

## GENERAL OPERATING INSTRUCTIONS

### **CAUTION:**

Before operating this transceiver, you are required by law to read and thoroughly understand part 95 of the F.C.C. rules and regulations.

Check to see if the proper connections have been made on power cable, antenna system and microphone and that the correct cables have been used. Be sure that the transceiver is adequately grounded (if not mounted directly to a metal surface).

To transmit, press the push-to-talk switch and hold it down. Speak directly into microphone. Release this switch to receive. Actual receive and transmitting power should be monitored by watching the SIGNAL-TRANSMIT POWER METER and using the switch provided for this purpose.

Select the channel on which you wish to operate by rotating the Channel Selector Switch to the desired channel.

The microphone should be held approximately 3 to 4 inches away from your mouth. Use a normal speaking voice. Speak slowly and clearly. Talking louder does not increase transmitting power and will only cause distortion. You will notice the SIGNAL-TRANSMIT POWER meter moving as you transmit. This indicates that you are transmitting. Always release the microphone switch when you complete your transmission.

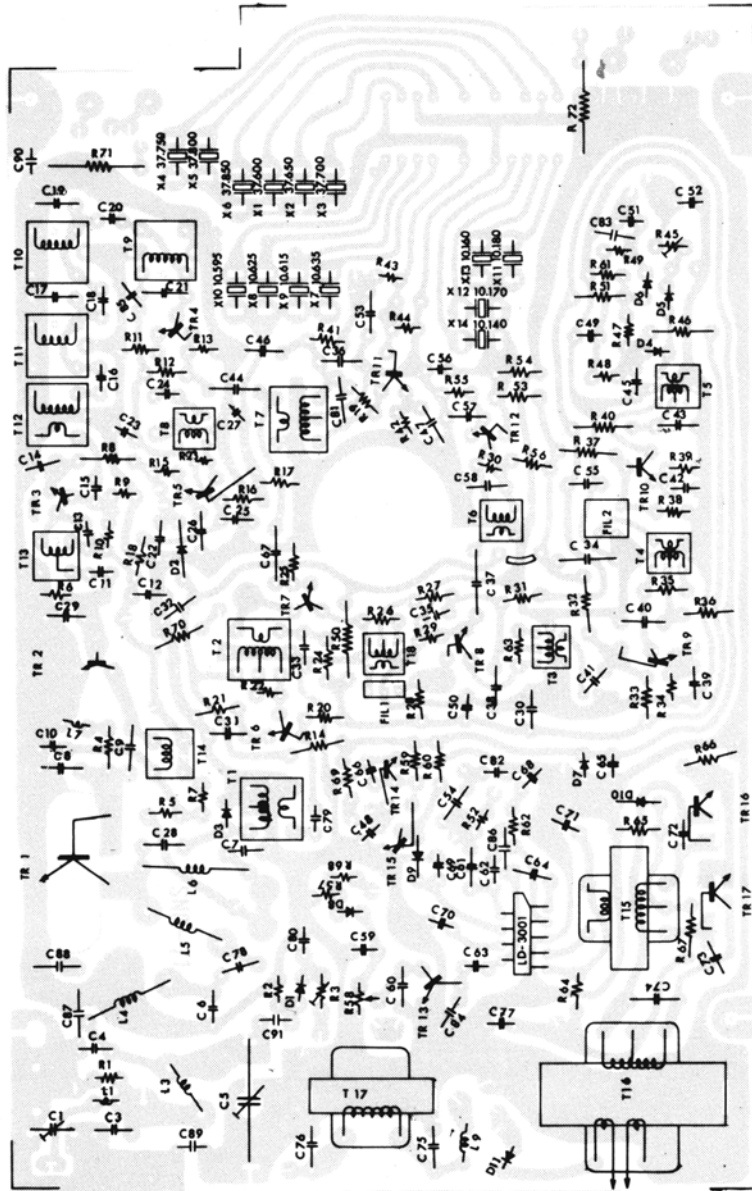
## SERVICING YOUR TRANSCEIVER

The technical information, diagrams and charts provided in this manual are supplied for the use of a qualified holder of a first or second class radiotelephone license in servicing this transceiver. It is the users responsibility to see that this unit is operating at all times in accordance with the F.C.C. citizens radio service regulation.

