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Midland 76-863 Owner's Manual

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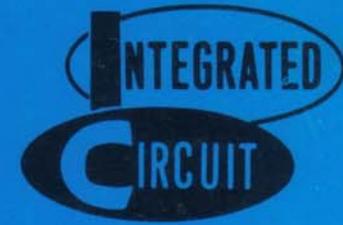
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MIDLAND
INTERNATIONAL[®]



MODEL 76-863

40-CHANNEL BASE/MOBILE TRANSCEIVER

OWNER'S GUIDE





MODEL 76-863

For your protection and convenience the space below is provided for you to record the serial number of this product. The model number and serial number are located on the rear of the cabinet. After recording this number, keep this record for your future reference.

Serial Number _____

FEDERAL COMMUNICATIONS COMMISSION'S REQUIREMENTS

Your new Midland 76-863 is a combination receiver-transmitter designed and built for licensed Class D operation on any of the 40 frequencies designated for citizens band use by the Federal Communications Commission. You are required to read and understand Part 95 of the F.C.C. rules and regulations prior to operation of this unit. You are also required to complete F.C.C. form 505 and submit it to the FCC, GETTYSBURG, PA. 17326 in order to receive your license to operate this unit. F.C.C. regulations will be violated if you transmit with this unit **without complying with procedures explained on F.C.C. temporary license Form 555-B. You may use Form 555-B as a temporary permit while your regular Form 505 application is being processed by the F.C.C. Both Forms are packed with the transceiver along with a copy of part 95 regulations for your use and convenience.**

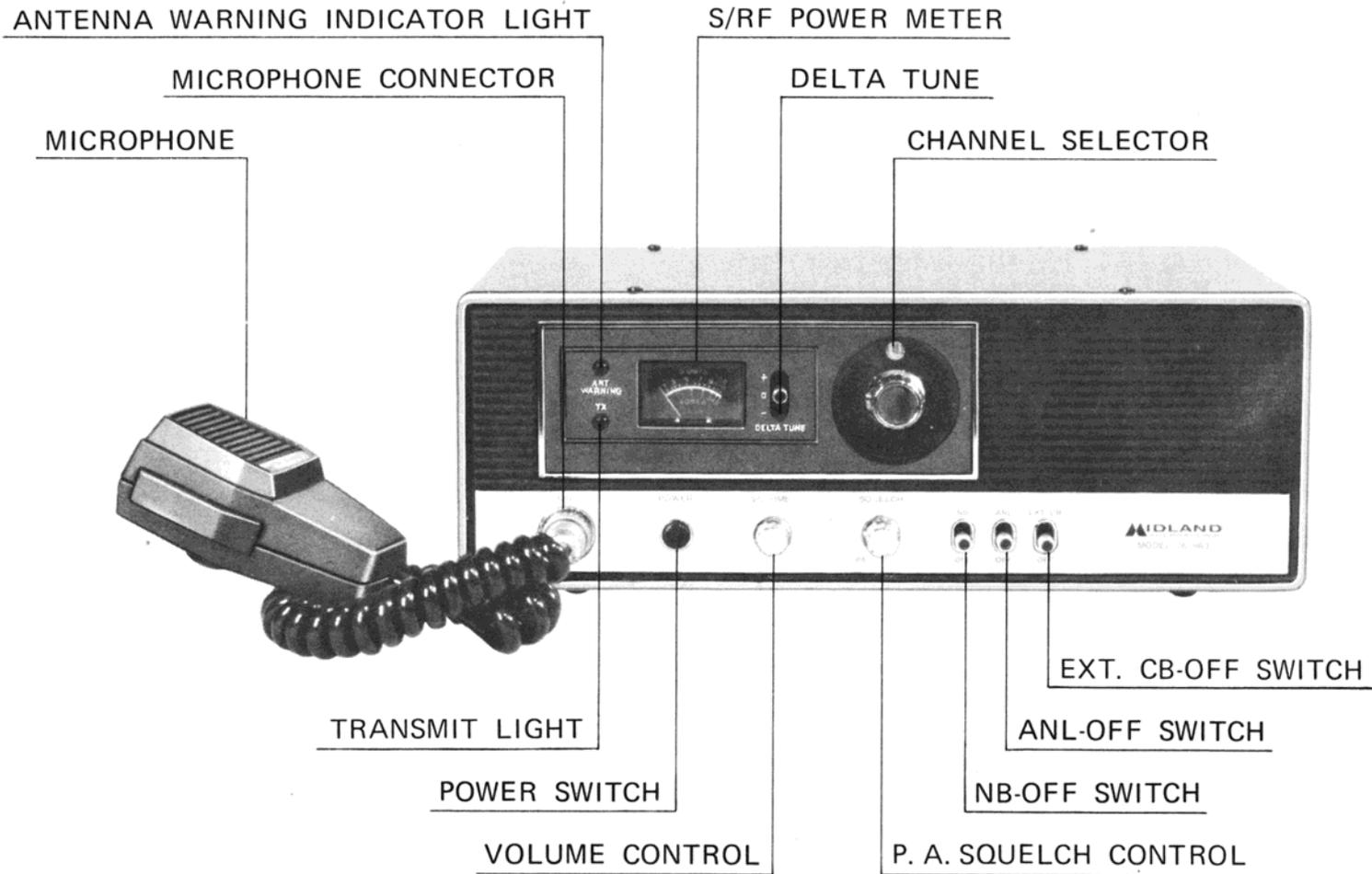
NOTE: The technical information, diagrams, and charts provided in this manual are supplied for the use of a qualified holder of a first or second class radiotelephone license in servicing this transceiver. It is the user's responsibility to see that this unit is operating at all times in accordance with the F.C.C. Citizens Radio Service regulations.

