

S/B/P-RF METER:

This meter can be used in 3-ways.

- (a) During reception incoming signal will cause the pointer to deflect leftward on the S area, giving an indication of relative signal strength of the received signal.
- (b) In receive mode of operation with no incoming signal the meter pointer is in blue area battery voltage is normal. When the pointer is outside (left side) the RED area, battery voltage is low and batteries should be replaced (or recharged if rechargeable batteries are used).
- (c) During transmission the pointer will swing in to the blue area, indicating the RF power is being radiated from the antenna.

CHECK LITE:

A "Check Lite" button is located on the control panel of model 13-861. When the unit is operated as a portable, the "check lite" acts as temporary lighting for the channel selector and meter. This is designed to save battery consumption. When the mobile DC power cord is used, channel selector and meter are constantly illuminated. Battery power is automatically disconnected when the mobile DC power cord is connected.

CHARGE JACK:

This jack allows charging of rechargeable batteries without removing the batteries from the carry case.

CAUTION: Do not try to charge the conventional non-rechargeable batteries. Use only nickel-cadmium batteries for recharging. Carbon-zinc, mercury, and alkaline batteries may be used to operate the transceiver, but do not attempt to recharge these types because leakage or battery damage may occur. A regulated battery charger and not an AC power supply should be used for recharging purposes.

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).

For portable use, open the cover of carry case. The battery compartment is designed to accept 10 pieces of standard "AA" size penlight batteries. However, when using conventional nonrechargeable 1.5 volt batteries, insert 8 penlight batteries (and two dummy battery spacer supplied with the unit), since the unit is designed to operate at 12V DC. Insert each battery into the compartment as illustrated on the compartment bottom, carefully observing polarity. Check to see that batteries are firmly seated.

Extend the telescopic antenna to its full length for maximum communication range.

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-BATTERY-TRANSMIT POWER METER. Select the channel on which you wish to operate by rotating the Channel Selector Switch to the desired channel.

The speaker/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-BATTERY-TRANSMIT POWER** meter moving as you transmit. This indicates that you are transmitting. Always release the microphone switch when you complete your transmission.

NOTE:

For best transmission and reception, the antenna should be held in vertical position.