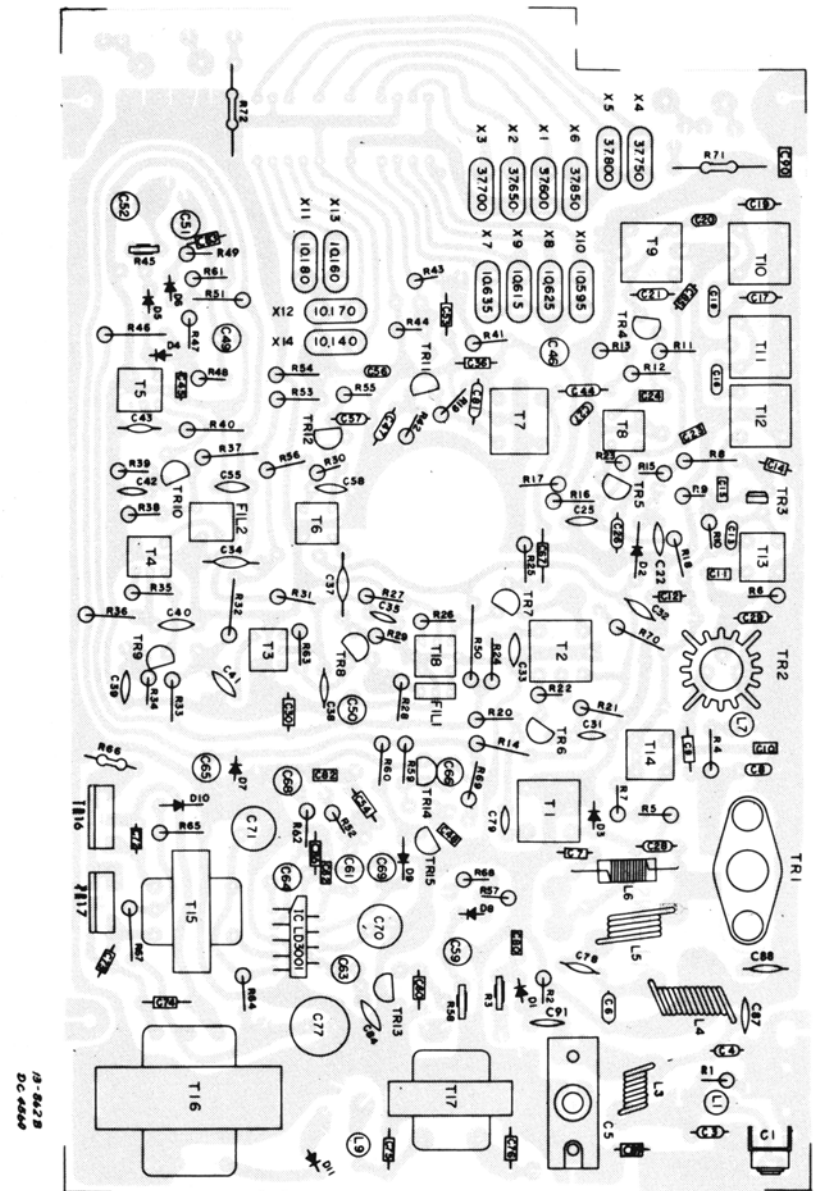
If you install your own transceiver, do not attempt to make any transmitter tuning adjustments are prohibited by the F.C.C. unless you hold or are in the presence and under the supervision of a first or second class radiotelephone licensed person. A Citizens Band or Amateur license is not sufficient.

