

MODEL 254 ANTENNA COUPLER

GENERAL

The Model 254 is an inductive/capacitive network used for matching unbalanced 50/75 ohm transmitter output impedances to a variety of loads, including balanced and unbalanced. The operating frequency range is 1.8 to 30 MHz. An antenna select switch is built-in that allows front panel selection of one of four antennas. The fourth antenna may be balanced, using the built-in balun, or unbalanced using the fourth coax connector. A fifth antenna select position by-passes the tuner. A reflected power meter is built-in and controlled from the front panel. A rear panel jack is provided to connect 12 vdc from an external source for meter illumination.

SPECIFICATIONS

Circuit:	"T" network
RF Power:	200 watts, cw and ssb. 100 watts carrier
Capacitor Voltage Rating:	1 kv
Inductor:	47 taps; 18 gauge, silver plated wire on 2" core
Input impedance:	50/75 ohms, unbalanced
Output:	Matches most loads, balanced or unbalanced. Maximum balanced is 600 ohms.
Frequency Range:	1.8 to 30 MHz
Size HWD:	3-3/8" x 8-5/8" x 7"
Weight:	4 lbs, 1 oz

INSTALLATION:

NOTE: Position the coupler as far away from transmitter as practical. This will minimize the possibility of RF feedback into the transmitter.

1. Connect transmitter output to RF input on the rear panel of the coupler, using RG-8 or RG-58 coax.
2. Connect antennas 1, 2 and 3 to the output connectors, so marked. To connect an antenna to the fourth position, follow the instructions screened on rear panel. This may be a coax fed antenna, balanced feeders or a single wire. Note the jumper required when using a balanced feedline.
3. Connect a lead from Earth ground to the terminal marked GND.

WARNING: When using a single wire antenna or an antenna with balanced feeders, use care to route the wire clear of station equipment and any other metal objects. Care must also be taken to keep people and pets away from the open wire(s) as high voltage RF energy will be present when transmitting.

OPERATION

ANTENNA SELECT SWITCH

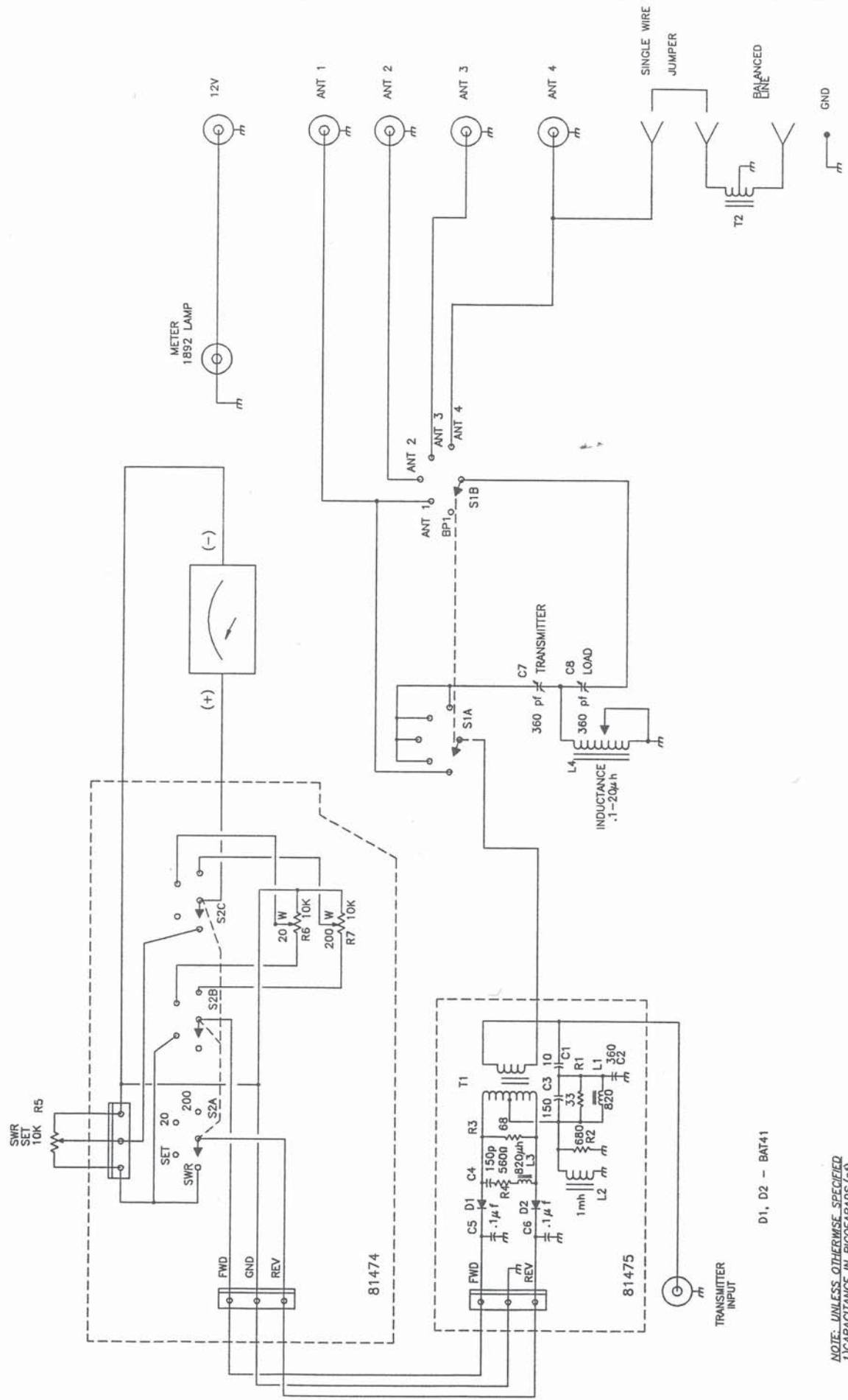
- BP** By-passes the tuner and connects antenna one position to the transmitter.
- ANT 1** Connects antenna one using the tuner.
- ANT 2 and 3** Connects antennas connected to these coax outputs, using the tuner.
- ANT 4** Connects this position to the transmitter, using the tuner. This position can be used with a coax fed antenna or one using balanced feeders or a single wire antenna. Follow hook-up instructions screened on the rear panel. Never connect more than one antenna to this position as serious damage to the tuner circuit can result.