If you install or service your own transceiver, do not attempt to make any transmitter tuning adjustment. Transmitter adjustments are prohibited by the F.C.C. unless you hold a first or second class radiotelephone license or are in the presence of a person holding such a license. 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 model.

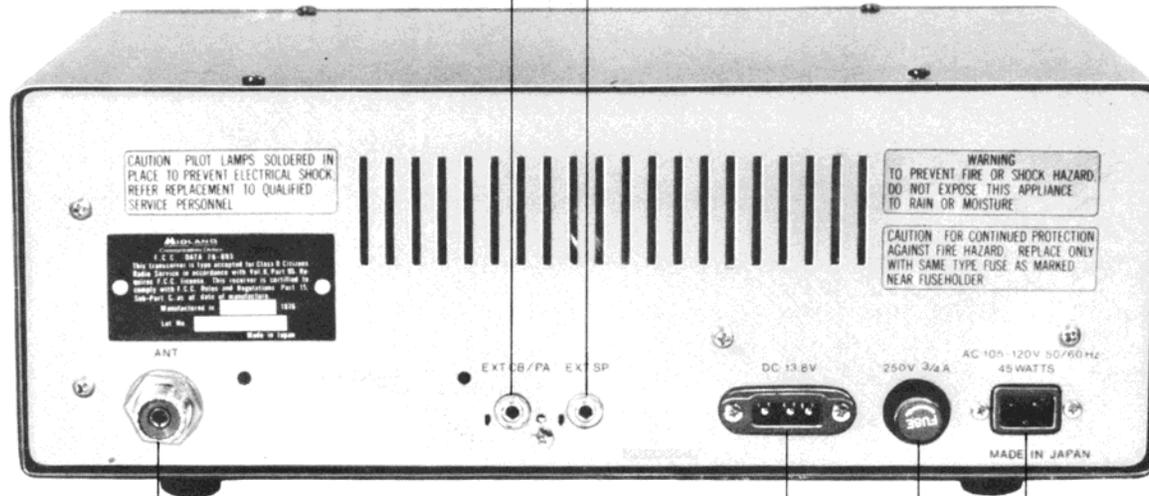
Midland International Corporation, Communications Division, hereby certifies that this unit has been designed, manufactured and F.C.C. type accepted in accordance with Part 95 and Part 15, Sub-part C of the current F.C.C. rules and regulations as of the date of manufacture.