# MODEL 13-862B PARTS LAYOUT

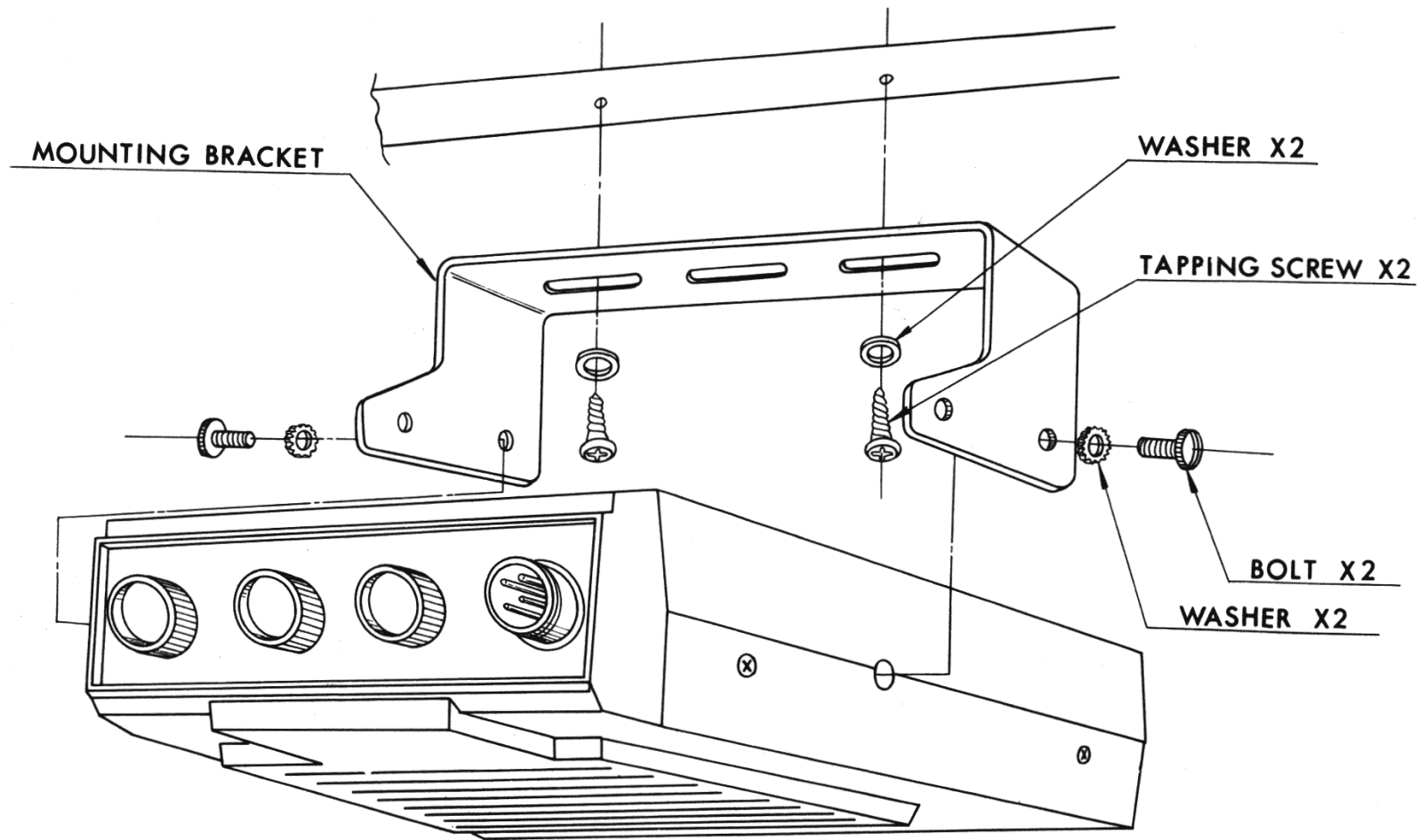
BACK VIEW



FRONT VIEW



# MOUNTING INSTRUCTIONS



## SPECIFICATIONS FOR 13-862B

Circuitry : 17-transistor, 1 IC  
and 11 diode

**Receiver Section :**

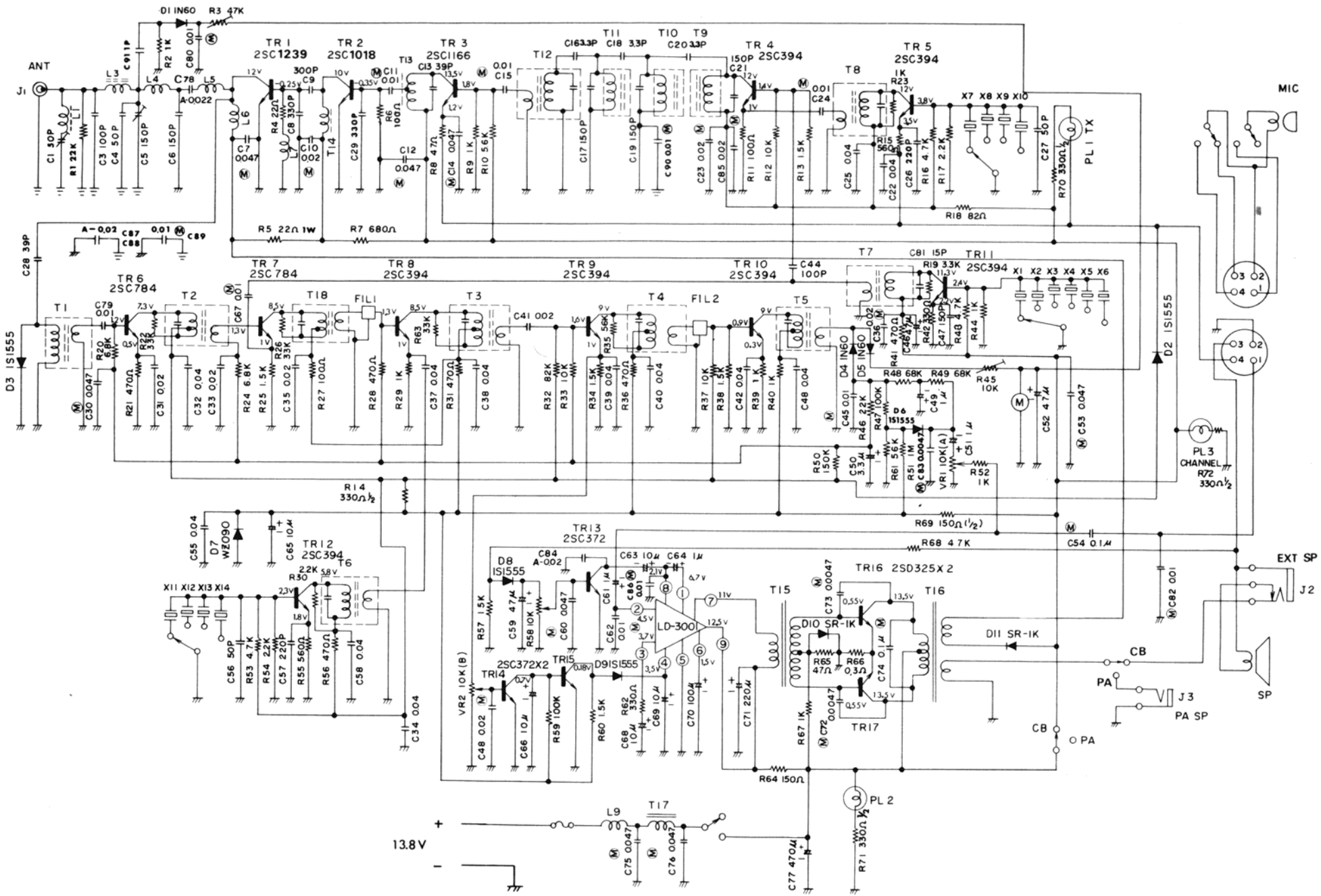
|   |   |              |
|---|---|--------------|
| Sensitivity at 10 db S/N                        | : | 1 $\mu$ V    |
| Image Rejection Ratio                           | : | 40 db        |
| 1st IF Rejection Ratio at 10.635 MHz            | : | 45 db        |
| 2nd IF Rejection Ratio at 455 KHz               | : | 100 db       |
| Squelch sensitivity at maximum                  | : | 300 $\mu$ V  |
| Squelch sensitivity at threshold                | : | 0.5 $\mu$ V  |
| A.G.C. (input 5,000 $\mu$ V, output 10 db down) | : | 75 db        |
| IF Response at 6 db down bandwidth              | : | 8 KHz        |
| Adjacent channel selectivity                    | : | 35 db        |
| Audio output power at maximum (input 60 db)     | : | 4W           |
| Audio output power at 10% distortion            | : | 2.8W         |
| Distortion at input 60 db                       | : | 10%          |
| Audio fidelity at 1,000 Hz 0 db (6 db down)     | : | 300–2,000 Hz |
| Current drain at no signal                      | : | 200 mA       |
| Current drain at maximum output power           | : | 900 mA       |

