

MICROMOBILE® GMRS 2-WAY RADIO



MXT105B

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WELCOME TO THE WORLD OF MIDLAND RADIO

Thank you for choosing the MXT105B MicroMobile GMRS radio from Midland Radio Corporation. Please read through this manual thoroughly to insure you get peak performance from your radio. You can also find additional information about the MXT105B on our website at Midlandusa.com or may contact our Customer Service team at (816) 241-8500 from 8 AM to 4:30 PM (CT) Monday through Friday for assistance.

FEATURES

- 15 GMRS Channels
- 142 Privacy Codes
- Weather Alert and Listen to Weather
- High / Low Power Settings
- Keypad Lock
- External Speaker Jack
- Backlit Display and Keypad
- Monitor

IMPORTANT!

Changes or modifications to this unit not expressly approved by MIDLAND RADIO CORPORATION could void your right to operate this unit. Your radio is setup to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the COMMUNICATOR to exceed those limitations. Any adjustment to your radio must be made by qualified technicians.



FCC NOTICE

The MXT105B operates on GMRS (General Mobile Radio Service) frequencies, which require a Federal Communications Commission (FCC) license. You must be licensed prior to operating on channels 1-7 or 15-22, which comprise the GMRS channels of the MXT105B. Serious penalties may result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communication Act's Section 501 and 502 (amended). You will be issued a call sign by the FCC that should be used for station identification when operating your radio on GMRS channels. You should also cooperate by engaging in permissible transmissions only, avoiding channel interference with other GMRS users, and being prudent with the length of your transmission time.

To obtain a license or ask questions about license application, contact the FCC at 1-888-CALL FCC or go to the FCC's website:

https://www.fcc.gov/wireless/universal-licensing-system#filing click on the link "File OnLine" and follow the instructions to obtain a FRN and log in to complete form 605.

Exposure To Radio Frequency Energy

Your Midland radio is designed to comply with the following national and international standards and guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- United States Federal Communications Commission, Code of Federal Regulations: 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI)/Institute of Electrical & Electronics Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1999
 Edition
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- To control your exposure and ensure compliance with general population or uncontrolled environment exposure limits, transmit no more than 50% of the time. The radio generates measurable RF energy exposure only when transmitting.
- The consumer must maintain a minimum safe separation distance of 15.5 inches (40 cm) from the antenna.



INSTALLING YOUR RADIO Preparation for Installation

This radio may be installed in any 12-volt negative ground system vehicle. Most current U.S. and foreign vehicles use a negative ground system, but some older models and some newer large trucks may have a positive ground. Check the specifications for your vehicle before beginning installation. Generally, you have a negative-ground system if the negative (-) battery terminal is connected to the motor block. Contact your dealer if you are unable to determine your vehicle's polarity system.

- 1. Read these instructions completely before beginning installation.
- Read and follow all safety precautions in your vehicle's Service Manual.
- 3. Make sure all necessary tools, materials, and parts are on hand.
- Disconnect the negative (-) battery cable before installing your radio. Be sure to reconnect the cable when installation is complete.
- 5. Determine a mounting location for your radio. The MXT105B is designed to be installed under the dash or vertically on the center console. Choose a location that does not impair visibility or interfere with driving. Also take into consideration the routing and length of the lead wires and cables to power source, antenna, and/or optional external speaker.



CAUTION: Extreme care should be exercised when drilling into the dash to avoid damage to under dash electronic ignition, cruise control, instrument and/or accessory wiring.



Installing the Mounting Bracket

 Using the mounting bracket as a template, mark the location of each screw hole under the dash. Use a center punch to mark the hole locations.



 Attached the bracket to the dash with the Phillips head sheet metal screws provided. Tighten the screws securely.
 DO NOT OVER-TIGHTEN.



 Slide the radio into the mounting bracket. BE SURE the mounting bracket retainers engage the slots





Power and Antenna Connections

Rear Panel Connections



A. ANT Jack - SO-239 UHF connector for external antenna (included)

- B. EXT SPKR Jack 3.5mm audio connector for optional speaker (purchased separately) (see Using an External Speaker for specifications)
- C. DC POWER Jack 2-pin DC connector for 12V DC nominal input power connection

Installing the Antenna

The MXT105B comes with a magnetic mount antenna that can be easily placed on a vehicle's roof, trunk or other location that can provide a metal ground plane. Proper placement is important to the overall performance of the radio. Follow these guidelines to help you decide where to place it.