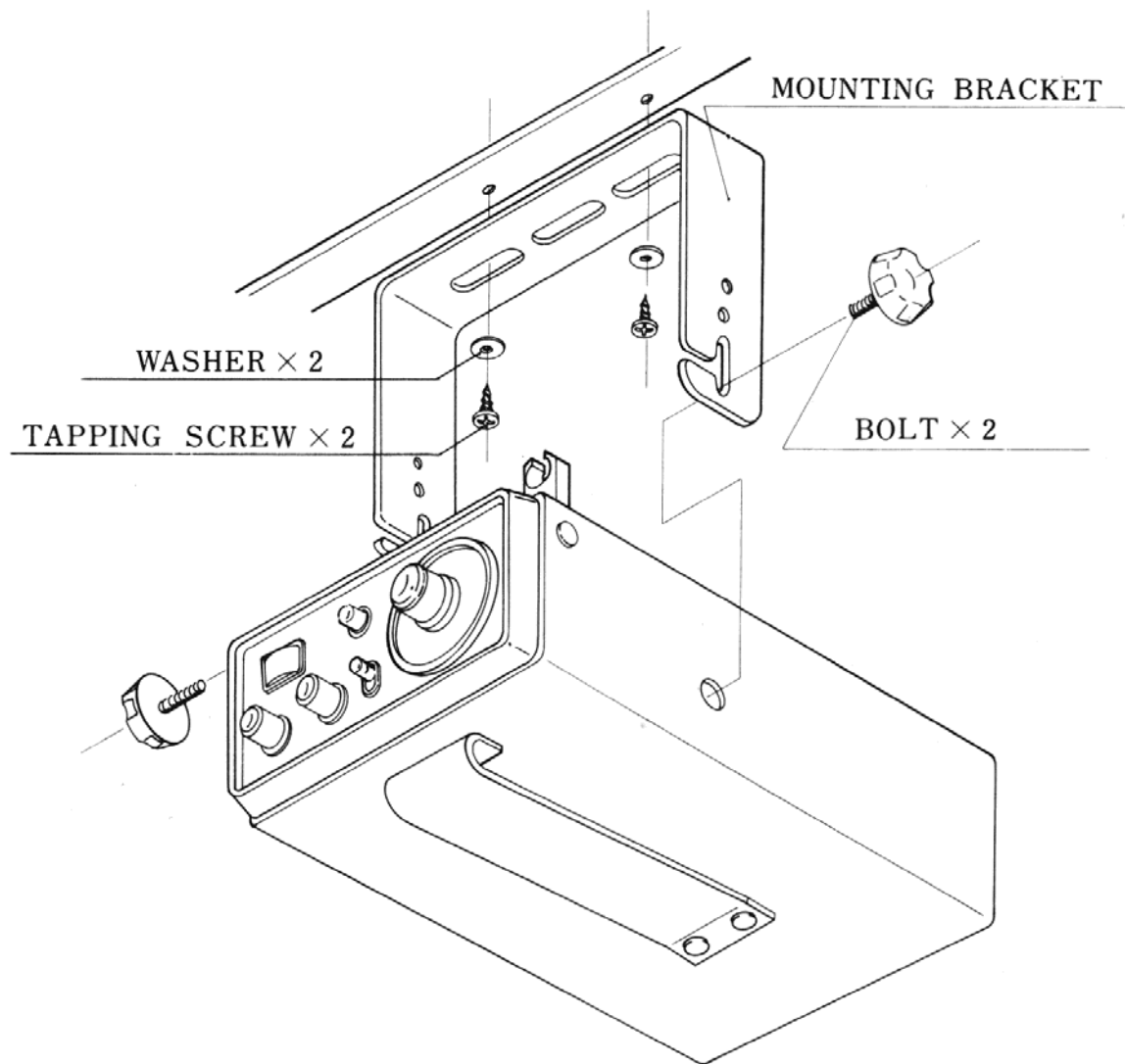
SERVICING YOUR TRANSCEIVER

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.

When service is performed by an authorized and licensed person, care must be taken in the replacement of parts to use only authorized parts, in order not to void the type acceptance of this unit.

MOUNTING INSTRUCTIONS



SPECIFICATIONS FOR 13-861

GENERAL

Circuitry: 19 transistors, 2 squelch transistors, 9 diodes, 1 Zener diode

Frequency Control: $\pm 0.005\%$ crystal

Channels: 23, all supplied

Controls: On/off/volume, variable squelch, channel selector, hi/lo power switch, push-to-talk (on speaker/mike), "Check Lite" button

Jacks and Connections: Mobile antenna, mobile power, external power (co-axial), battery charger (in case), external speaker, universal portable antenna

Power Sources: 13.8 volts DC (mobile) positive or negative ground; 12 volts DC (portable)

Unit Size: 2" h. x 4-3/8" w. x 6-3/4" d.

Overall Size (In Case): 3-1/4" h. x 4-5/8" w. x 7-5/8" d.

Unit Weight: 3-1/4 lbs.

Accessories Included: Texon carry case with removable strap and shoulder pad, battery compartment and connector, battery charger jack, belt loop, metal microphone clip. Removable universal mount, center coil loaded telescopic antenna. Mobile mounting bracket.

RECEIVER

Receiving System: Dual conversion superheterodyne with tune RF, AGC, built-in ANL

