

MIDLAND

COMMUNICATIONS COMPANY[®]

MODEL 13-795

23-CHANNEL

CITIZENS BAND TRANSCEIVER



OWNER'S GUIDE

FEDERAL COMMUNICATIONS COMMISSIONS REQUIREMENTS

Your new Midland 13-795 is a combination receiver-transmitter designed and built for licensed Class 'D' operation on any of the 23 frequencies designed as citizens band channels 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. Part 95 regulations are available for \$2.00 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. You are also required to complete F.C.C. form 505 and submit it to the F.C.C. in order to receive your license to operate this unit. F.C.C. regulations will be violated if you transmit with this unit prior to receipt of your license.

OWNER'S GUIDE

Your 13-795 is a versatile, professional quality transceiver and we strongly suggest that you read this Owner's Guide carefully before operation so that you may receive full benefit from its many features.

COMMUNICATION RANGE

Operating range will vary from 1 to 10 miles, depending on terrain, interference, climatic conditions, and the other transceiver used. Using a mobile or base station antenna will increase range. Generally, operating range is greater in open country than in an urban center. Battery condition also affects range and fresh batteries will provide for better range than weak ones.

OPERATING CONTROLS AND FUNCTIONS (FIGURE 1)

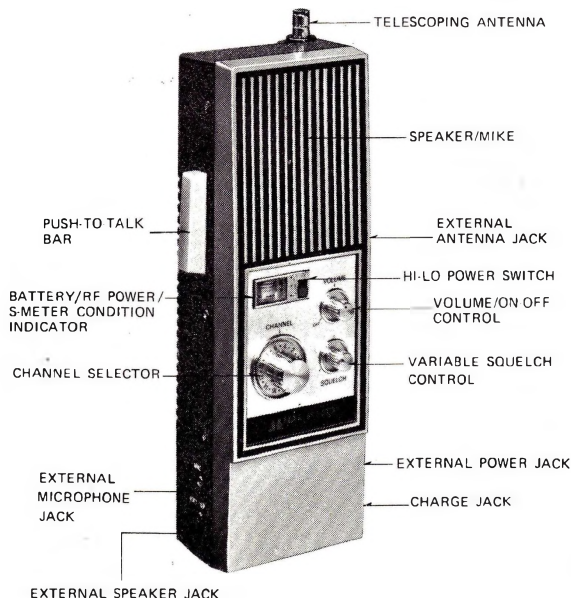


FIGURE-1

CHANNEL SELECTOR

Controls both transmitter and receiver frequencies simultaneously and may be set to any of the 23 positions indicated. All necessary crystals are supplied for full 23 channel operation.

VOLUME/ON-OFF

Turns the set on and controls the sound output from the speaker when receiving. The volume control does not affect transmitting output.

SQUELCH

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 settings too far to the right will not allow weaker signals to release the squelch.

HI-LO POWER SWITCH

This controls the transmitter-output power. This is an important control and when properly used will greatly extend battery life. For short or medium range communications, set this switch to low. In this position, the power input is reduced to 2 watts. For long range use or when maximum power is needed to get through interference, move this switch to high position.

PUSH-TO-TALK BAR

This controls both the transmitter and the receiver. To transmit, press and hold the bar, to receive, release it.

EXTERNAL ANTENNA JACK

External antennas, either mobile or base may be plugged into this jack and will increase the units range. The built-in antenna is not extended when an external antenna is being used.

CHARGE JACK

Permits recharging of rechargeable batteries without removal from the case.

