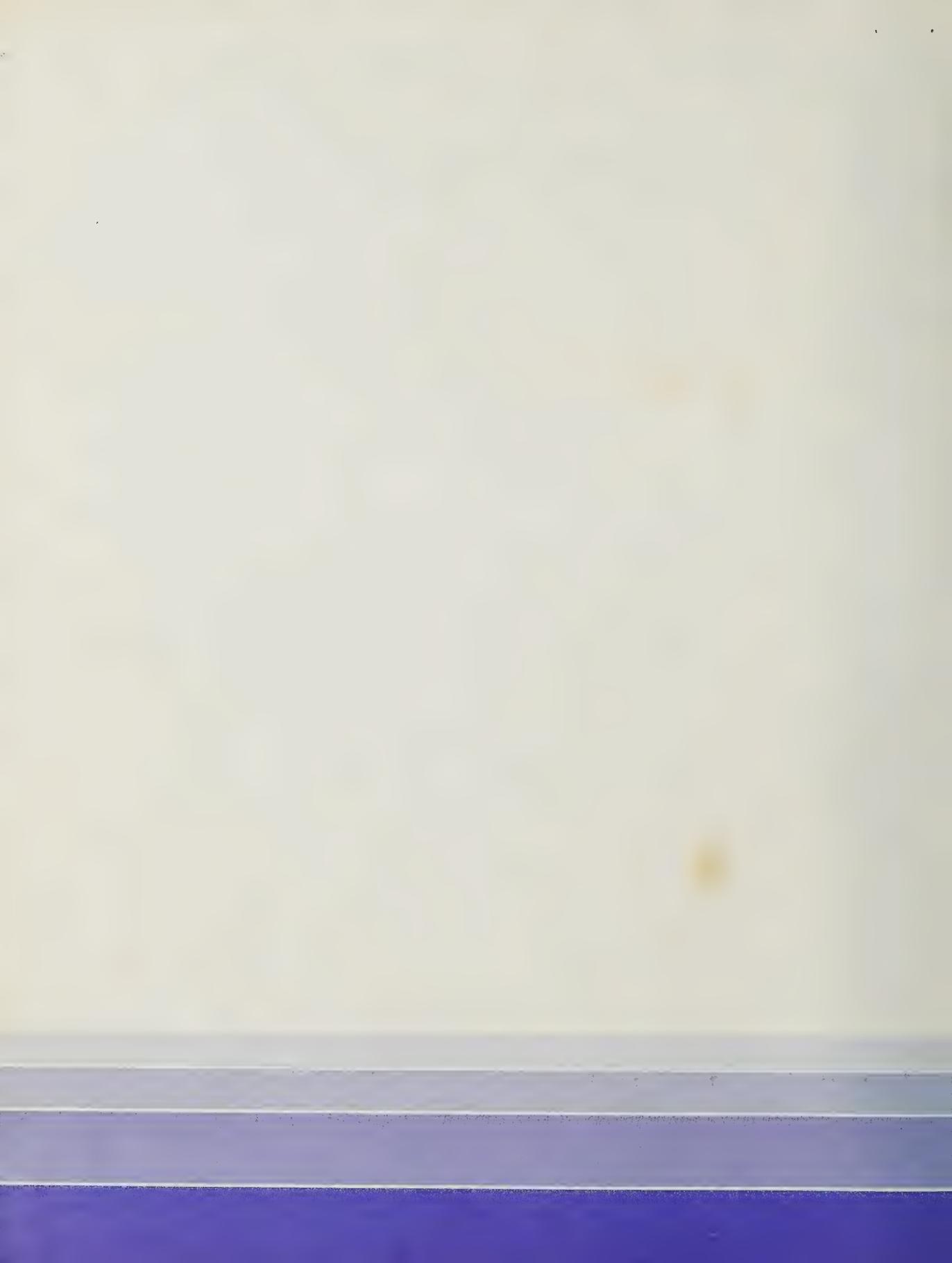


Operating Manual

JR. MONITOR

Dentron



Introduction

The JR. MONITOR Antenna Tuner is a sub-compact 300 watt capability antenna tuner of modern design. Its features offer the Amateur, SWL, or CBER the ultimate in operating flexibility. Virtually any type of antenna system can be used, whether it be COAX (50 or 75 ohm), balanced line (twin-lead), or random wire. The JR. MONITOR not only matches any type of feedline to a nominal 50 ohms, but is small enough to go absolutely anywhere from mobile to fixed to portable use. A mobile mounting bracket is included, and the unit is equipped with rubber feet to protect other equipment when stacking the JR. MONITOR. Another unique feature built into the unit is an RF sampling circuit and companion relative power output meter, front panel mounted. Using the relative power output meter greatly aids tuning, especially when an SWR bridge/power meter (such as the DenTron W-2) is unavailable. The frequency range of the JR. MONITOR tuner is 1.8 to 30 MHz, continuous. The JR. MONITOR was designed to be used with any exciter or transceiver producing up to 300 watts output. American-made components and all-metal construction of the unit combine for long life and trouble-free service.



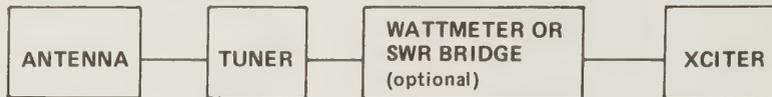
Installation

The most essential component in any system utilizing a tuner is a good earth ground. A cold water pipe near the operating position, chassis ground in operating mobile, or a ground rod as near the station installation as possible are all suitable. Be certain to take your ground lead directly to the JR. MONITOR first, then to your transmitter, and finally to the remainder of your station equipment. If you are using a low pass filter for harmonic attenuation, be certain to place it as close to the input (SO-239 marked Transmitter) of the JR. MONITOR as possible. This will offer the filter device a pure 50 ohm load, and thus improve its efficiency. Using 50 ohm COAX (RG-8 or RG-58 or