Sensitivity: $0.5\mu\text{V}$ for 10 db (S+N)/N

Selectivity: 8 KHz @ 6 db down

Spurious Rejection: More than 40 db

Audio Output: 2.8 watts

Squelch Range: .5-300 μV

Intermediate Frequencies: 1st IF: 11.275 MHz
2nd IF: 455 KHz

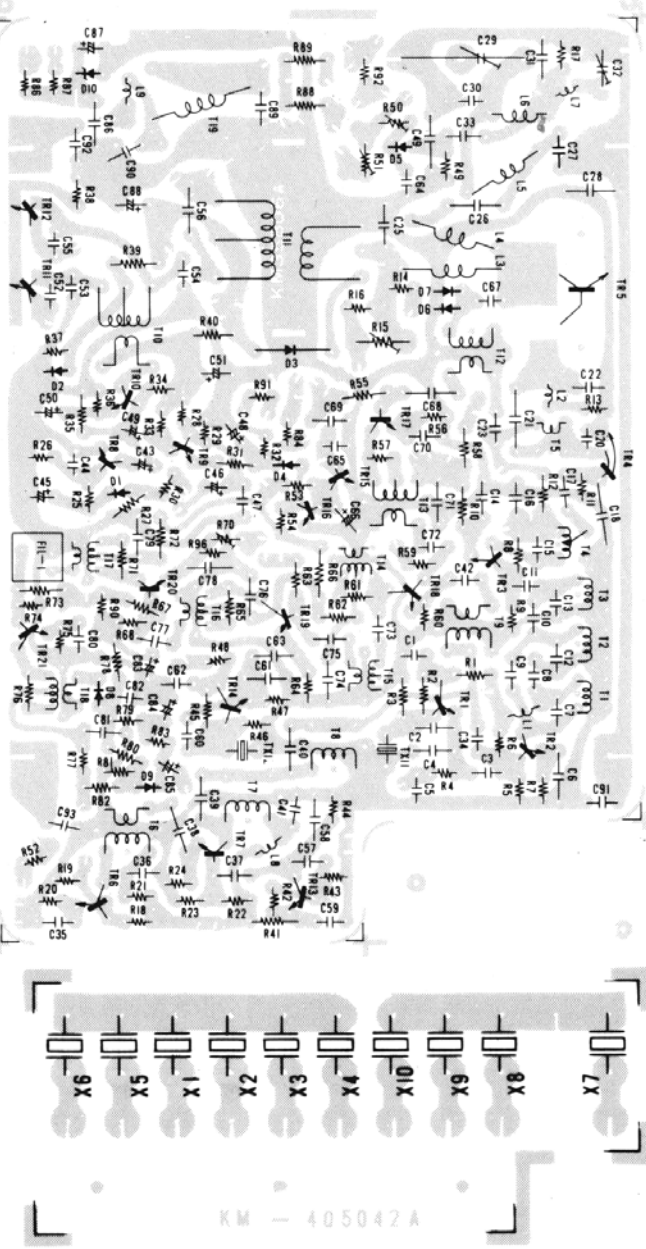
TRANSMITTER

Modulation: High level

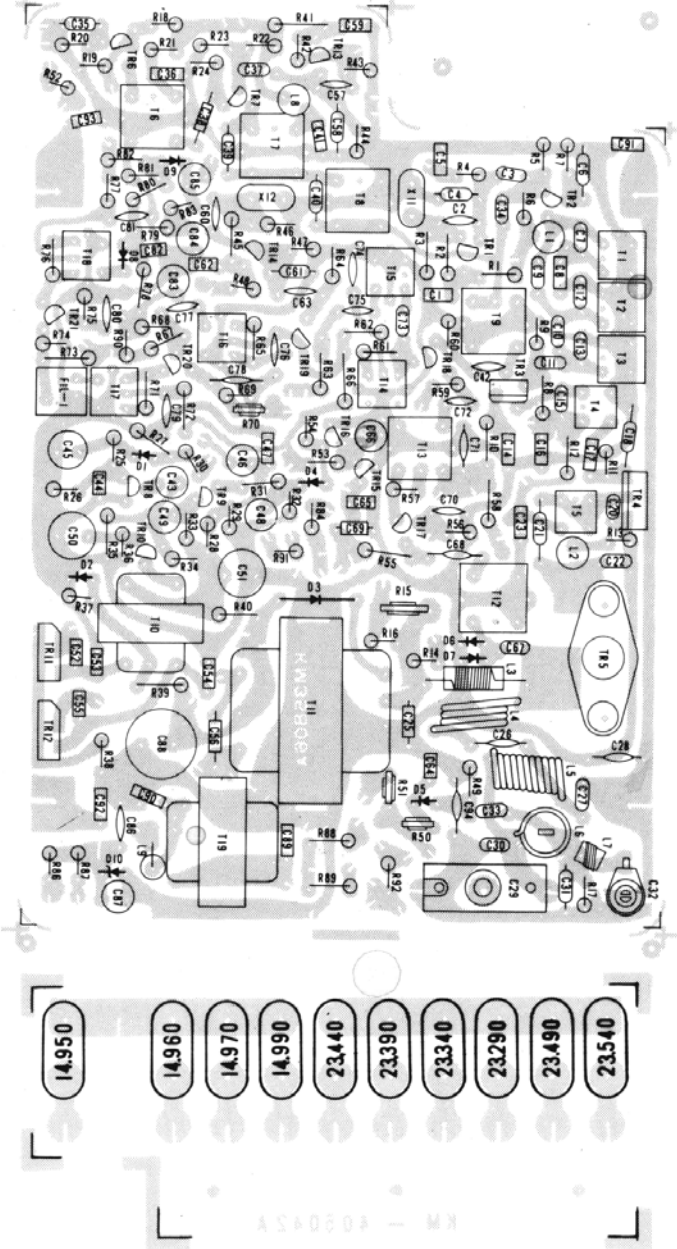
RF Output Power: Mobile: 4 watts
Portable: hi - 3 watts
lo - 1 watts