EXTERNAL POWER JACK

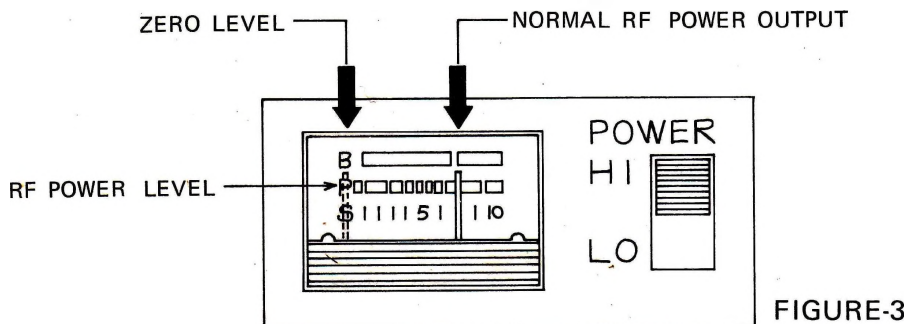
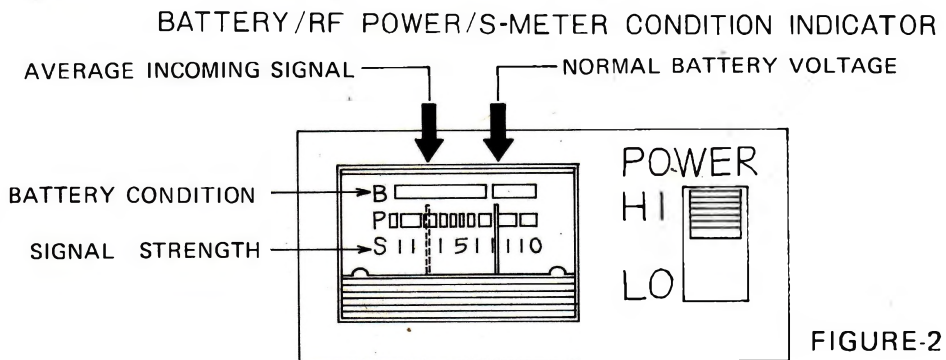
Permits use of an external 15 volts DC supply.
(SEE MOBILE AND BASE OPERATION)

EXTERNAL SPEAKER JACK

Permits the use of an external 8 ohm speaker. When the external speaker is plugged in, the speaker in the set is disconnected in the receive position. The built in speaker/mike will still function normally in the transmit position.

METER

In the transmit position, it measures the relative output power of your transmitter. In the receive position, it measures the relative strength of incoming signals and the condition of the batteries. (See figures 2 and 3)



BATTERY INSTALLATION

When replacing batteries, turn power switch off.

Note: This transceiver operates from 15 volts DC and may be powered by 12 1.25 volt nickel cadmium rechargeable cells or 10 1.5 volt regular "AA" type penlight cells. When using penlight cells, 2 dummy batteries (supplied) must be used.

Due to the high current drain of this unit, nickel cadmium or alkaline cells are recommended.

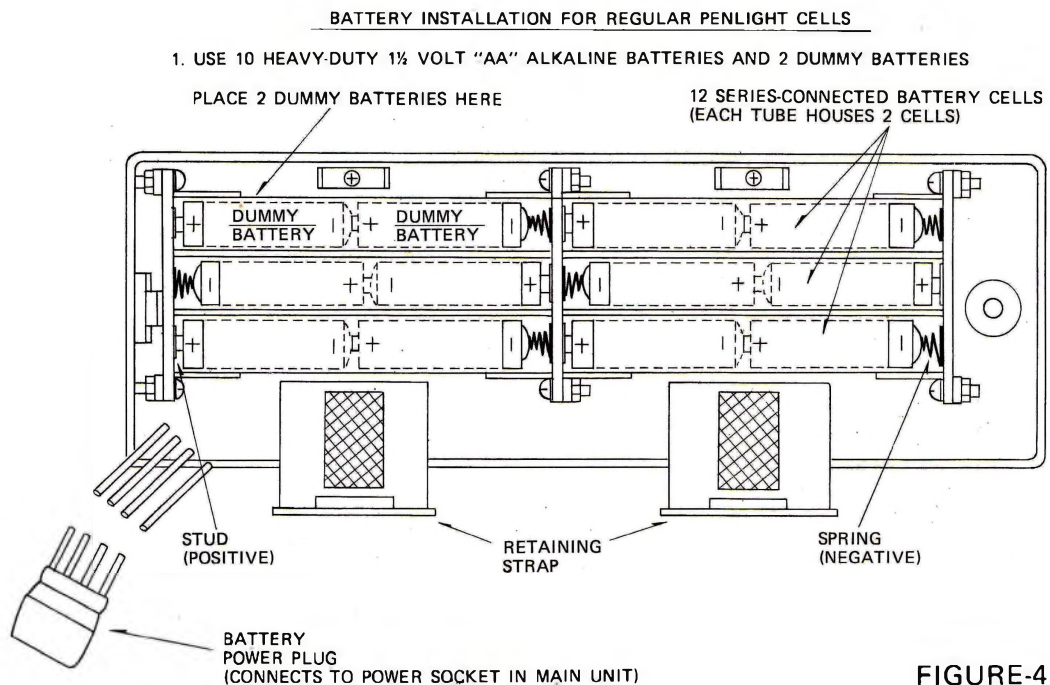
To replace batteries, loosen the two large slotted screws located on the bottom and back of the case. (See figure 6)