- Mount the antenna as high on the vehicle as possible. (The higher the better).
- The antenna must be on a flat, clean, metal service to create a ground plane. Surfaces covered with vinyl or fiberglass will negatively affect the performance.
- Make sure the cable (6 meters, about 20 feet) can easily be routed to the radio and does not cause interference with the vehicle operation.
- Keep the antenna and cable away from noise sources such as the ignition and electrical systems or gauges.
- Be sure not to crimp or damage the antenna or cable during installation.



- Look for existing entry points when routing the cable such as a rear window, trunk or hood opening, firewall grommets or other areas where weather protection is provided.
- Do not alter the antenna or cable as it is pre-matched to your radio for peak performance.



1. Power Connection

The power cord supplied with the MXT105B is equipped with a DC vehicle power port for easy installation. Simply plug the power cord into the connector \bigcirc on the back of the radio and plug the DC adapter into the vehicle's DC power port.

Follow these steps if you prefer to direct "hard wired" connection. Make sure the vehicle power is off while making all connections.

- a. Plug the power cable into the connector C on back of the radio.
- b. Cut the DC Power vehicle adapter off the other end of the cord.
- c. Carefully route the power cord to a 12-volt DC power source, such as the fuse block or battery terminal, making sure not to cause interference with the vehicle operation, and avoid noise sources as describe above.

NOTE: The fuse block is the recommended connection point as it is usually the most convenient and the radio will turn on/off with the vehicle when using an accessory terminal. Check your vehicle owners guide for location and proper connection.

- d. Connect the red wire (with in-line fuse) to the positive (+) accessory connector in the fuse block (recommended) or positive (+) battery terminal.
- e. Connect the black wire (ground) directly to a metal service on the vehicle or the negative (-) battery terminal.



2. Antenna Connection

Simply screw the antenna connector on the antenna cable onto the connector \bigwedge (SO-239) on the back of the radio.

- a. Carefully coil any excess cable and use a tie strap to secure it out of the way of vehicle operation.
- b. Do not cut, crimp, or alter the cable or the connector is any way as it is pre-matched to your radio.

NOTE: The fuse block is the recommended connection point as it is usually the most convenient and the radio will turn on/off with the vehicle when using an accessory terminal. Check your vehicle owners guide for location and proper connection.

- d. Connect the red wire (with in-line fuse) to the positive (+) accessory connector in the fuse block (recommended) or positive (+) battery terminal.
- e. Connect the black wire (ground) to directly to a metal service on the vehicle or the negative (-) battery terminal.

3. Optional External Speaker Connection (Not included)

The MB105B provides a 3.5mm mono jack B connection for an external speaker.

- a. Use only approved Midland accessories.
- b. Speaker must be 8-ohm, minimum rating of 4 watts. Center pin (tip) positive.

NOTE: The MB105B's internal speaker is disabled when an external speaker is connected.



- 13. O Scanning Icon Indicates Scan function is active.
- 14. On Keypad Lock Icon Indicates the keypad lock function is on.
- 15. Channel Number Shows the channel number in use.
- Signal Strength Icon Shows the strength of a transmitting or receiving signal.
- 17. * TX Icon Shows that the radio is transmitting.
- Weather Icon Shows when listening to weather or flashes when in Weather Alert Mode.

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OPERATING YOUR RADIO

About Range

Your MXT105B is designed to give you maximum operating range under optimum conditions.



Optimum Conditions for maximum operating range are:

- · Over water.
- · In open rural areas without obstructions.
- · On flat areas where you can see the other radio user.

To ensure you get maximum range:

- Be sure to mount the antenna (included) as high as possible on your vehicle.
- Be sure to set your radio to use HI power (see Selecting the Transmit (TX) Power Level).

Power On/Off

To turn the radio on or off:

- Press and hold the Power On/Off D button for two seconds to turn the radio on.
 - The LCD display will show all icons for one second and then display the most recent selected channel.
- Press and hold the Power On/Off D button for two seconds to turn the radio off.
 - · LCD display will go blank when the radio turns off.

Channel Selection

IMPORTANT! To communicate between two MXT105B radios, both radios must be set to the same channel and privacy code (see Selecting a Privacy Code) selections.

- 1. Be sure the radio is turned on (see Power On/Off).
- Press the Channel Up ▲ button to scroll forward through the available channels. Press the Channel Down ▼ button to scroll backward through the available channels.
 - The Channel icon on the LCD will show the currently selected channel.

