Spectrotek Services

4 August 2015

Engineering Change Order – SPA4-5

Units affected: SPA4 - All below serial number 4120; also, all PA3, all PA2, and all PA1 amplifiers.

It is strongly recommended that this ECO be applied.

This ECO will improve the gate drive to the IFR730 and the STW20NK50Z. This will slightly increase the output power of the amplifier. Because of the improved gate drive, these transistors will operate more efficiently and run slightly cooler.

PROBLEM

Some amplifiers occasionally exhibit slightly low output or a fall-off in output during normal operation. This effect is most often seen when using DC voltages above 133 volts. The use of an oscilloscope will reveal a distorted gate drive signal present on both the IRF730 and the STW20NK50Z. The distortion becomes more severe ad the DC operating voltage is increased.

SOLUTION

1) Remove and replace the existing gate resistor that is connected between the gate of the IRF730 and circuit ground. Replace the resistor with an 82 Ohm ¼ watt metal film resistor.

2) Remove and replace the existing gate resistor that is connected between the gate of the STW20NK50Z and circuit ground. Replace the resistor with an 82 Ohm ¼ watt metal film resistor.

COMMENTS

Each resistor is located on the amplifier circuit board next to a 1N41458 diode.

Depending on the particular version and serial number of the amplifier, the resistor will be 4700 Ohms (4.7 k) or 18,000 Ohms (18 k).

Please refer to the instruction manual for your particular amplifier for the location of these resistors on the amplifier circuit board.

Note that if you do not have the proper desoldering tools, it may be somewhat difficult to remove these resistors from the circuit board.

In the event that you do not choose to remove the resistors, the new resistors may be soldered directly across the existing old resistors.

Solder the new 82 Ohm resistors to the bottom of the circuit board. Be sure to solder them to the correct points on the circuit board.

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