OPERATION OF CONTROLS



EXT. CB/PA SPEAKER JACK

EXT. SPEAKER JACK



ANTENNA CONNECTOR

DC POWER CONNECTOR

FUSE (3/4A)

AC POWER CONNECTOR

OWNER'S GUIDE

Your 76-863 is a versatile, professional quality transceiver and we suggest that you read this Owner's Guide carefully before operation so that you may receive full benefit from its many features.

WARNING: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

OPERATING CONTROLS, CONNECTORS AND THEIR FUNCTIONS

POWER SWITCH

This turns the power on or off.

VOLUME CONTROL

This controls the sound output from the built-in or external speaker when receiving or from the public address (PA) speaker connected to the PA jack on the rear panel. The volume control does not affect transmitting output.

ANL-OFF SWITCH

An Automatic Noise Limiter (ANL) circuit is provided for reducing undesirable noise. To operate the ANL circuit, place the switch in the ANL position. To cut off the circuit, place it in the OFF position.

NB-OFF SWITCH

The NB (Noise Blanker) is a circuit designed to reduce impulse noises such as ignition noise from vehicles, etc., without significantly affecting the basic sensitivity of the receiver.

PA-SQUELCH CONTROL

Your Model 76-863 has been equipped with a PA (Public Address) amplifier system. Placing the squelch control in the PA (fully counter-clockwise) position actuates the PA system. Press the Push-to-Talk button on the microphone and speak at a normal tone of voice, then your voice will be heard from the PA speaker connected to the EXT. CB/PA jack on the rear panel.

For regular 2-way communications, this control must be placed in the normal position (other than PA position).

Turning the squelch control clockwise quiets the receiver when signals are not being received and allows a quiet standby operation. It functions only in the receive mode and does not affect the receiver volume when signals are being received.

To adjust, when no signals are present, rotate the squelch control clockwise until the receiver is quieted. Incoming signals will automatically release the squelch. Careful adjustment is necessary as a setting too far to the right will not allow weaker signals to release the squelch.

EXT. CB-OFF SWITCH

This switch, when placed in EXT. CB position, enables you to monitor CB calls through the PA speaker connected to the EXT. CB/PA jack on the rear panel. However, with the switch placed in EXT. CB position, the built-in speaker (or external speaker) will be automatically cut off and no sound will be obtained from these speakers.

This feature is particularly useful should you have your 76-863 station set in a bedroom or den but wish to hear an incoming call from another location (i.e. basement, patio, etc). When an incoming call is heard through the speaker connected to the EXT. CB/PA jack, it is necessary to flip the EXT. CB-OFF switch to "OFF" position in order to transmit.

IMPORTANT: For regular 2-way communications, this switch must be placed in the OFF position. This will allow normal audio reception through the built-in speaker (or external speaker connected to the "EXT. SP" jack on the rear of the cabinet).

CHANNEL SELECTOR SWITCH

This is a 3-position switch which varies the receiving frequency for about ± 1 kHz. This enables you 40 channel positions indicated.

DELTA TUNE CONTROL

This is a 3-position switch which varies the receiving frequency for about ± 1 kHz. This enables you to receive stations transmitting slightly off frequency. Place the control in one of the three positions where the clearest reception is obtained. This control does not affect transmitting frequency.

S/RF POWER METER

This gives the relative strength of incoming signals when receiving and RF power output when transmitting.

ANTENNA WARNING LIGHT

In abnormal antenna conditions such as open- or short-circuit which may cause damage to the RF power transistors in the transmitter circuit, this light will turn on, warning you to check the antenna system.

NOTE: This antenna warning system is designed to give correct information when used with the antenna system having 50—75 ohm antenna impedance. Using the antenna having other than these antenna impedance may cause an erroneous warning indication during voice transmit operation.

TX LIGHT

This lights up during transmit operation, indicating the transmitter is on.

ANTENNA CONNECTOR

Used for antenna connection, matches PL-259 standard type.

EXT SPEAKER JACK

Used for an external speaker (8 ohms) connection. This jack accepts a standard 3.5 mm ϕ 2 circuit phone plug. When the plug is inserted into the jack, the built-in speaker is automatically disconnected.