Transmitting and Receiving a Call

- To transmit a call, press and hold the PTT button on the microphone, and speak into the microphone in a normal voice.
 - The RX/TX] icon will show continuously on the LCD display while transmitting.

NOTE: For maximum clarity, hold the microphone 2 to 3 inches from your mouth when speaking.

- 2. To receive a call, release the PTT button on the microphone.
 - The RX/TX] icon will show on the LCD display when your radio is receiving a transmission.
- If necessary, press the Volume Up ∧ or Volume Down ∨ button to increase or decrease radio volume.



Locking The Keypad

You can use the keypad "lock" function to prevent accidentally changing your radio's settings. When the function is enabled, the current radio settings are "locked" in place.

NOTE: When the "lock" function is enabled, only the **PTT** button on the microphone and the **Volume Up** \land / **Volume Down** \lor buttons on the radio remain active.

To "lock" and "unlock" the keypad:

- 1. Press and hold the Menu to button for two seconds.
 - The Keypad Lock On icon will turn on when the keypad is "locked".
- 2. Repeat step 1 to "unlock" the keypad.
 - The Keypad Lock On icon will turn off when the keypad is "unlocked".

Adjusting the Display Brightness

You can adjust the illumination on the LCD display to ensure optimum visibility under various daytime and night-time conditions. There are 5 levels of illumination, from off to full brightness.

To adjust the display brightness:

Briefly press and release the Power On/Off () button.

- Each time the button is pressed and released, the display illumination increases to the next brightness level.
- When the maximum brightness level is reached and the button is pressed and released, the display illumination turns off.



Using Monitor Mode

Monitor mode lets you checked for activity on the current active channel. You can also use Monitor Mode to adjust the volume of the radio when not receiving a signal.

To enter and exit Monitor Mode:

- Briefly press and release the Monitor/Quiet Channel P button to enter Monitor Mode.
 - · You will hear any activity on the current selected channel.
- Press the Volume Up ∧ or Volume Down ∨ button to increase or decrease radio volume.
- Once the radio volume has been adjusted to the desired level, briefly press and release the Monitor/Quiet Channel P button to exit Monitor Mode.

NOAA Weather Alert and Listen to Weather

The MXT105B is equipped with Listen to Weather and Weather Alert that provides information directly from the National Weather Service ("NWS") for severe weather events or civil emergencies so you can take appropriate actions to stay safe.



- The MXT105B must be programmed to the correct Weather Channel for your area for the feature to work correctly.
- Check with your local NWS office or go to the NWS website at <u>https://www. weather.gov/nwr/station</u> listing to find your frequency. Use the chart to locate the weather channel setting number to be programmed into the radio.

WX Band Channels

Channel Number	Frequency (MHz)
1	162.550
2	162.400
3	162.475
4	162.425
5	162.450
6	162.500
7	162.525
8	161.650
9	161.775
10	163.275



1. Set the Weather Channel

a. Auto Scan

The MXT105B has an auto scan feature that can automatically set the weather channel. However, it is highly recommended that you look up your weather channel as described above to ensure it has set the correct one.

- The MXT105B will automatically scan for an active weather channel.
- You can press the Scan O button to rescan for a weather channel if necessary.
- When you hear the National Weather Service broadcast, press the Menu to button to save the Weather channel and move to the next setting.

b. Manual Entry

- Press and hold the Monitor-Weather \$\vec{P}\$ button for 3 seconds to enter Weather mode.
- Briefly press the Menu to button, the digits on the display will start flashing.
- Use the Channel Up ▲ or Channel Down ▼ button to select your weather channel.
- Press the Menu

 button to save the Weather Channel and move to the next setting.

2. Listen to Weather



After you have set the Weather Channel, you can listen to current weather conditions and forecast directly from the National Weather Service.

- a. Press and hold the Monitor-Weather P button for 3 seconds to enter Weather mode.
- b. You will hear the voice of the National Weather Service.
- c. Press the PTT button to exit weather mode.



3. Set Weather Alert

Weather Alert runs silently in the background when the radio is on and will automatically respond to an alert signal from the National Weather Service. It will provide you with important information about severe weather or a civil emergency in your area so you can take the appropriate action to stay safe.