equivalent), connect your transmitter or transceiver to the transmitter input of the JR. MONITOR. As short a length of cable between units, as possible, is recommended. When using the JR. MONITOR with an SWR bridge/power meter (such as the DenTron W-2), insert the bridge between the tuner and transmitter.

Antennas can be connected to the JR. MONITOR in a variety of ways, depending on type of feedline employed. For COAX fed antennas, connect your antenna to the SO-239 connector marked COAX. For balanced (twin-lead) systems, connect one side of your feedline to either one of the balanced feed terminals, the other side of your feedline to the other balanced feed terminal.

NOTE: WHEN USING BALANCED FEED ANTENNA SYSTEMS, A JUMPER WIRE MUST BE INSTALLED BETWEEN ONE OF THE BALANCED FEED TERMINALS AND THE SINGLE WIRE TERMINAL. IF EXPERIENCING DIFFICULTY WHEN TUNING A RANDOM WIRE FOR 160 METERS, PLACE THE JUMPER ACROSS THE TERMINALS AS ABOVE. **CAUTION:** REMOVE THIS WIRE FOR OTHER FREQUENCIES ON SINGLE WIRE.

For random length antennas (at least 1/4 wave is recommended at the lowest operating frequency) connect your antenna directly to the single wire terminal.



Mobile Installation

Using the mobile mounting bracket provided by DenTron, mount your JR. MONITOR under your car dashboard (a metal dash will help accomplish suitable grounding, although it is not required). Run a ground lead (number 14 or larger gauge) from the tuner ground lug to the car body. Make this lead as short as possible, and be sure to scrape any paint or finish away from the area where you make your connection.

Any commercially available mobile antenna is suitable, using 50 ohm COAX between your antenna installation and the JR. MONITOR'S COAX output (SO-239). Consult the [ARRL Handbook](#) or [Bill Orr's Radio Handbook](#) for further information on both mobile installations and suppression of ignition noise.

When using a 108'' whip antenna in mobile applications, the JR. MONITOR is fully compatible from 40 to 10 Meters.