EXT. CB/PA JACK

This will be used for connection of PA or monitor speaker (8 ohm), see "PA-SQUELCH CONTROL" and "EXT. CB-OFF SWITCH" in this manual. This jack accepts a standard (3.5 mm ϕ) 2 circuit phone plug.

DC POWER CONNECTOR

Used for connection of DC power cord supplied with the unit. (DC operation for negative ground system only.)

AC POWER SUPPLY CONNECTOR

Used for connection of AC power cord. When the AC power cord is connected to the connector, the DC power supply circuit is automatically cut off. **Therefore always remove the AC cord when operating the transceiver with DC power connected.**

ANTENNA CONNECTION

Any Citizens Band beam, dipole, ground plane or vertical antenna may be used. A ground plane type antenna will provide good coverage, and since it is essentially non-directional, it is ideal in base station to mobile operation. From base station to base station or point-to-point operation, a directional beam will give greater distance even under adverse conditions. The range of the transceiver also depends on the height of the antenna so whenever possible, select the highest location within F. C. C. limits.

A vertical whip antenna is best suited for mobile operation. A nondirectional antenna should be used for best results in any case. The base-loaded whip antenna will normally provide effective

communication or for greater range and more reliable operation a full quarter-wave whip may be used. Either of these antennas use the metal car body as a ground plane and the shield of the base lead as well as the metal case of the transceiver should be grounded. A standard antenna connector (type SO-239) is provided on the transceiver for easy connection to a standard PL-259 coax plug. Following the antenna manufacturer's instructions carefully will insure proper operation.

Whatever the type of antenna selected, it is important that it be properly adjusted and matched and the connecting transmission line be in good condition so as to avoid a high VSWR (voltage standing wave ratio). A VSWR over 3.5 results in reduced radiated power and may cause instability and damage to the final output stage of the transceiver.

POWER CONNECTION

AC OPERATION

Use the AC power cord supplied with the unit. Insert the one end of the cord to the AC power connector on the rear panel and the other end to the AC outlet supplying 105-120V 50/60 Hz AC.

DC OPERATION

When used in mobile operation, the vehicle's battery supplies the power.

CAUTION: The 76-863 is designed to be used in a 12 volts DC negative system only. If you are unsure of your vehicle's polarity, ask your dealer or local service station.

The red wire of the DC power cord may be connected directly to the positive or + battery terminal or to a fuse block or ignition switch or other convenient point.

The black wire should be connected to a metal part of the vehicle body or frame or — battery terminal.

OPERATING INSTRUCTIONS

1. Insert the MIC plug in the MIC connector on the front panel.
2. Make sure your antenna is securely connected to the antenna connector.
3. Turn the Power on.
4. Place the PA-SQUELCH control in the SQUELCH (about 9 o'clock) position.
5. Place the DELTA TUNE switch at center position.
6. Place the EXT. CB-OFF switch in the OFF position.
7. Place the channel selector switch to a desired channel.
8. Adjust the VOLUME control for proper sound level.
9. To transmit press the Push-to-Talk button on the microphone and to receive release the button.

IMPORTANT: Do not short circuit the antenna or do not try to transmit without an antenna connected to the antenna connector on the rear panel. This may cause damage to the output power transistors. Transmit only after carefully checking the installation of connector and coaxial cable.

SPECIFICATIONS

Circuitry	4 ICs, 26 Transistors, 22 Diodes, 4 Zener Diodes, 1 Vari-cap
Frequency Control	PLL (Phase Lock Loop) Synthesizing System
Channels	40 channels all installed
Mode of Operation	AM
Receiver System	Dual Conversion Superheterodyne
Sensitivity	More than $0.7\mu\text{V}$ (S/N 10 dB)
Selectivity	More than 55 dB down at ± 10 kHz
Intermediate Frequency	1st: 10.695 MHz 2nd: 455 kHz
Frequency Tolerance	$\pm 0.005\%$
Spurious Rejection	More than 60 dB
RF Output Power	Nominal 4.0 W (F.C.C. Maximum)
Squelch Range	$0.5\mu\text{V} - 500\mu\text{V}$
Delta Tune	About ± 1 kHz (Receiving only)
Audio Output Power	More than 3 W (EXT. SP at 8 ohms)
Controls	Volume, PA/Squelch, Delta Tune, Channel Selector, ANL-OFF Switch, EXT. CB-OFF Switch, NB-OFF Switch
Jacks and Connectors	Microphone, EXT. SP, Antenna, EXT. CB/PA Speaker, AC and DC Power Connectors

