Fox Delta

Amateur Radio Projects & Kits

Troubleshoot Guide by Frank / K7SFN: AAZ-0914A USB 50MHZ Antenna Analyzer

AAZ Troubleshooting Guide
Refer to I2TZK's SWRA Testing Guide for additional information

1. Verify correct component values were installed in each location on the board.
2. Verify that the PIC2550 is installed properly. Notch and Pin1 towards the USB connector.
3. Power AAZ On by connecting to a computer with a USB Cable. Note: Yellow LED should be lit.
4. Make the following voltage checks:
a. +5 vdc @ Pin 1 of PIC2550 (If no 5 VDC, check for power jumper Pins 1-2 (USB) on 3-Pin power header.
b. +5 vdc @ Pin 3 on DDS Header (Pin 3 is next to Header Pin 1)
c. +5 vdc @ Pin 6 & 7 of AD8307 (Be careful not to short)
d. +3.3 vdc Pin 15 or 16 MPIO-FRC16 connector (3.3v Regulator Output)
e. +3.5 vdc from   (SGA3486 Output Pin)
5. **Remove Power** - Using a DVM, measure the resistance from the Antenna BNC connector to ground. You should measure between 64-65 ohms (typical is 64.5 ohms) Any reading that deviates much from this value indicates a problem with the 100 ohm resistors that constitute the input bridge.
6. Connect a O-Scope or frequency Counter to the "Antenna" connector, and check for the presence of a 10 MHz signal.
7. If 10 MHz is present, DDS circuitry is working. Go to Step 8.
8. If 10 MHz is not present, Check to see if DDS Oscillator is operating, by removing power and unplugging DDS Module. Using an Oscilloscope, check for presence of 125 MHz signal at Pin 9 on DDS header. (Pin Numbers are silk screened on AAZ Board. If 125 Mhz is not present at Pin 9, replace 30/125 Mhz crystal oscillator, and re-test.
9. Using an oscilloscope, verify operation of the 20 MHz PIC crystal oscillator (X1) by touching the scope probe to either Pin 9 or Pin 10 of the PIC. You should see a 20 MHz waveform.

10. Make sure a Jumper is installed at H1 on the circuit board.
11. Make sure no jumper is installed across "Update" Header.

AAZ Test Point Locations
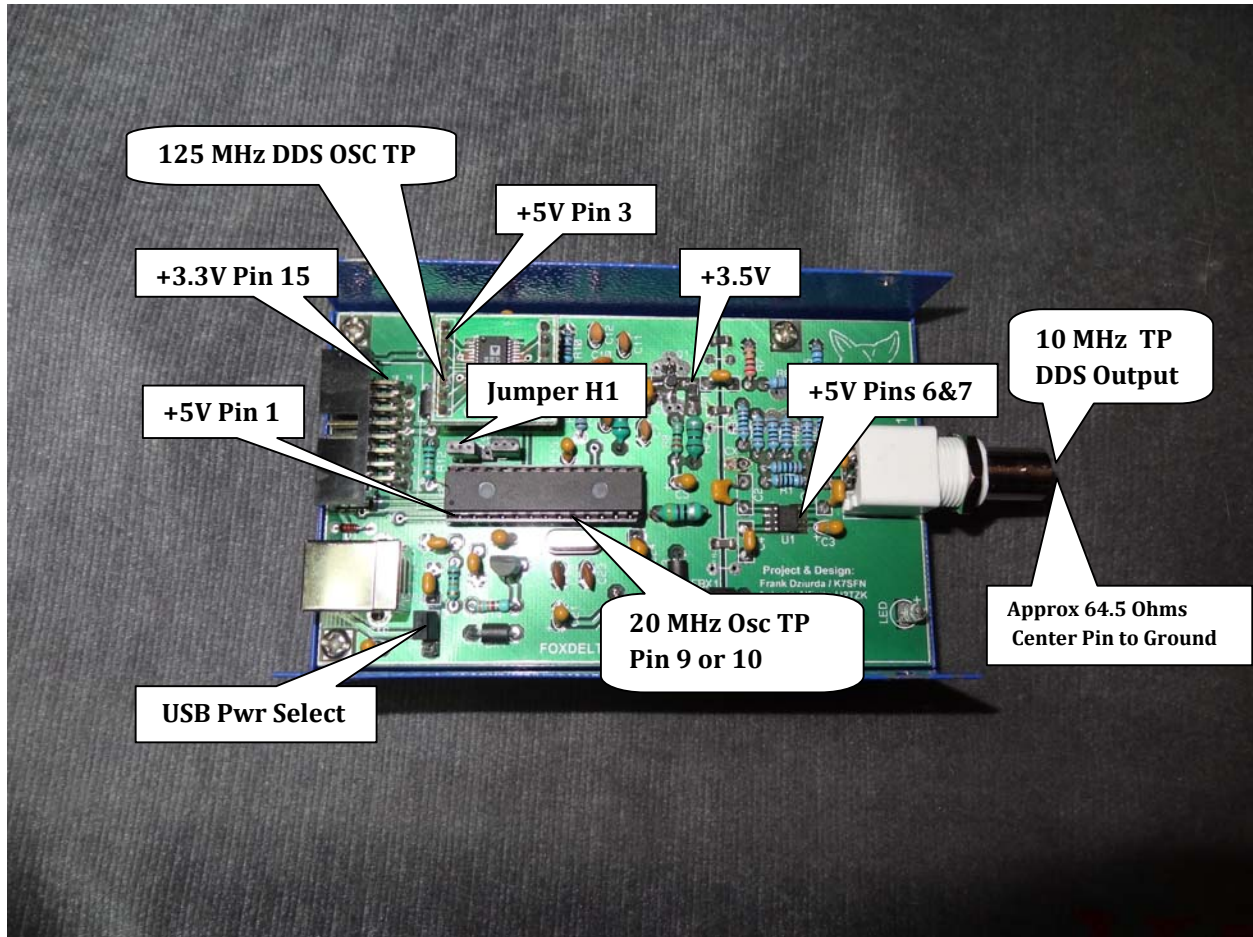
The above tests should cover most of the common problems encountered when assembling the AAZ-0713 and AAZ-0914. After going thru the above tests, and you are still having problems, Please post on the FoxDelta Yahoo Groups, or contact Dinesh, VU2FD at esales@foxdelta.com.

Good Luck and Have Fun with your Antenna Analyzer.

Frank – K7SFN   May 11, 2015