**Transmitter Section:**

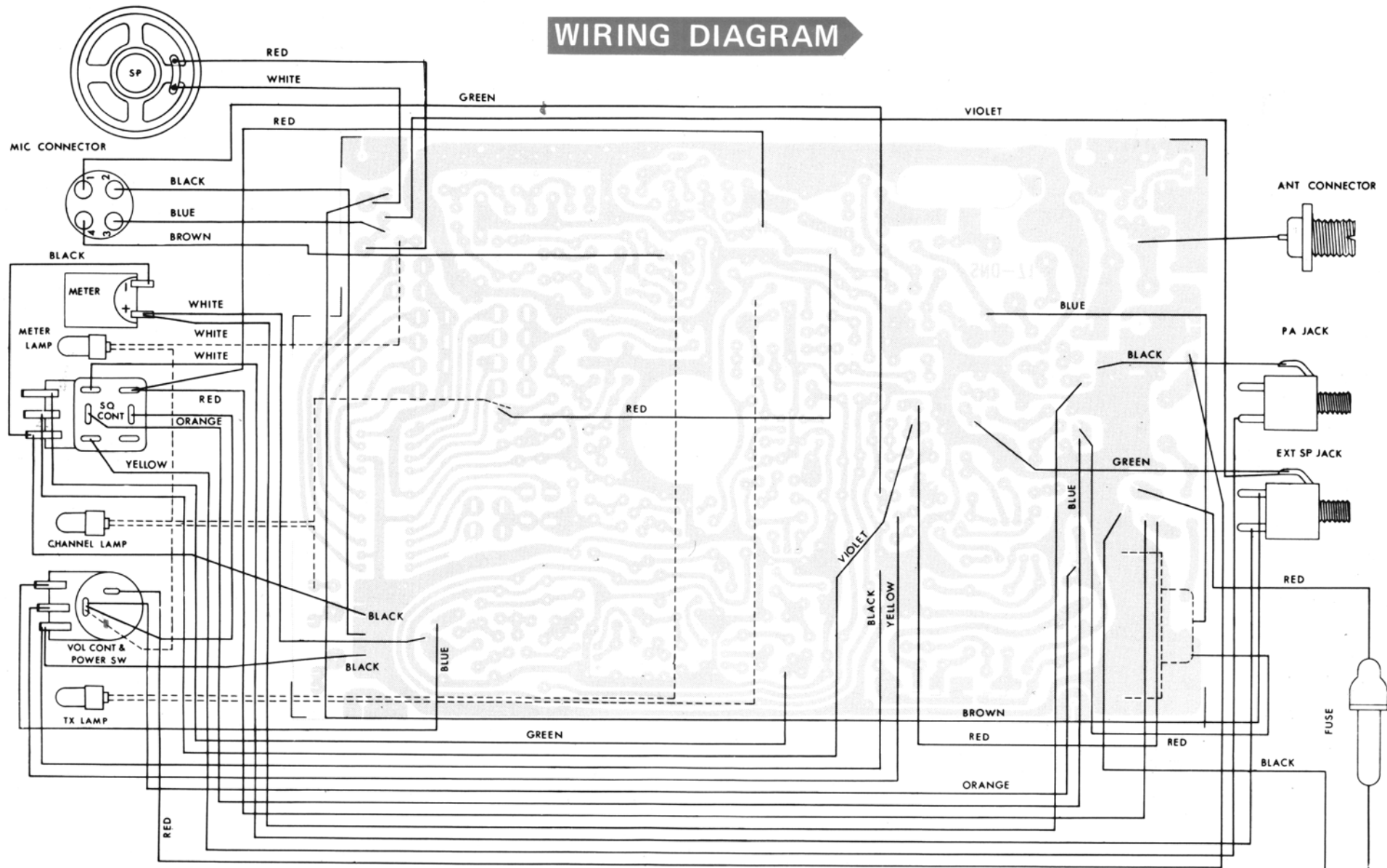
|                                     |   |          |
|-------------------------------------|---|----------|
| RF output power                     | : | 4W       |
| Modulation capability               | : | 90%      |
| Frequency tolerance                 | : | 0.005%   |
| Spurious ratio                      | : | 50 db    |
| Current drain at no modulation      | : | 800 mA   |
| Current drain at maximum modulation | : | 1,300 mA |

