PST Test Proccuderes

Revsion 1.0

Wrtitten by Anthony Ruiz 9/15/16

# Power Test

1. Plug in the PST and power supply. Verify the AC toggle switch is in the on position. Turn on the PST via the toggle switch in the front of the unit.
2. Verify the fan in the back of the unit come on.
3. Verify the LCD screen is on (green backlit LED), and the screen reads 0.0V. If you can not read the voltage you may need to adjust R20.
4. Turn on the power supply. Set output 1 to 4.0V. Set the toggle switch on the PST to Enable. Verify the voltage on the LCD screen read 4.0V. You may need to adjust R21 to accomplish this.
   1. Plug a DMM and verify the voltage on the PST output is with +/-5% of the set voltage
5. Set the pot to 500, and toggle the switch to Set. Verify the LCD screen reads 2.0V
   1. Plug a DMM and verify the voltage on the PST output is with +/-5% of the set voltage
6. Set the pot to 0 and verify the LCD screen reads 0.0.
   1. Plug a DMM and verify the voltage on the PST output is exactly 0V. Adjust R4 to accomplish this
   2. It is critical that this exactly 0V, if you cannot achieve this, fail the unit.

# Digital Modulation Test

1. Connect a DMM to the BNC labled output.
2. Connect to the PST via hyperterminal and a USB cable.
3. Type $V and record the firmware version on the system traveler.
4. Type the command $DUOH. The Voltage should now be 5.0V
5. To test the input port, a function generator or a QFI TMTD will be needed. For this example we will use a TMTD.
   1. Set the TMTD box to Pulse mode with a frequency of 1kHz
   2. Plug the trigger out from the TMTD box into the Digital modulation input
6. Type the command $DUIG. Every second you should see the terminal fill with either an AckR or AckF. The digital modulation is tested

# Noise Test

1. Set the output voltage to 1.0V. Verify the LCD screen reads 1.0V. Hook up an oscilloscope to the PST output. Verify the noise is approximately 20mv.
   1. If not fail the unit.
   2. Record the noise on the PST traveler

# Rise Time Test

1. IT is essential to measure the rise time of the PST voltage. Hook up an oscilloscope to the PST output. Set the output voltage to 1V. Turn the potentiometer to 0%
   1. In HyperTerminal type command $OL. Record the fall time in the PST traveler.
   2. Type command $OH. Record the rise time
2. There isn’t a clear understanding what is an acceptable fall/rise time, but this information needs to be gathered to make that determinitaon

# Voltage Sense Test

1. Turn off the PST with the power supply set to 1V. Verify on the scope, that the voltage goes to 0V. If not fail the unit

# SystemTest

1. Verify the unit functions properly with QFI software.
   1. Test digital modulation
   2. Test basic Bi -Level