TUNE-UP PROCEDURE

1. Select correct antenna. Set **INDUCTANCE**, **TRANSMITTER MATCH** and **LOAD MATCH** controls to mid-range.
2. Use low power. 20 watts is adequate. Set meter switch to **SWR** and adjust meter reading to about half scale.
3. Adjust **INDUCTANCE** for lowest null. Adjust **TRANSMITTER** and **LOAD MATCH** controls for minimum **SWR** reading. There is interaction between the controls so alternate adjustments will continue to reduce **SWR** reading.
4. To calibrate the **SWR** reading, turn meter switch to **SET** and turn **SWR SET** control for a full scale reading on the meter. Adjustment of the tuner for an **SWR** of 1.5:1 or less results in maximum efficiency.
5. After tune-up on any specific frequency with a given antenna, log the settings. They will repeat very closely when that combination is used again.

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NOTE: UNLESS OTHERWISE SPECIFIED
 1) CAPACITANCE IN PICOFARADS (pF)
 2) INDUCTANCE IN MICRO-HENRYS (μH)
 3) RESISTANCE IN OHMS ±5% 1/4W

D1, D2 - BAT41

A B C D E F G H I J

8

7

6

5

4

3

2

1

TEN-TEC, Inc.
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CUSTOMER SERVICE TELEPHONE
615-428-0364

LIMITED WARRANTY AND SERVICE POLICY, U.S.A.

TEN-TEC, Inc. warrants this product to be free from defects in material and workmanship for a period of one year from the date of purchase, under these conditions:

1. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL OWNER. It is important that the warranty registration card be sent to us promptly to establish you as the owner of record. This will also insure that any bulletins pertaining to this equipment will be sent to you.
2. READ THE MANUAL THOROUGHLY. This warranty does not cover damage resulting from improper operation. Developing a thorough understanding of this equipment is your responsibility.
3. IF TROUBLE DEVELOPS we recommend that you contact our customer service group direct. The selling dealer is not obligated by us to perform service in or out of warranty. It has been our experience that factory direct service is expeditious and usually results in less down-time on the equipment. Some dealers do offer warranty service and of course, have our complete support.
4. WE ENCOURAGE SELF HELP. Taking the covers off does not void the warranty. In many cases our customer service technicians, with your help, can identify a faulty circuit board. In these cases we will send you a replacement board which you can change out. This will be shipped on a 30 day memo billing and when the defective board is returned, we will issue credit.
5. EQUIPMENT RETURNED TO THE FACTORY must be properly packaged, preferably in the original shipping carton. You pay the freight to us and we prepay surface freight back to you.
6. EXCLUSIONS. This warranty does not cover damage resulting from misuse, lightning, excess voltages, polarity errors or damage resulting from modifications not recommended or approved by Ten-Tec. In the event of transportation damage a claim must be filed with the carrier. Under no circumstances is Ten-Tec liable for consequential damages to persons or property caused by the use of this equipment.
7. TEN-TEC RESERVES the right to make design changes without any obligation to modify equipment previously manufactured.
8. THIS WARRANTY is given in lieu of any other warranty, expressed or implied.

SERVICE OUTSIDE OF THE U.S.A.

Many of our dealers provide warranty service on the equipment they sell. Many of them also provide out of warranty service on all equipment whether they sold it or not. If your dealer does not provide service or is not conveniently located, follow the procedure outlined above. Equipment returned to us will be given the same attention as domestic customers but all freight expense, customs and broker fees will be paid by you.