burned or broken components.

After localizing the problem, voltage and resistance checks will help locate the defective component.

For troubleshooting purposes, it is permissible to operate the instrument with any of the plug-in PC boards or RF cables removed; however, the instrument should be turned off when removing or installing boards. If substitute boards are available, this provides an easy method of verifying if a suspected board is defective.

RF cables can be disconnected from the PC board connectors, and a power meter or spectrum analyzer connected directly to the connector for power level or frequency measurements. Fabrication of a short coax adapter cable, terminated in a mating SMB connector on the instrument end, will facilitate connection of test equipment.

A problem in a power supply may cause many symptoms pointing to other areas, and should be checked when the symptom does not clearly indicate a specific problem. Performance of the supplies is indicated in the Performance Tests.

Figures 5-3 and 5-4 give troubleshooting for the instrument in the flow chart form.