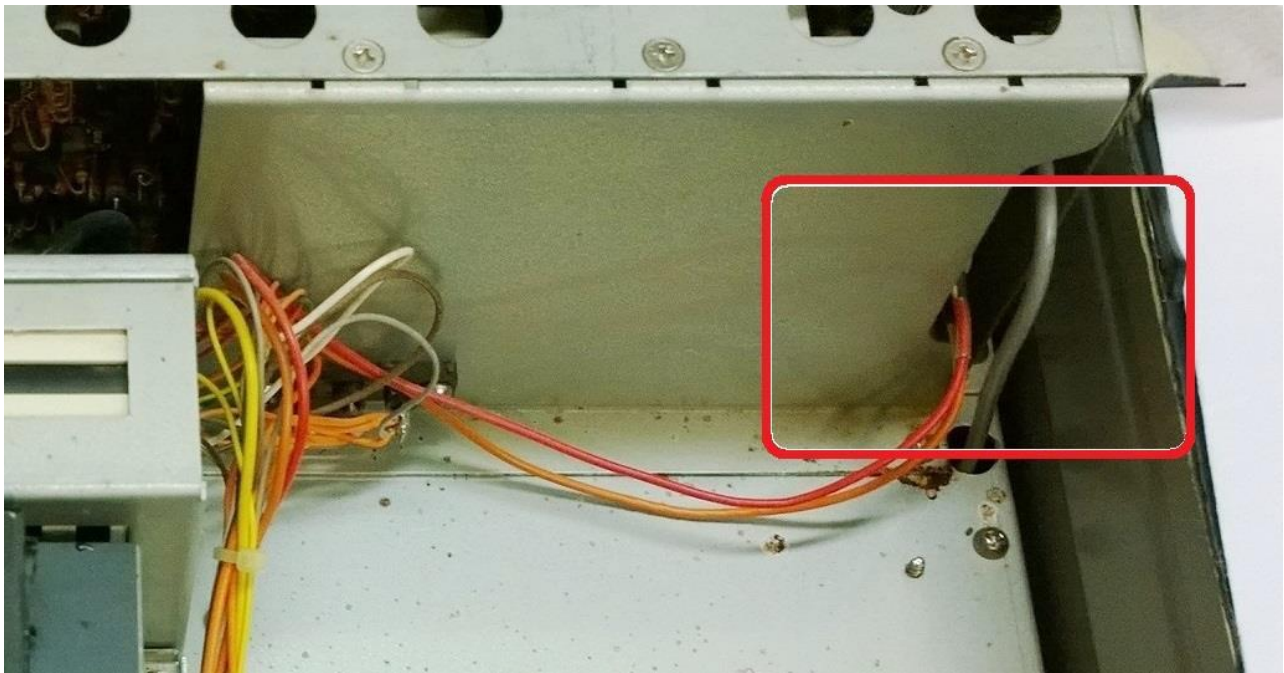


TWO SIGNAL BOARD TESTS

There are a couple safety circuits that are designed to protect the PA. The circuits are circled in red below and on the photo on the next page. The connectors are outlined in yellow. The larger one is the Automatic level Control (ALC) from the LPF.

ALC TEST: The ALC level is controlled by a feedback circuit from the Power Amplifier and the LPF. It reduces the drive from the Signal Unit to the PA as the SWR increases, and it will shut the drive down completely if it believes that the SWR is too high, there's a short at the antenna terminal or there's a fault somewhere else in the output circuit. A simple test is to remove the ALC plug from the right side of the LPF with the power off. The connector is outlined in red, below.



The rig is then turned back on. With the carrier control "off" (fully counter-clockwise), the rig is set to SEND, and the carrier SLOWLY increased. If the output power climbs to 100 watts or more as the carrier control is advanced, then the problem is in the LPF, or in the ALC circuit in the Signal Unit. **Care is needed here because the power can go over 150 watts with that plug removed, which could damage the finals.**

CURRENT CONTROL (ICA/ICB) The other power control circuit is the current limiter (ICA and ICB) which comes from the connector on the AVR board. This circuit, which shuts down the drive to the PA in the event of a current overload, is maintained while rebuilding the AVR board after the Quint conversion. This circuit receives the main voltage and a slightly lower one from the voltage drop across that 0.05 ohm power resistor in the PA supply line. The gray wire from that resistor goes to the 3-pin connector on the AVR board, through one of the green inductors, and then down to the signal unit via the brown wire. The 28.5V B+ goes passes through the other green inductor down to the Signal Unit via the white wire. A simple test to see if this circuit is malfunctioning is to unplug the two-wire ICA/ICB connector (with the power off). The rig is set to SEND and the carrier control slowly eased in. If the power returns to normal, then the problem is either in the voltage output from the AVR board, or a bad component on the Signal Unit board.

For this test, you can unplug the 3-pin connector on the AVR board, or the two-pin one on the Signal Board. **It's normal for this test to result in a slight increase in power output even if the circuit is good.** But if the power output problem is the result of incorrect ICA/ICB voltages, the increase will be dramatic.