Operation

NOTE: IF AN SWR/POWER METER BRIDGE IS AVAILABLE, FOLLOW THESE INSTRUCTIONS (DENTRON W-2 WATTMETER RECOMMENDED.)

1. Set "Transmitter Matching" and "Antenna Matching" Controls to "5".
2. Listen on receiver for maximum band noise while turning inductance control for maximum noise.
(A is highest frequency, L is lowest frequency)
3. Feed enough power through the system to get a reading on the SWR bridge or wattmeter in the reflected position.
4. Rotate Inductance Control for a drop in SWR reflected reading.
5. Adjust "Transmitter Matching" and "Antenna Matching" control for minimum SWR.
6. Now apply full power and touch up "Transmitter Matching" control if necessary.

If a W-2, or other Wattmeter/SWR bridge is not available, set both capacitor controls at 5, turn the relative output potentiometer (on the rear panel) fully clockwise, viewed from the rear. Preset your controls according to the chart below.

BAND	FREQUENCY	TRANSMITTER MATCHING	INDUCTANCE	ANTENNA MATCHING
160 M	1.830	0	L	4
75 M	3.800	5	J	5
40 M	7.200	5	E	5
20 M	14.200	5	C	6
15 M	21.300	0	B	4
10 M	28.600	0	A	5

Insert a small amount of power and peak the antenna and transmitter matching controls according to the relative power output meter. Then try one tap above and below the starting inductance setting for maximum output on the relative power meter. Finally, peak your exciter for maximum output, and re-adjust the relative power output meter potentiometer for a mid-scale reading.

Antennas

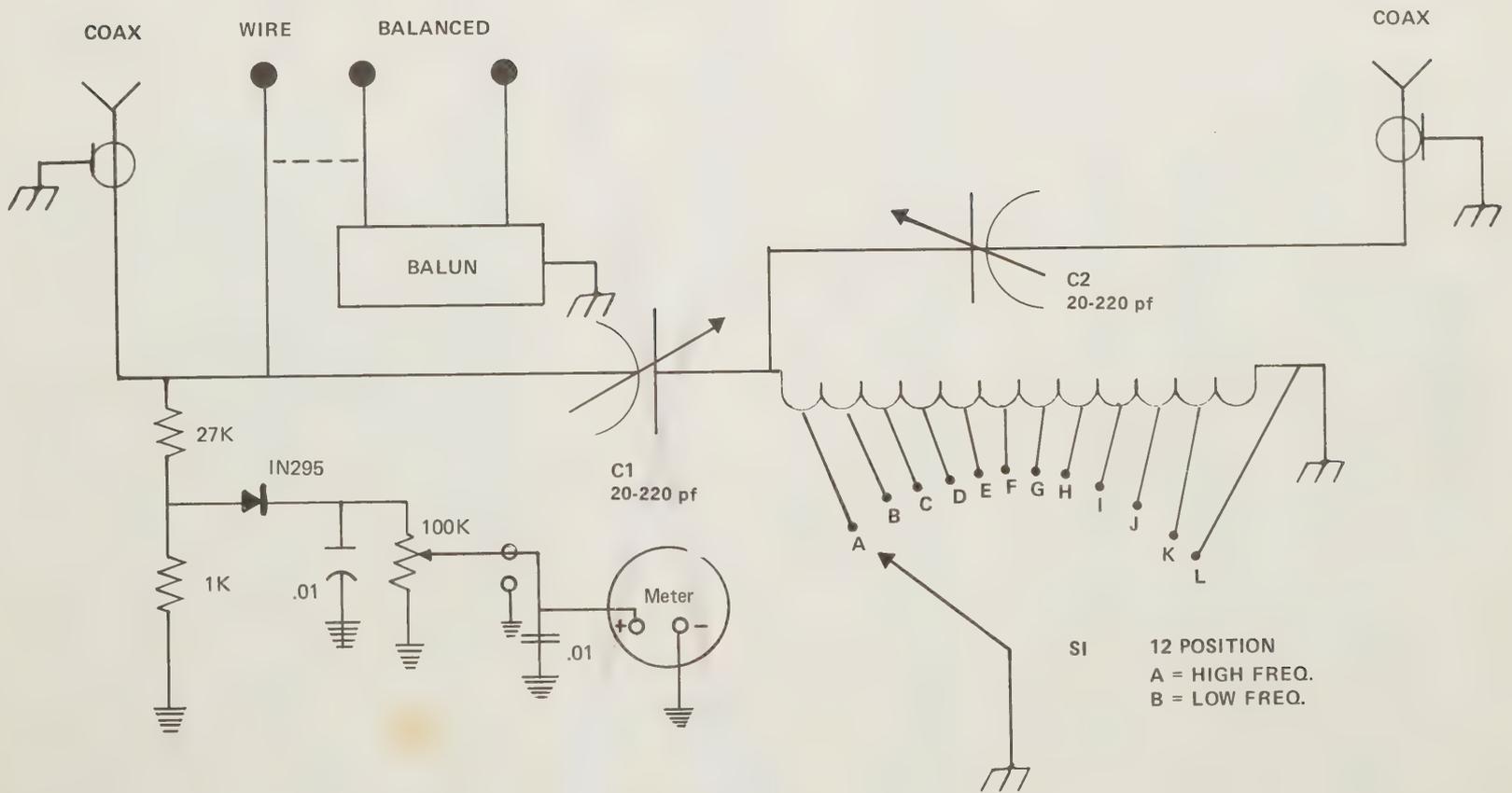
SINGLE WIRE FED SYSTEM: For best results DenTron recommends at least a 1/4 wave at the lowest operating frequency. See ARRL Handbook or Bill Orr's Radio Handbook for details. If a 1/4 wave length is impractical, use 1/8 wave as a minimum. In using random length antennas a good ground is most essential. Keep ground leads as short as possible and follow operating instructions for tune up.

