



PM4 Dual Channel RF Meter: Calibration Procedure by Frank / K7SFN

“Quick” Calibration Procedure for The FoxDelta GCPU + PM4 Power Meter

1. Attach the PM4 Sensor to the GCPU Unit and Connect +12 vdc power or a USB Cable to the GCPU.
2. You should a display similar to Figure 1 below. If you do not See ChA dBm Watt, rotate the Encoder knob until you ChA dBm Watt is displayed at the top of the LCD screen.

FIGURE 1



3. Press “BTN 1” once to switch the unit into the HF-VHF-Custom (CST) Frequency Range.

4. Rotate the “Encoder” knob until “HF” is highlighted at the bottom of the LCD display. Note: You can also select VHF or CST and save calibrate Data each of these frequency ranges. The process is the same, but for this example, we will use HF. See Figure 2.

FIGURE 2



5. Press “BTN1” to return to the Display shown in **FIGURE 1**.
6. Connect a Calibrated Signal Source to Channel 1 of the PM4 Sensor. Adjust signal level to -40 dBm and the frequency you wish to calibrate the PM4. For this procedure, I am using 10 MHz @ -140 dBm.

7. Press the “ENCODER” knob and you should see the Display in FIGURE 3.

FIGURE 3



8. Press (Push) ENCODER Knob and you should see the Calibration A HF Screen shown in Figure 4.
NOTE: The Cursor is to the left of the "P1" -40 dBm Calibration Level.

FIGURE 4



9. Press (Push) the ENCODER Knob, and you will see the numerical value at the bottom of the LCD display has been inserted into the “P1” -40 dBm calibration point. See FIGURE 5.

FIGURE 5



10. Press “BTN 1” and Cursor on LCD Display should move next to “P2” 0.0 dBm Calibration point. Adjust your Calibrated Signal Source to 0.0 dBm, but do not change frequency. See FIGURE 6

FIGURE 6



11. Note numerical value representing 0.0 dBm displayed at the bottom of the LCD display. Press (Push) the Encoder Knob and this value will be transferred into the “P2” 0.0 dBm Calibration point. See FIGURE 7.

FIGURE 7



12. Press “BTN 1” and the Cursor should move next to “SAVE”. Press (Push) the ENCODER Knob and the “SAVE” line will blink “SAVE CALIB” several times as the Data is saved in the HF measurement mode.

13. The LCD display should now show the screen shown in FIGURE 3, and the cursor should be next to “EXIT” . Press (Push) the ENCODER Knob one final time and you should return to the Screen shown in FIGURE 8. If calibration was performed correctly, you should see 0.0 dBm for ChA.

FIGURE 8



NOTE:

This calibration procedure can be performed to store Six Calibration sets. "HF" VHF" & "CST" (CST=Custom) for both Channels "A" & "B". The calibration data is saved in non-volatile memory inside the PIC.

When you install the small knob on the ENCODER shaft of the GCPU, make sure you leave enough room so you can feel the "click" of the push button, when the knob is depressed (pushed). I mention this because it managed to make me scratch my head for awhile until I realized what I had done.

For the above procedure, I used a HP-8640A Signal Generator Set for 10 MHz, although you can use almost any good stable signal source to calibrate this instrument. Remember not to exceed +10 dBm at the sensor input.

For more detailed technical information and Calibration Procedures, please go to Tony, I2TZK's Document on the GCPU and PM4 Sensor;

It is located at: <http://foxdelta.com/products/infinity/pm4/PM4-GLCD-v100.pdf>

Congratulations, Good Luck, and enjoy your FoxDelta PM4 RF Power Meter.

Frank / K7SFN , 26/9/2013

For more information, please visit: <http://www.foxdelta.com/>