I posted the following to the Ten-Tec and Orion Reflectors in July 2012:

From: Rick W
To: Orion565 ; Ten-Tec Reflector
Sent: Thursday, July 19, 2012 8:41 AM
Subject: [TenTec] Orion 565 LCD Contrast & Power Distribution Board

For the last several months my Orion (565) has had a screen contrast problem at start-up. Last week I noticed that is was still there but somewhat quicker than it was in the winter months. I thought perhaps I was imagining things so I shut down the rig and rebooted. The screen came up at the correct contrast immediately.

What was going on? The following morning when I turned on the rig I timed the process. Virtually a white screen at start-up and then some contrast at 30 seconds and close to full useable contrast after 2 minutes. Putting all this together suggested something in the circuit was responding to ambient temperature. It was time to dig out the schematics.

The first thought of a culprit was C700 on the logic board (Schematic A7 sheet 15 of 16). C700 is in the contrast line to the LCD and immediately follows the hardware contrast adjustment pot. If this capacitor was leaking or had some temperature stability problem it could be the culprit. I replaced the 4.7 uF @35VDC capacitor but nothing changed.

I felt that my LCD screen was likely good since it was relatively new. So I began to look elsewhere and noticed that the "bottom" of the contrast pot and one end of C700 were tied to VEE.

VEE is generated on the infamous power distribution board and nominally is about -20.5 VDC. So with the rig cool I monitored the VEE at start-up. In a period of 2 minutes it slowly climbed from about -18.5 VDC to -20.1 VDC and then stabilized. This timing matched my Orion screen contrast.

I looked at the power distribution board circuit (schematic A9) and replaced C1 (100 uF @35 VDC) and C3 and 4 (10 uF @50VDC).

After an overnight cool down of the Orion I am happy to announce that this morning there is NO delay in reaching full usable screen contrast at start-up!

73,
Rick
VE7TK

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