BALANCED FEEDLINE: To operate with balanced feeders, connect a jumper wire from the single wire connector on the JR. MONITOR'S rear panel to either of the balanced feed connectors. The feedline then goes to each of the balanced feed terminals. See operating instructions for tune up.

COAX FED ANTENNAS: The JR. MONITOR is capable of matching COAX feedlines between 50 and 75 ohms. Be certain to solder the braid of your COAX cable to the connectors. See ARRL Handbook for details.

ANTENNA

XMITR



SI
12 POSITION
A = HIGH FREQ.
B = LOW FREQ.

Dentron

Limited Warranty

DenTron Radio is proud of the quality and workmanship of its communication equipment. If properly installed and operated in accordance with our instruction manual, it will give reliable performance. DenTron Radio extends to you as an owner of a new DenTron Radio Product the warranty set forth below:

For ninety (90) days from the date of original retail purchase, **DENTRON RADIO CO.** will either repair or replace, at its option, free of charge, any part or parts found to be defective in material or workmanship. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser.

This warranty will not apply to any part which has become inoperative due to misuse, excessive use, accident, neglect, improper maintenance, alterations, or unless the unit has been operated and maintained in accordance with the instructions furnished.

This warranty will not apply where the unit has been used commercially or when the unit has been used in conjunction with accessories not manufactured by **DENTRON RADIO CO.**

All implied warranties are limited in duration to ninety (90) days from the date of original retail purchase.

The provisions of this warranty specifically exclude any warranty or remedies for incidental or consequential damages.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

In order to obtain warranty service, send written notification to the following address: **DENTRON RADIO CO.**, Attn: Service Dept., 2100 Enterprise Parkway, Twinsburg, Ohio 44087.

Any written notification should include the model number of the unit, date and place of purchase, and a description of the defective part or condition. Do not return the unit or any parts unless requested to do so by **DENTRON RADIO CO.**

Although the return of the **DENTRON** Warranty Registration Card is not a condition precedent to warranty coverage and performance, the purchaser is encouraged to promptly return the Warranty Registration Card upon purchase in order to more easily facilitate the handling of any future service under these warranty provisions.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

DenTron
Radio Co., Inc.

2100 Enterprise Parkway
Twinsburg, Ohio 44087
(216) 425-3173