- Press and hold the Monitor-Weather button for 3 seconds to enter Weather mode.
- b. Briefly press the Menu Dutton, the digits on the display will start flashing. Press the Menu button again to move to the next step, Weather Alert on/off.
- c. Use the Channel Up ▲ or Channel Down ▼ button to turn weather alert On or Off. The Weather Icon will flash ♥ when Weather Alert is On.
- d. Press the Menu to button to save the setting and return to "Listen to Weather" mode.
- e. Press the PTT button to exit "listen to Weather" mode.
- All functions of the radio will continue to operate normally when Weather Alert is on.



 Receiving an Alert will override all other functions of the radio to ensure you hear the complete message from the NWS.



Scanning for an Active Channel Channel Scan

- Quickly press the Scan O Button to turn the Channel Scan function on. The Scan icon will be flashing in the display to confirm the radio is in Scan mode.
- The radio will rapidly scan through all available channels stopping briefly on a channel in use to hear the conversation.
- You may join the conversation by pressing the PTT button and using the radio normally.
- 4. The radio will return to scan mode after 5 seconds of inactivity.
- 5. Quickly press the Scan 🕑 Button to turn the Channel Scan function off.

Channel Scan Edit

You can remove a channel from the scan list so that you scan only the channels of importance to you.

- 1. Use the **Channel Up** ▲ or **Channel Down** ▼ button to locate the channel you want to remove from the scan list.
- Press and hold the Scan O Button for 3 seconds to remove it from the channels to be scanned.
- Repeat steps 1 and 2 to return a channel to the list of channels to be scanned.

MENU SETTINGS

The following settings are available in the Menu.

Privacy Codes – Choose from either a CTCSS (Continuous Tone Coded Squelch System) or DCS (Digitally Coded Squelch) code to help increase the privacy of your conversation.



- It is important that radios use the same Privacy code for the same channel.
- Radios on the same channel, but with different Privacy codes will not be able to talk to each other.

Squelch Sensitivity – This setting effects how much signal strength is needed to receive a transmission. A high setting will reduce background noise, but potentially miss weak transmissions, where a low setting will allow weaker signals to be received, but also increases background noise.



Keypad Beep – Keypad tones provide positive feedback when operating the radio. Turn them off for SILENT OPERATION.

Roger Beep – A brief tone is sent at the end of your transmission to let others know you have finished talking and the channel is clear for to use. Turn this off for quieter operation.

High / Low Power - Use this to adjust the transmit power of the radio.



- 1. Press to enter the Menu 🛟 button.
- Use the Channel Up Arrow ▲ to scroll through the settings as shown in the diagram above.
- To Change a setting, stop on that setting and press the Menu button to enter that settings options.
- Use the Channel Up ▲ or Channel Down ▼ button to select the new setting.
- 5. Press the Menu 🏶 button to save the setting and exit the Menu.
- When you are finished, press the Menu to button or PTT to save the settings and return to normal radio operation.



CARE AND MAINTENANCE

CAUTION: DO NOT use alcohol or cleaning solutions to clean the radio. DO NOT immerse the radio in water.

- 1. Use a soft cloth moistened with water to clean the radio.
- 2. Dry the radio with a dry lint-free cloth should it get wet.

TROUBLESHOOTING GUIDE

If you experience difficulties using your MXT105B, refer to the following chart to correct common operation problems. If you have a problem which you believe requires service, please call first and speak with a service technician at 816-241-8500. Many problems can be remedied over the phone without returning the unit for service.

PROBLEM	SOLUTION
No Power	Check vehicle power source (battery); replace as needed.
NO Power	Check input power connection and/or wires to vehicle power source.
	Verify both radios have the same channel selection and Privacy Code settings.
Cannot Receive Messages	Make sure you are within range of the other radio.
mooragoo	Confirm communication is not affected by buildings and other structures (see About Range)
Keypad is not	Make sure keypad "lock" is not on (see Locking the Keypad)
Responding	Reset the radio (turn radio off then back on)
Display Backlight is Dim	Adjust the display illumination (see Adjusting the Display Illumination)

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SPECIFICATIONS

Channels:	15 GMRS Channels and
	10 NOAA Weather Channels

Privacy Codes:	38 CTCSS; 104 DCS
Operating Frequency:	UHF; 462.5500 ~ 462.725 MHz
Power Source:	13.8 VDC Nominal

GMRS Frequency Chart

Ch. No.	Ch. Freq. (MHz)	Ch. No.	Ch. Freq. (MHz)
1	462.5625	15	462,550
2	462.5875	16	462.575
3	462.6125	17	462.600
4	462.6375	18	462.625
5	462.6625	19	462.650
6	462.6875	20	462.675
7	462.7125	21	462.700
Ch 8 ~ 14 Res	served for FRS	22	462.725