Carefully disconnect the battery power plug.

Refer to figure 4 for regular penlight cell installation. Note: Dummy batteries must be placed as shown.

Refer to figure 5 for nickel cadmium cell installation.

Connect power plug and replace cabinet back.



BATTERY INSTALLATION FOR NICKEL-CADMIUM BATTERIES

1. USE 12 NICKEL-CADMIUM RECHARGEABLE BATTERIES (1.25 VOLTS EACH)

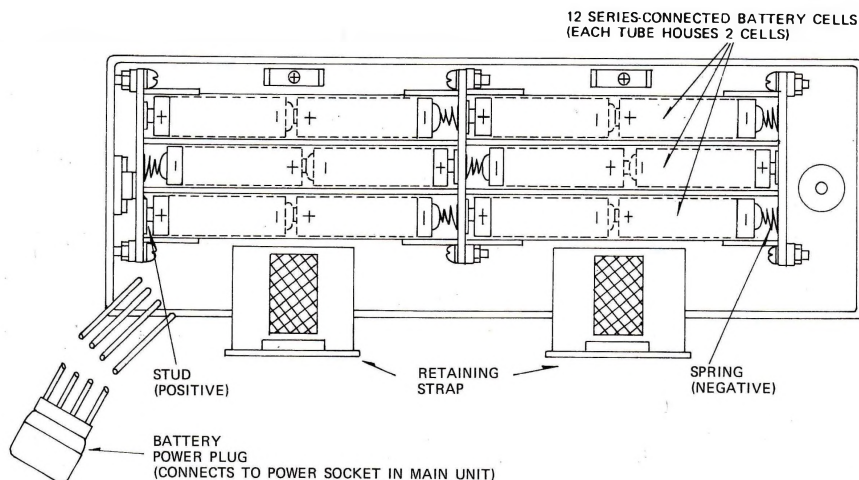


FIGURE-5

OPERATING INSTRUCTIONS

1. Extend the antenna to its full length or connect an external antenna.
NOTE: Transmitting without any antenna may damage the output transistors.
2. Turn the volume/on-off switch to the on position.
3. Check the meter to be sure your batteries are good.
4. Set the channel selector to the desired channel.
5. Adjust the volume and squelch controls.
6. To transmit, press and hold the push-to-talk bar and talk into the speaker/mike grill. Use a normal tone of voice and hold the unit about 2 to 3 inches from your mouth. To receive, release the push-to-talk bar.

For best transmission and reception when using the built in antenna, it should be held in a vertical position.

MOBILE OPERATION

This unit may be used in a vehicle, drawing its power from the car or boat battery system and using a mobile antenna installed on the vehicle. However, this unit is designed to operate from 15 volts DC and slightly reduced performance may be noticed when using a 12 volt supply system.

BASE STATION OPERATION

This unit may also be used as a base station with a suitable base station antenna.

