

OPERATING MANUAL

MODEL ST-3 ANTENNA TUNER

GENERAL

1. The Swan ST-3 Antenna Tuner is designed to match a 160-10 meter transmitter to almost any type antenna system.
2. The ST-3, when properly adjusted, will transform the load impedance to 50-70 ohms.
3. Included is a BALUN, so antennas fed with open wire feed-lines may be properly tuned to desired frequency.
4. Directional coupler, forward and reflected powermeters provide tuning indications and monitor transmitter performance.
5. The ST-3 may be used with coaxial fed antennas, as well as end-fed single wire types.
6. An antenna selector switch provides versatility in antenna selection, as listed below..

INSTALLATION

1. Attach a ground wire to the ground post on back of tuner. The ground wire forms part of the antenna system when using an end-fed single wire. It is also important when using other type antenna systems.
2. From the rear panel marked "transmitter" connect a coaxial cable to the station transmitter.
3. Antenna connections:
 - a. Coaxial connector 1, can be used for connection to a dummy load or resonant antenna.
 - b. Coaxial connector 2, coaxial feedline through ST-3 tuner.
 - c. Coaxial connector 3, coaxial feedline through ST-3 tuner.
 - d. Single wire, end-fed wire (recommend 50 feet).
 - e. Balanced line, open wire feed lines.
4. Meter light:

Power for meter lamps is 12VDC and must be supplied through the RCA type connector on the rear panel. When used with the Swan PSU-5 Power Supply, and 100MX transceiver, this power is available through the main power connector. Voltage supplied by the PSU-5 is looped through the 2 ampere fuse in the 100MX and is available on pin 3 of the power connector. Pin 6 is the ground return of the 12V meter voltage.

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OPERATION

WARNING

DO NOT APPLY MORE THAN 30 WATTS TO THE ST-3 PRIOR TO TUNING. ALWAYS TUNE WITH LOW POWER. ONLY AFTER TUNING IS COMPLETED SHOULD THE EXCITER OUTPUT BE INCREASED TO MAXIMUM POWER. DO NOT ROTATE INDUCTANCE SELECTOR WITH POWER APPLIED OR TRANSMITTER KEYED.

DO NOT APPLY MORE THAN 200 WATTS WHEN TUNING IS COMPLETED.

1. Set "Transmitter Matching" and "Antenna Matching" controls to mid-range.
2. If station receiver is also fed thru ST-3, listen on receiver for maximum band noise while turning inductance control for maximum noise. ("A" is least inductance, "R" is maximum inductance).
3. Key the transmitter and apply just enough power through the System to obtain a reading on the front panel forward and reflected power meters. (The sensitivity of the reflected power meter is ten times greater than the forward power meter).
4. Check inductance for a drop in reflected power.

Note: When checking for a drop in reflected power, forward power should rise.

5. Adjust "Transmitter Matching" and "Antenna Matching" for minimum reflected power.
6. Apply full power and touch up "Transmitter Matching" if necessary.