**Measurement Condition:**

|                      |   |          |
|----------------------|---|----------|
| Audio output power   | : | 0.5W     |
| Audio output load    | : | 8 ohm    |
| Modulation frequency | : | 1,000 Hz |
| Modulation           | : | 30%      |
| Antenna impedance    | : | 50 ohm   |
| Power source         | : | 13.8V DC |



# WIRING DIAGRAM



# CRYSTAL FREQUENCY CHART

| XTAL    | CHANNEL |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---------|---------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|         | 1       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| MASTER  |         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 37. 600 | ○       | ○ | ○ | ○ |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 37. 650 |         |   |   |   | ○ | ○ | ○ | ○ |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 37. 700 |         |   |   |   |   |   |   |   | ○ | ○  | ○  | ○  |    |    |    |    |    |    |    |    |    |    |    |
| 37. 750 |         |   |   |   |   |   |   |   |   |    |    |    | ○  | ○  | ○  | ○  |    |    |    |    |    |    |    |
| 37. 800 |         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | ○  | ○  | ○  | ○  |    |    |    |
| 37. 850 |         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ○  | ○  | ○  |
| XMTR    |         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10. 595 |         |   |   | ○ |   |   |   | ○ |   |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    | ○  |
| 10. 615 |         |   | ○ |   |   |   | ○ |   |   |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    |    |    |
| 10. 625 |         | ○ |   |   |   | ○ |   |   |   | ○  |    |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |
| 10. 635 | ○       |   |   |   | ○ |   |   |   | ○ |    |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    |
| RCVR    |         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10. 140 |         |   |   | ○ |   |   |   | ○ |   |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    | ○  |
| 10. 160 |         |   | ○ |   |   |   | ○ |   |   |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    |    |    |
| 10. 170 |         | ○ |   |   |   | ○ |   |   |   | ○  |    |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |
| 10. 180 | ○       |   |   |   | ○ |   |   |   | ○ |    |    |    | ○  |    |    |    | ○  |    |    |    | ○  |    |    |



## LIMITED WARRANTY

Midland International Corporation warrants each new Midland product to be free from defects in material and workmanship under normal use and service for a period of 90 days after delivery to the ultimate user and will replace or repair the product at our option, at no charge should it become defective and which our examination shall disclose to be defective and under warranty.

This warranty shall not apply to any Midland product which has been subject to misuse, neglect, accident, incorrect wiring not of our own installation, or to use in violation or instructions furnished by us, nor extended to units which have been repaired or altered outside of our factory.

This warranty does not cover carrying cases, earphones, batteries, antenna, broken or cracked cabinets, or any other accessory used in connection with this product.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Sales receipt must accompany product to validate the date of purchase.



## Communications Division

P.O. Box 19032, Kansas City, Missouri 64141  
Phone: 816/474-5080 • Telex: 42-6344  
Cable Address: MIDELEC-NKC

Copyright 1975, Communications Division,  
Midland International Corporation,  
North Kansas City, Missouri 64116  
Made Exclusively for Midland International Corporation in Japan