SPECIFICATIONS

Circuit system	<p>Receiving section Crystal controlled dual conversion superheterodyne with RF amplifier full variable squelch and noise limiter.</p> <p>Transmitting section Crystal controlled oscillation. collector modulation system.</p>
Semi-conductor	<p>16 Transistor plus 1 Transistor in squelch circuit.</p> <p>1 Zener Diode</p> <p>5 Diodes</p> <p>1 Thermistor</p> <p>1 Varistor</p>
Frequency	<p>27 MHz citizen band synthesized system</p> <p>23 Channels</p>
Modulation	AM - High Level
Operation	Push-to-talk system
Antenna	Telescopic, 10 section, 69"
Speaker-Microphone	2 $\frac{3}{4}$ " Dynanic speaker, 100 ohm
Controls	Channel selector switch, full variable squelch, OFF-ON volume control, battery saving switch.
External jack	External power jack, Charger jack, External speaker jack, External mic jack, External antenna jack.
Power source	15 volts DC
Cabinet	All metal with diecast chrome grille
Dimensions	10-3/8" High x 3-3/8" Wide x 2-3/8" Deep.
Weight	3-3/4 pounds.
Receiving section	<p>Sensitivity 1 μV at 10dB S/N</p> <p>Squelch sensitivity 1 μV Nominal</p> <p>Intermediate frequency</p> <p> 1st 5.995MHz/6.015/6.025/6.035</p> <p> 2nd 455 KHz</p> <p>Audio output 0.5 watt</p>
Transmitting section	<p>Power input 5 watt</p> <p>Frequency tolerance \pm 0.005%</p>
Accessories included	Leather case, carrying strap, two(2) dummy batteries and instruction booklet.

SERVICE INFORMATION

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 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.

MIDLAND COMMUNICATIONS COMPANY HEREBY
CERTIFIES THAT THIS UNIT HAS BEEN DESIGNED
AND MANUFACTURED IN ACCORDANCE WITH VOL. 6,
PART 95 OF THE CURRENT FCC RULES AND REGULATIONS
AS OF THE DATE OF MANUFACTURE.

DISASSEMBLY INSTRUCTIONS

To remove the back cover, loosen the two large slotted screws located on the bottom and back of the cabinet (Refer to (c) and (d), Figure 6).

To remove the front panel, loosen the set screws in the volume, squelch, and channel selector knobs and remove these knobs. Then remove two phillips head screws from each side of the cabinet. (Refer to (a) and (b), Figure 6)

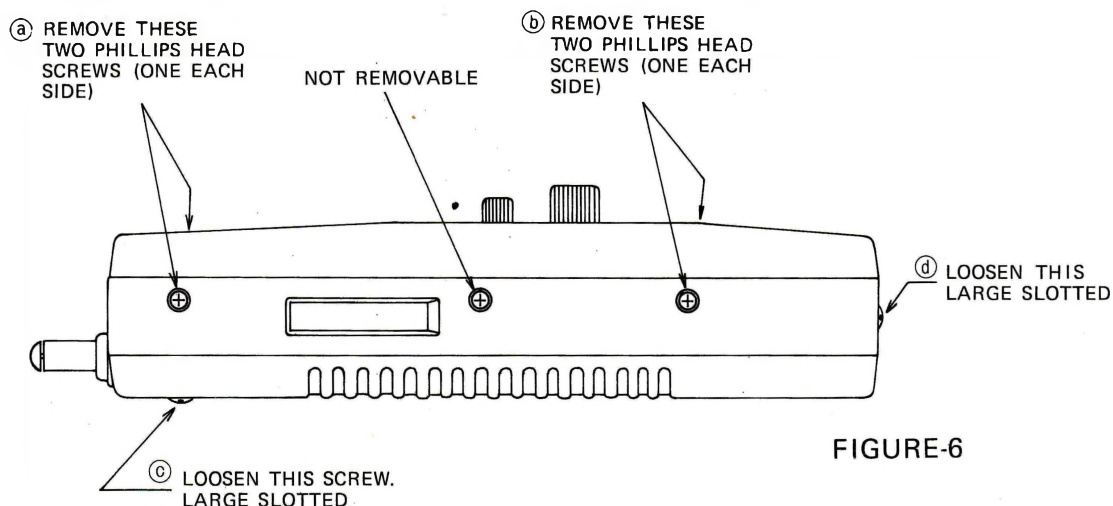


FIGURE-6

ADJUSTMENT GUIDE

Caution: The antenna must be fully extended, or a suitable load applied when transmitting or the output transistors may be damaged.