Speaker	3" dynamic, 8 ohms
Microphone	Dynamic CB mike
Power Source	DC 13.8V, AC 105-120V 50/60 Hz
Size	12-13/16 × 8-19/32 × 4-11/32 inches
Weight	7.8 lbs

TRANSCEIVER SERVICING

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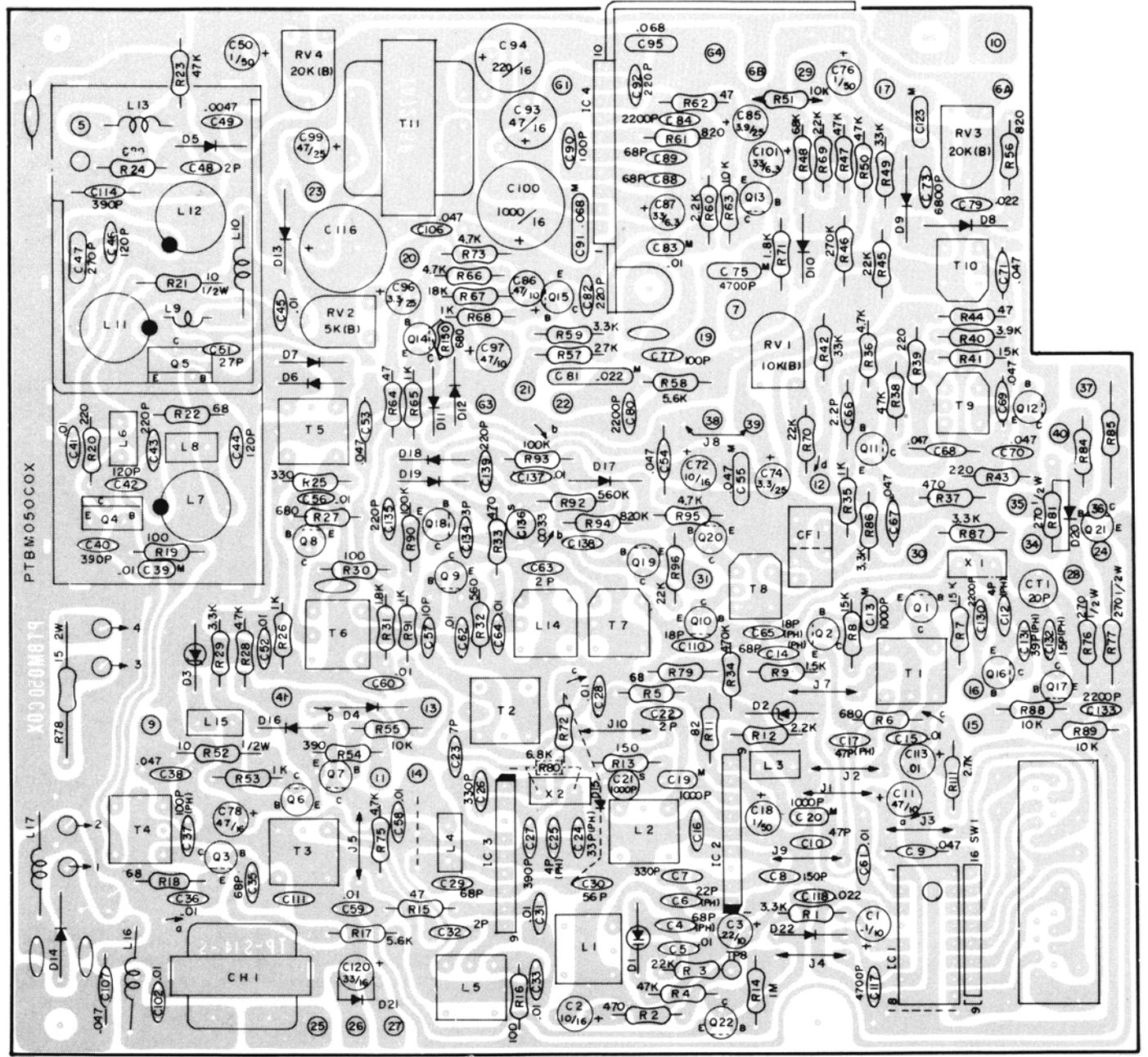
NOTE: When ordering parts, it is essential to specify the correct model number, the date of manufacture and the production lot number [stamped on F.C.C. plate located at the rear or bottom of your radio].

