

# DIAMOND ANTENNA

## SX40C

### General Specifications

The SX40C Cross-Needle power meter combines two meters which indicate forward and reflected power respectively. It provides the direct read out of the SWR value from the crossing of two pointers.

### Specifications

Frequency Range 144 - 470 MHz

Input Impedance 50 ohms

Power Range 30W or 300W switchable

Note: 70% of the full scale for 200 MHz band.

Power Readings Direct read out

Note: For 220 MHz band, it should be calibrated by 70% of the direct read out.

Power Accuracy 10% at full scale

Min. Power Requirement FOR MEASURING SWR 4W

Input/Output Connector UHF

Dimensions 85W x 87H x 95D m/m

### Setting Up

Connect the TX output of the transceiver to the "TX" connector and the antenna to the "ANT" connector, both located on the rear panel of the unit. Use 50 ohms coaxial cable for the connections.

### Precautions

- 1) No mechanical shock to be given to the unit as it employs precision meters.
- 2) Do not transmit with an antenna out of tune, or open condition, as it may burn out the meter by high voltage.

### Operation

Be sure the power output range of the transceiver and set the LO / HIGH range accordingly. LO / HI switch is depressed for high (30W to 300W) range, and out for lowest (3W to 30W) range.

Keying the transceiver, measure the required parameters as follows.

- Forward power ~ follow the forward scale and read.
- Reflected power ~ follow the reflected scale and read.
- Standing wave ratio (SWR) ~ follow the SWR scale from the point of pointers crossing and read it out.

Refer to figure 1 showing SWR 1.5 as an example.

Note: In case of 220 MHz band measurement, both forward and reflected power to be converted with the following formula: direct read out in the scale x 0.7 = actual power.

Example: when direct read out shows 10W, it should be 10W x 0.7 = 7W.

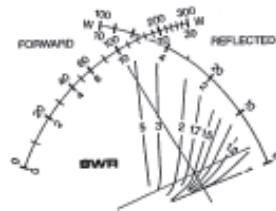


Fig.1

Pf : Forward Power

Pr : Reflected Power

$$SWR = \frac{\sqrt{P_f} + \sqrt{P_r}}{\sqrt{P_f} - \sqrt{P_r}}$$

$$SWR = \frac{\sqrt{100} + \sqrt{4}}{\sqrt{100} - \sqrt{4}} = \frac{10 + 2}{10 - 2} = 1.5$$