Transmitting section

1. Set the channel selector to channel 13.
2. Connect an RF power meter to the external antenna jack. (Antenna withdrawn).
3. Connect a suitable, metered, 15 volt power supply to the external power jack.
4. Press the push-to-talk switch and adjust the transmitting coil only, for maximum RF output. (Note current drain from power supply)
5. Disconnect the RF power meter and fully extend the antenna.
6. Press the push-to-talk switch and adjust the antenna loading coil for the same power supply current drain as obtained in step 4.

Receiving Section

1. Adjust a signal generator to 455 KHz with 30% modulation at 1 KHz. Adjust the 4 transformers of the second IF stage for maximum indication on the front panel output meter.
2. Set the channel selector to channel 11. and using another transceiver or transmitter as a signal source, adjust the antenna coil, the RF coil, and the 2 transformers of the first IF stage for maximum indication on the output meter.

FREQUENCY SYNTHESIZER CRYSTAL COMBINATION LIST

(A) Group 6 pcs.

- a. :33.000 MHz
- b. :33.050 MHz
- c. :33.100 MHz
- d. :33.150 MHz
- e. :33.200 MHz
- f. :33.250 MHz

(B) Group 4 pcs.

(Transmitting)

- a' :6.035 MHz
- b' :6.025 MHz
- c' :6.015 MHz
- d' :5.995 MHz

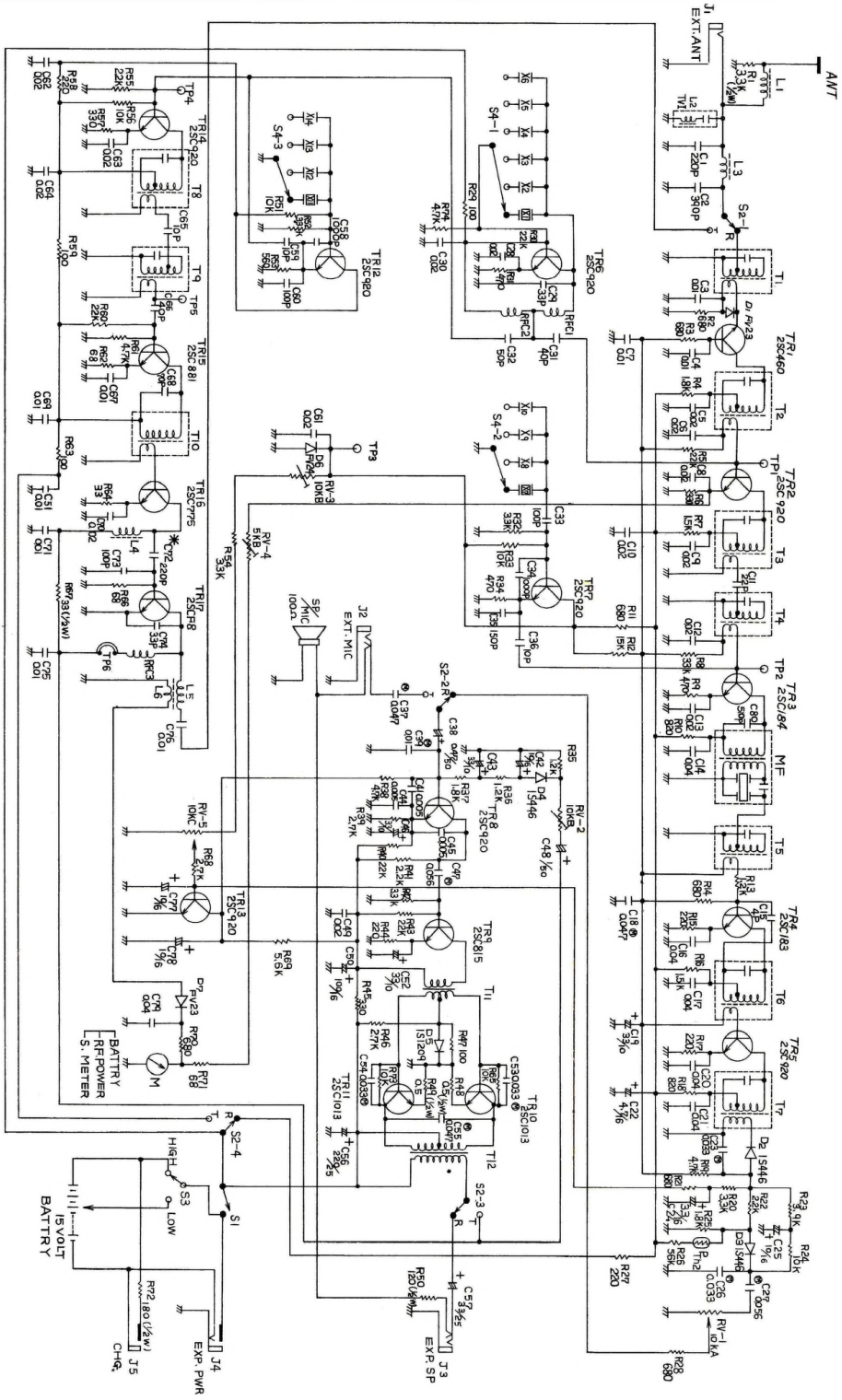
(C) Group 4 pcs.

