

Spectrotek Services

26 April 2014

Engineering Change Order – PA2-1

Units affected: Serial Numbers 2000 through 2132

Observed problems:

- 1) Random failure of the STW20NK50Z for no apparent reason.
- 2) Overheating or failure of the IRF730 for no apparent reason.
- 3) Unstable waveform on the leading or trailing edge of the modulation square wave.

Cause of the problem:

Manufacturing variations in the input capacitance of the TC4427 MOSFET driver IC may cause an unstable bias condition to exist in the input amplifier of the TC4427. This instability results in a DC level shift, which changes the Schmidt trigger level, causing a series of incorrectly shaped output pulses from the TC4427. These pulses cause excessive current through the IRF730 and excessive drain voltage pulses to appear across the STW20NK50z, causing punch-through failure of the STW20NK50Z.

Resolution of the problem:

Replace existing resistor R1, 10,000 Ohms $\frac{1}{4}$ watt with a resistor of 470 Ohms, $\frac{1}{4}$ watt.

No other changes are required. No recalibration or adjustment of the modified PA2 is required after performing this ECO.

This error affects both assembled and kit versions of the PA2 amplifier with serial numbers from 2000 through 2132.

It is recommended that this ECO be applied to all units within that serial number range.

Customer installation of this ECO will not void or change the warranty.

Amplifiers requiring installation of this ECO may be returned to Spectrotek Services at the Customer's expense. The amplifier will have the ECO installed, fully tested, and then returned to the Customer. There will be no charge to the Customer for installation of the ECO or the return shipment back to the Customer.

Please refer to the picture below for the position of resistor R1 which is highlighted in orange.

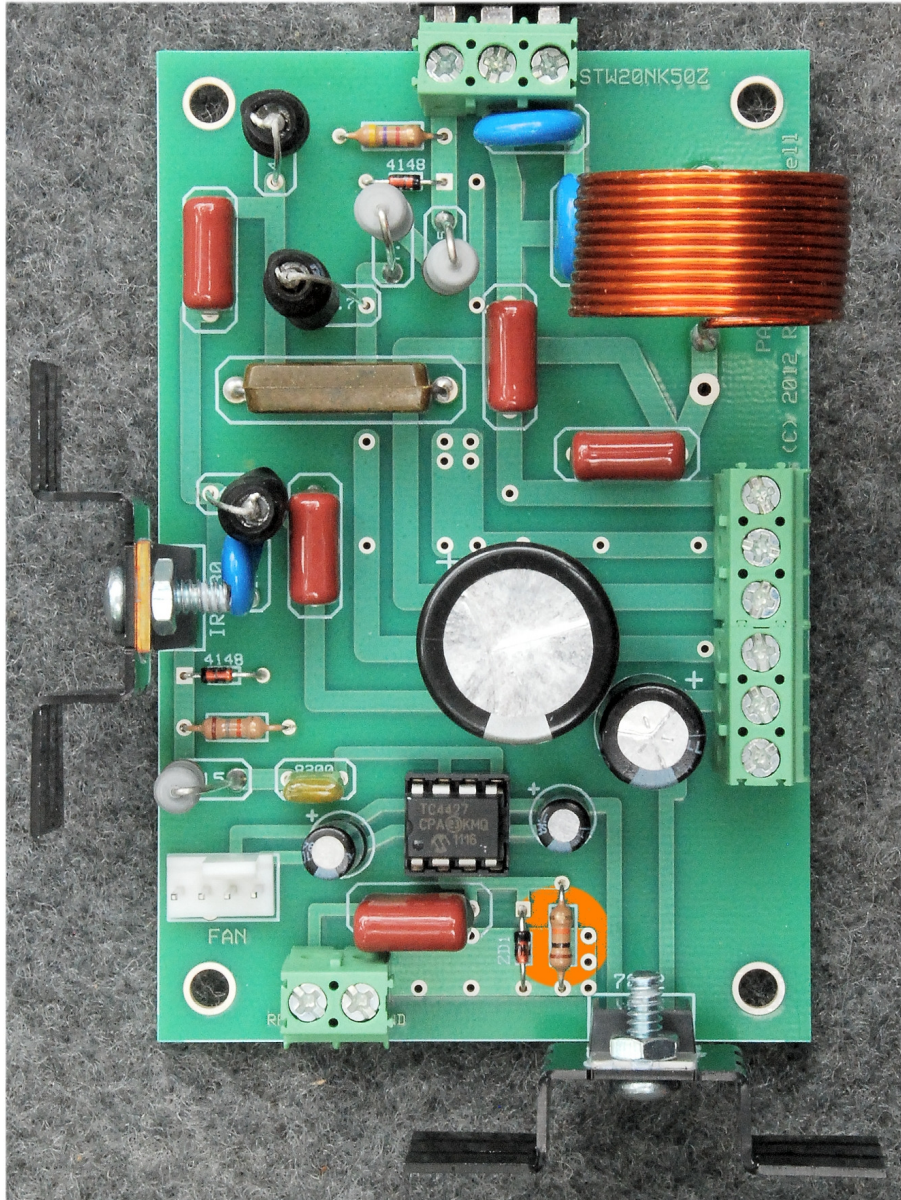


Photo 1

End of PA2 ECO-1