

SWR monitor test procedure

Connect either the 10 watt or 100 watt SWR sense head to the display module via a stereo audio cable.

Connect the USB cable to the computer

Set up terminal program (HyperTerminal or something similar) on computer (19200 baud, 8 bits, no parity, 1 stop bit)

Open the case of the display and data processing unit. Set all DIP switches OFF. Remove jumper JP1. Insert jumper JP2 only if the 100 watt SWR sense head will be used. (See the Operating Instructions document for the location on the circuit board of the DIP switch and jumpers). Turn rear panel *XLO Enable* switch OFF.

Set front panel *Peak Hold* and *X3 Sensitivity* toggle switches OFF.

Turn on power to meter and check that the green LED on the front panel comes on. Verify *Calibrating* LED comes on steadily for 3 sec (this may happen 2-3 times), and then starts flashing briefly every 6 seconds, indicating normal activity. Sequence the front panel rotary switch through all display modes. Meter should read near zero in all modes. *XMTR Lockout* LED should remain OFF.

Start the computer terminal program.

Press the "Enter" key. This should generate a one-line display of data from the SWR monitor. Verify zero reading on all five channels.

Turn DIP-1 ON. Observe *Calibrating* LED steady ON. Adjust the meter sensitivity pot R16 for full-scale reading on the meter. Turn DIP-1 OFF. Verify *Calibrating* LED is OFF, flashing very briefly about every ten seconds.

Connect the transmitter output to the sense head input with a short length of 50-ohm coax.

Attach a 50 ohm dummy load to the sense head output.

Turn DIP-2 ON. Verify fast flash rate on *Calibrating* LED (2-3 times per second). Set the *Mode* switch to Forward. Run the transmitter in CW mode. Apply a known level of medium RF power from xmtr (i.e., about 5 watts if the 10-watt sense head is in use, or about 50 watts for the 100-watt head). Adjust scale factor pot R6 for correct reading of power level. Turn DIP-2 switch OFF. Turn the transmitter OFF.

Sequence through all five positions of front panel *Mode* switch: Forward, %Reflected, Net Power, SWR, and Return Loss. Verify that %Reflected is near 0%, Net Power is about the same as Forward, SWR is about 1.0 and Return Loss is near full scale on the meter.

Press "Enter" on computer terminal keyboard to display one line of data. Verify all five channels.

Temporarily install internal jumper JP1. Press “Enter” on the computer terminal keyboard and verify that the terminal now displays three raw data channels: Zero, Forward and Reflected.

Remove JP1.

Reduce xmtr power to less than one-third full scale. Verify operation of *X3 Sensitivity* switch on Forward, Net Power and SWR displays. Turn *X3 Sensitivity* switch OFF.

Change xmtr to SSB mode. With *Peak Hold* switch ON and forward power mode selected, speak into the microphone and verify the peak hold function. Or, just send a single “dit” in CW mode. Turn *Peak Hold* switch OFF.

Change xmtr to CW mode. Increase xmtr forward power to near full scale on meter. Turn xmtr OFF and change load on the sense head output connector to 100 ohms.

Turn transmitter ON. Verify that SWR reads about 2.0, % Reflected power shows about 25 % and Return Loss is about 6 db.

With transmitter running and supplying power to the sense head, test data logging:

- Press “Enter” to display one data record on terminal, and verify readings.
- Press CTRL-L. After the prompt, enter “2”. Press “Enter”
- Verify data records log at 2-second intervals
- Press CTRL-Q to end logging and display “End Log” message.

Turn ON the rear panel *XLO Enable* switch. Make sure DIP-3 (long lockout time) is OFF.

With DIP-4 and DIP-5 both OFF, briefly (less than 1 second) cycle the transmitter on and then off. The *XMTR Lockout* LED on the front panel should come ON for about 3 seconds and then turn OFF. At the same time the XLO relay should open as observed with an ohmmeter across the rear panel banana jacks.

Move DIP-3 switch to ON. Again apply a brief burst of power from the transmitter. The *XMTR Lockout* LED should come ON for about 9 seconds and then turn OFF. The XLO relay should open for the same length of time.

Turn both DIP-4 and DIP-5 ON (selects XLO Enable threshold at SWR = 4.0). Briefly turn ON the transmitter. Verify that the *XMTR Lockout* LED does not turn ON and that the XLO relay contacts remain closed..

Turn OFF the rear panel *XLO Enable* switch. Turn all DIP switches OFF.