(Receiving)

- a'' :6.490 MHz
- b'' :6.480 MHz
- c'' :6.470 MHz
- d'' :6.450 MHz

<u>CHANNEL</u>	<u>FREQUENCY(MHz)</u>	<u>Combination (Transmit)</u>	<u>Combination (Receive)</u>
1.	26.965	a-a'	a-a''
2.	26.975	a-b'	a-b''
3.	26.985	a-c'	a-c''
4.	27.005	a-d'	a-d''
5.	27.015	b-a'	b-a''
6.	27.025	b-b'	b-b''
7.	27.035	b-c'	b-c''
8.	27.055	b-d'	b-d''
9.	27.065	c-a'	c-a''
10.	27.075	c-b'	c-b''
11.	27.085	c-c'	c-c''
12.	27.105	c-d'	c-d''
13.	27.115	d-a'	d-a''
14.	27.125	d-b'	d-b''
15.	27.135	d-c'	d-c''
16.	27.155	d-d'	d-d''
17.	27.165	e-a'	e-a''
18.	27.175	e-b'	e-b''
19.	27.185	e-c'	e-c''
20.	27.205	e-d'	e-d''
21.	27.215	f-a'	f-a''
22.	27.225	f-b'	f-b''
23.	27.255	f-d'	f-d''

SCHEMATIC DIAGRAM



- S1 - POWER SWITCH WITH VOLUME CONTROL.
 S2 - PUSH TO TALK SWITCH.
 S3 - BATTERY SAVING SWITCH.
 CRYSTAL: X1 - X14
 X1 - 33.000MHZ, X2 - 33.050M, X3 - 33.100M, X4 - 33.150M, X5 - 33.200M, X6 - 33.250M,
 X7 - 6.650MHZ, X8 - 6.680M, X9 - 6.670M, X10 - 6.650M,
 X11 - 6.035MHZ, X12 - 6.025M, X13 - 6.015M, X14 - 5.795M.

* ADJUSTABLE
 @ POLYESTER FILM
 CAPACITOR

WARRANTY POLICY

Midland International Corporation warrants each new Midland product to be free from defects in material and workmanship under normal 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 of 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, batteries, antennas, broken or cracked cabinets, or any other accessory used in connection with the 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 date of purchase.

MIDLAND INTERNATIONAL CORPORATION

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