CTCSS Privacy Codes Frequency Chart

Code	Freq.								
1	67.0	9	91.5	17	118.8	25	156.7	33	210.7
2	71.9	10	94.8	18	123.0	26	162.2	34	218.1
3	74.4	11	97.4	19	127.3	27	167.9	35	225.7
4	77.0	12	100.0	20	131.8	28	173.8	36	233.6
5	79.7	13	103.5	21	136.5	29	179.9	37	241.8
6	82.5	14	107.2	22	141.3	30	186.2	38	250.3
7	85.4	15	110.9	23	146.2	31	192.8		
8	88.5	16	114.8	24	151.4	32	203.5		

DCS Privacy Codes Chart

No.	Code	No.	Code	No.	Code	No.	Code
1	23	27	165	53	413	79	731
2	25	28	172	54	423	80	732
3	26	29	174	55	431	81	734
4	31	30	205	56	432	82	743
5	32	31	223	57	445	83	754
6	43	32	226	58	464	84	36
7	47	33	243	59	465	85	53
8	51	34	244	60	466	86	122
9	54	35	245	61	503	87	145
10	65	36	251	62	506	88	212
11	71	37	261	63	516	89	225
12	72	38	263	64	532	90	246
13	73	39	265	65	546	91	252
14	74	40	271	66	565	92	255
15	114	41	306	67	606	93	266
16	115	42	311	68	612	94	274
17	116	43	315	69	624	95	325
18	125	44	331	70	627	96	332
19	131	45	343	71	631	97	356
20	132	46	346	72	632	98	446
21	134	47	351	73	654	99	452
22	143	48	364	74	662	100	454
23	152	49	365	75	664	101	455
24	155	50	371	76	703	102	462
25	156	51	411	77	712	103	523
26	162	52	412	78	723	104	526



ACCESSORIES

Accessories can be purchased at midlandusa.com



MXTA25 3dB Gain Ghost Antenna

\$39.99



MXTA25 6dB Gain Whip Antenna

\$49.99

For more MicroMobiles and accessories, please visit our website at midlandusa.com



midlandusa.com



LIMITED WARRANTY (United States)

Subject to the exclusions set forth below, Midland Radio Corporation will repair or replace, at its option without charge, any Midland FRS/GMRS which fails due to a defect in material or workmanship within One Year following the initial consumer purchase.

This warranty does not apply to water damage, battery leak, abuse or misuse of unauthorized accessories, unauthorized service or modification or altered products. Accessories have a 90 day warranty from date of purchase, including any charge cables or batteries.

ANY IMPLIED WARRANTIES. INCLUDING, WITHOUT LIMITATION THE IMPLIED. WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED AS SET FORTH HEREIN AND TO THE DURATION OF THE LIMITED WARRANTY, OTHERWISE THE REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS EXPRESS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER AND IS PROVIDED IN LIEU OF ALL OTHER. WARRANTIES, EXPRESS OR IMPLIED, IN NO EVENT SHALL MIDLAND BE LIABLE. WHETHER IN CONTRACT OR TORT (INCLUDING BUT NOT LIMITED TO NEGLIGENCE, GROSS NEGLIGENCE, BODILY INJURY, PROPERTY DAMAGE AND DEATH) FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT OR ACCESSORY, OR FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE ABILITY OR INABILITY TO USE THE PRODUCTS OR ACCESSORIES TO THE FULL EXTEND THESE DAMAGES. MAY BE DISCLAIMED BY LAW.

For Product Purchase in the USA:

Performance of any obligation under this warranty may be obtained by returning the warranted product, prepaid freight, along with proof of purchase to:

Midland Radio Corporation Warranty Service Department 5900 Parretta Drive, Kansas City, MO 64120

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

NOTE: The above warranty applies only to merchandise purchased in the United States of America or any of the territories or possessions thereof, or from a U.S. Military exchange.



MIDLAND RADIO CORPORATION 5900 Parretta Drive Kansas City, MO 64120 Call 816.241.8500

We'd love to hear from you! Let us know what you think of your new Midland product at:



by visiting us at: midlandusa.com

Note: Features and Specifications are subject to change without notice. MIDLAND RADIO CORPORATION is not responsible for unintentional errors or omissions on its packaging.