FREQUENCY-CHANNEL NUMBER CHARTS

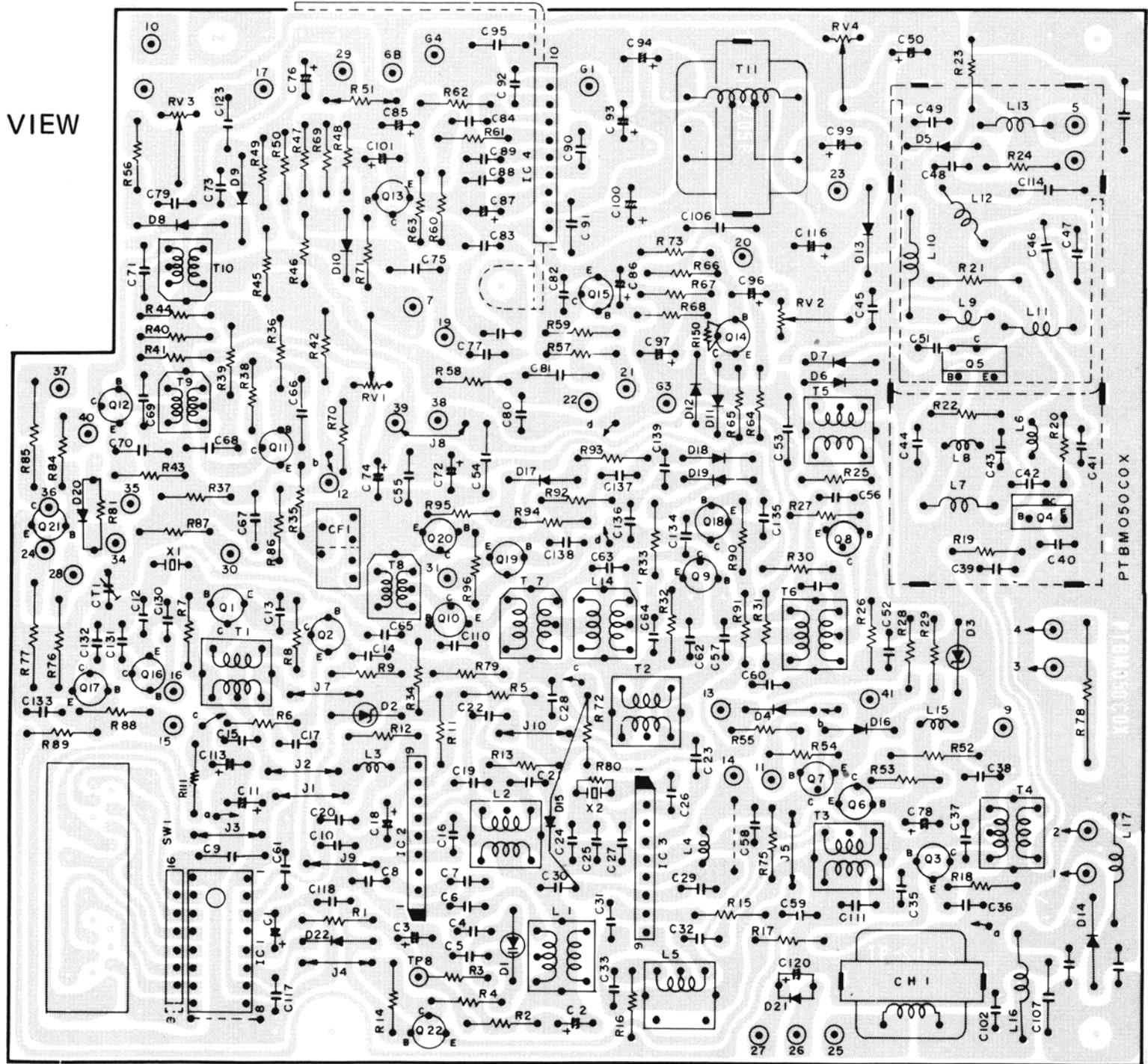
Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel
26.965 MHz	1	27.085 MHz	11	27.215 MHz	21	27.315 MHz	31
26.975 MHz	2	27.105 MHz	12	27.225 MHz	22	27.325 MHz	32
26.985 MHz	3	27.115 MHz	13	27.255 MHz	23	27.335 MHz	33
27.005 MHz	4	27.125 MHz	14	27.235 MHz	24	27.345 MHz	34
27.015 MHz	5	27.135 MHz	15	27.245 MHz	25	27.355 MHz	35
27.025 MHz	6	27.155 MHz	16	27.265 MHz	26	27.365 MHz	36
27.035 MHz	7	27.165 MHz	17	27.275 MHz	27	27.375 MHz	37
27.055 MHz	8	27.175 MHz	18	27.285 MHz	28	27.385 MHz	38
27.065 MHz	9	27.185 MHz	19	27.295 MHz	29	27.395 MHz	39
27.075 MHz	10	27.205 MHz	20	27.305 MHz	30	27.405 MHz	40