MODEL 13-861 PARTS LAYOUT

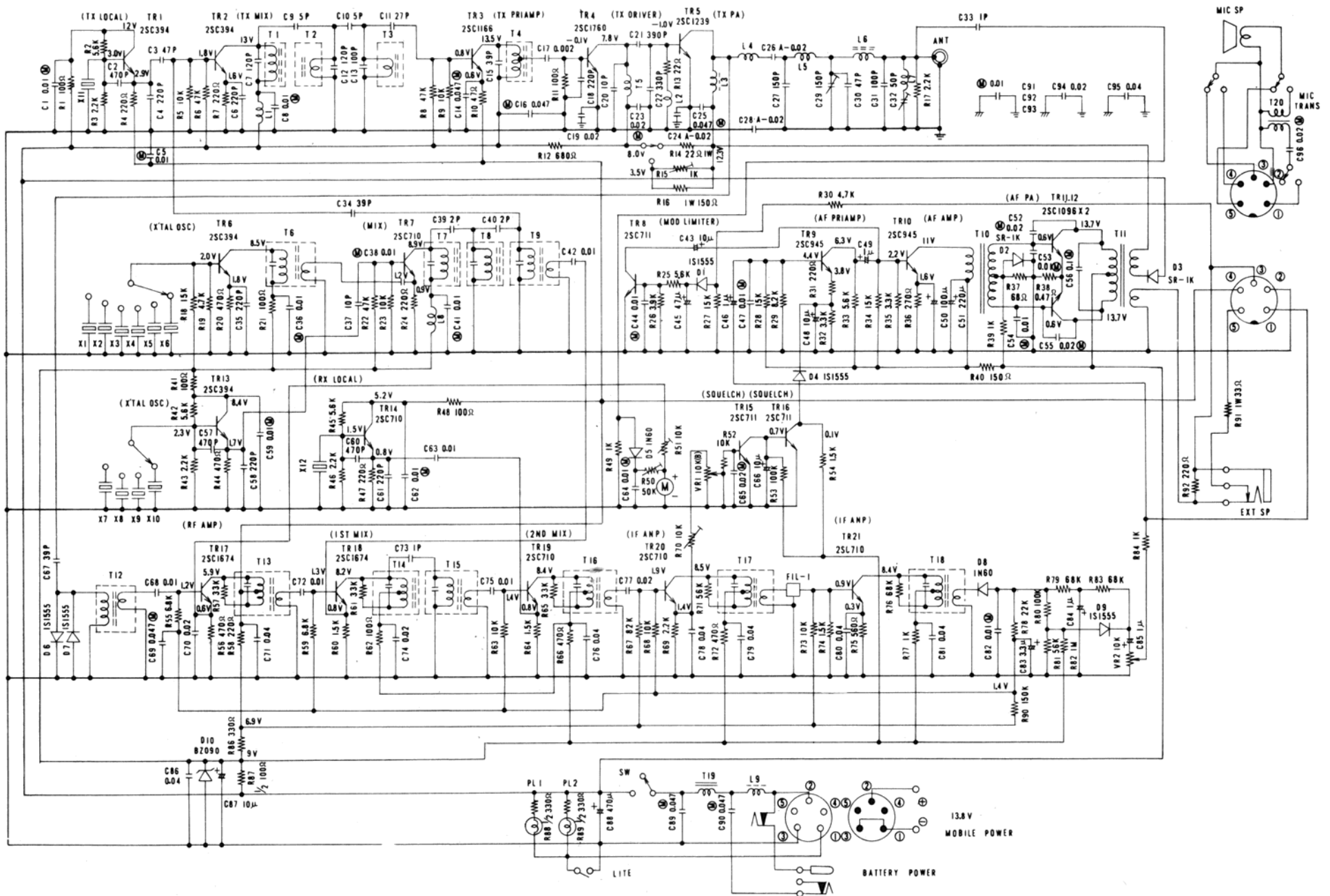
BACK VIEW



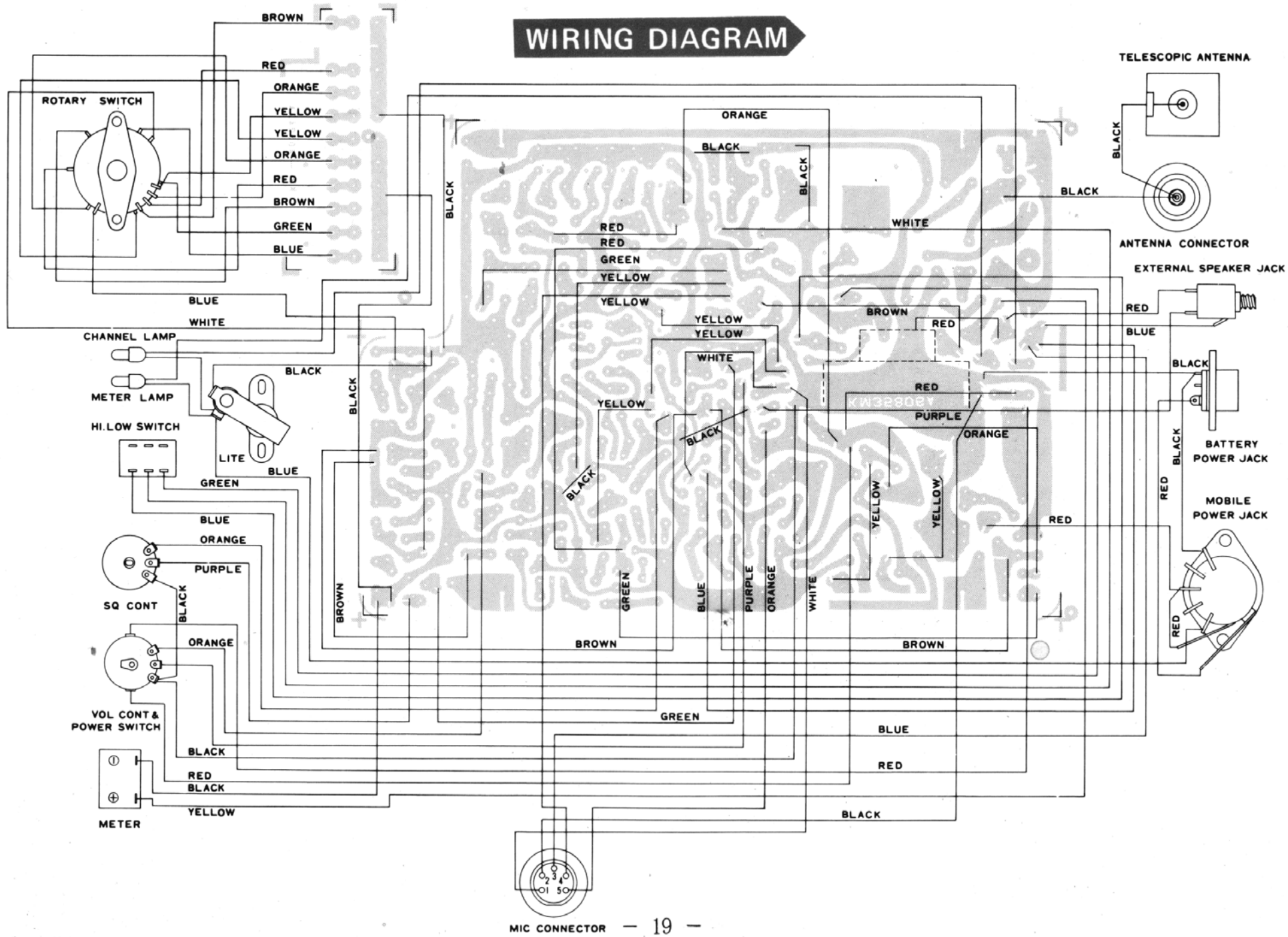
FRONT VIEW



MODEL 13-861 SCHEMATIC DIAGRAM



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
MASTER1																							
23.290	○	○	○	○																			
23.340					○	○	○	○															
23.390									○	○	○	○											
23.440													○	○	○	○							
23.490																	○	○	○	○			
23.540																					○	○	○
MASTER2																							
14.950	○				○				○				○				○				○		
14.960		○				○				○				○				○				○	
14.970			○				○				○				○				○				
14.990				○				○				○				○				○			○
XMTR																							
11.275	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
RCVR																							
11.730	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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.



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