PARTS LAYOUT

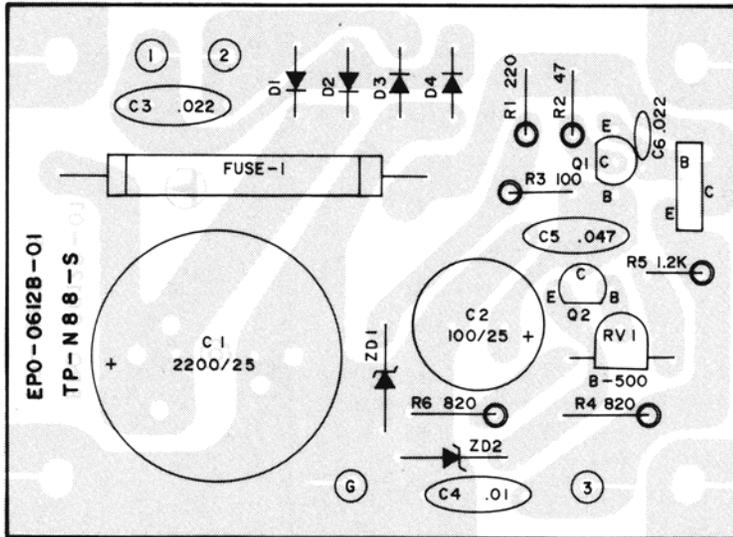
FRONT VIEW



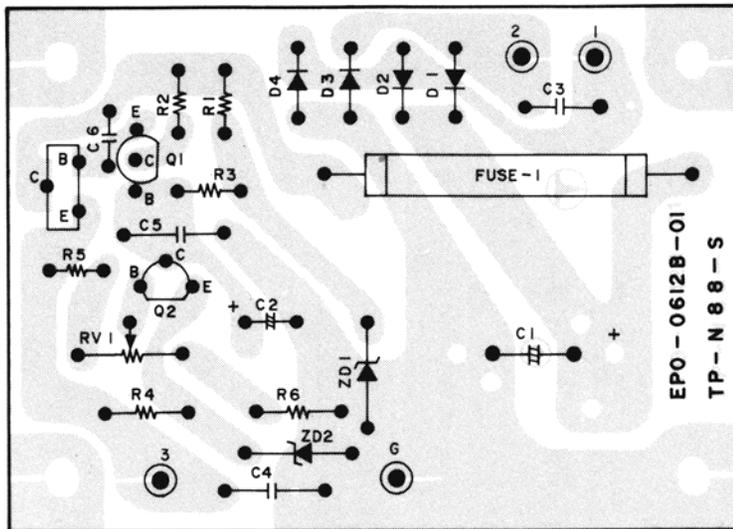
BACK VIEW



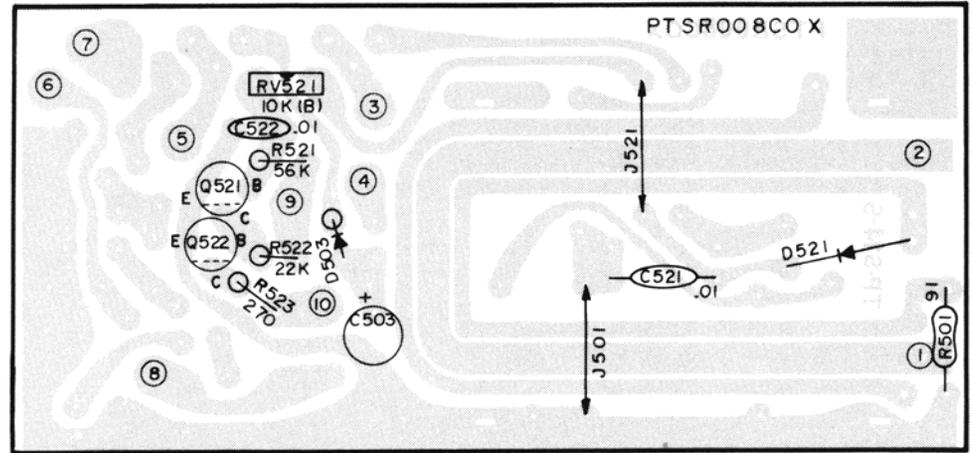
FRONT VIEW



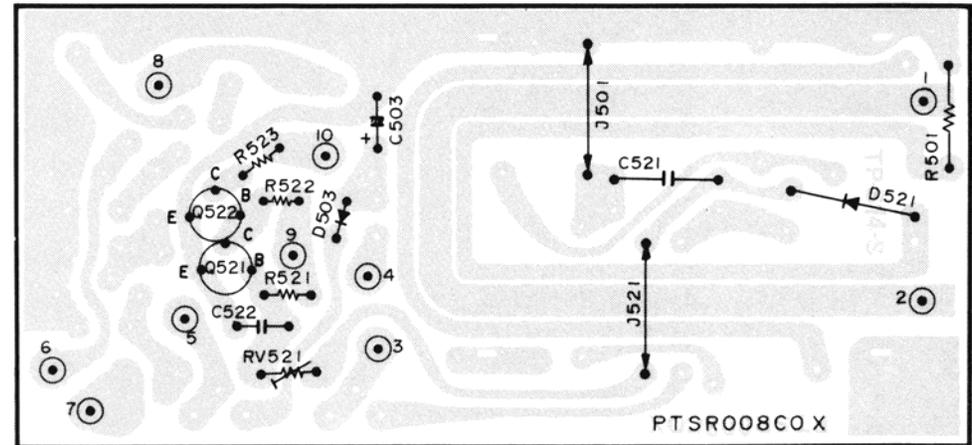
BACK VIEW



FRONT VIEW



BACK VIEW



LIMITED WARRANTY

Midland International Corporation will repair or replace, at its option, without charge, any Midland citizens band, marine and amateur transceiver, citizens band test meter, weather monitor, and scanning receiver which fails due to a defect in material or workmanship within 90 days following the initial consumer purchase.

This warranty does not include any carrying cases, earphones, or telescoping antennas which may be a part of or included with the warranted product, or the cost of labor for removal or reinstallation of the product in a vehicle or other mounting.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, along with proof of the purchase date, to Midland International Corporation, Warranty Service Department, 1960 North Topping, Kansas city, Missouri 64120, or to any "Midland Authorized Warranty Service Station." Warranty information and the location of the nearest "Midland Authorized Warranty Service Station," may be obtained by writing Midland International Corporation, Warranty Service Department.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.


Midland
INTERNATIONAL CORPORATION
Communications Division

P.O.Box 1903, Kansas City, Missouri 64141
Phone (913) 384-4200. Telex 04-2536
Cable Address: MICO

General Offices: 1900 Johnson Drive at State Line Road Shawnee Mission, Kansas 66205
Distribution and Service Center: 1690 North Topping Avenue Kansas City, Missouri 64120

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