

**MIDLAND®**

**MICROMOBILE®** GMRS REPEATER



**MXR10**

[midlandusa.com](http://midlandusa.com)

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## **WELCOME TO THE WORLD OF MIDLAND RADIO**

Congratulations on your purchase of a high-quality Midland product. Your MXR10 General Mobile Radio Service Repeater represents state-of-the-art engineering. Designed for GMRS operation, this compact package is big on performance. It is a quality piece of electronic equipment, skilfully constructed with the finest components. The circuitry is all solid-state and mounted on rugged printed circuit boards. Your MXR10 GMRS Repeater is designed for reliability and trouble-free performance for years to come.

## **FEATURES**

- 10W High Power/5W Low Power (less duplexer insertion loss)
- 16 Channel Capability
- Channels Pre-configured for 8 Wide Band and 8 Narrow Band GMRS Repeater Pairs
- Independent Receive and Transmit Privacy Tone Selection through PC Software
- Wide/Narrow Band Selection through PC Software
- High/Low Transmit Power Selection through PC Software
- Noise Squelch Level Adjustment through PC Software
- Repeater Delay (Hang) Time Adjustment through PC Software
- Keypad Lock Function
- 1-Year Warranty
- Compatible with Midland Repeater Capable GMRS mobiles and portables
- GMRS License Required

## FCC NOTICE

The MXR10 operates on GMRS (General Mobile Radio Service) frequencies, which require a Federal Communications Commission (FCC) license. You must be licensed prior to operating the GMRS repeater. Serious penalties may result from unlicensed use of GMRS channels, in violation of FCC rules, as stipulated in the Communications Act's Sections 501 and 502 (amended). You will be issued a call sign by the FCC that should be used for station identification when operating your radios through the GMRS Repeater. 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 the license application, contact the FCC at 1-888-CALL FCC or go to the FCC's website: <http://www.fcc.gov> and request form 605.

### Exposure To Radio Frequency Energy

Your Midland GMRS repeater 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

Radios generate measurable RF energy exposure only when transmitting. The antenna for this repeater should be fix mounted to permanent outdoor structures. To control your exposure and ensure compliance with the general population or uncontrolled environment exposure limits:

1. All persons should maintain a minimum safe separation distance of 50 inches (127 cm) from the antenna when while the repeater is operating.
2. An antenna with maximum 8.1 dBi gain should be used.

## INSTALLING YOUR RADIO

This repeater will commonly be powered by 120 VAC using the included AC power adapter. It is also possible to power the repeater from 12 VDC using the included DC power adapter. The repeater should be located such that it has convenient access to power and the coax feeding the antenna system. The repeater location selected should ideally be clean and dry and not exposed to direct sunlight.

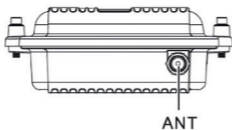
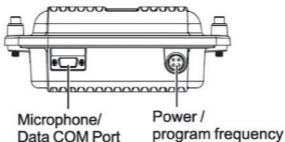
- Read these instructions completely before beginning installation.
- Make sure all necessary tools, materials, and parts are on hand.

## INSTALLING AN ANTENNA

An external antenna (50Ω) is required for the MXR10. The antenna is intended to be attached to permanent outdoor structures. Use the following guidelines to install the antenna:

1. Structures and terrain between the repeater antenna and the radio users will attenuate the signal.
2. The antenna should be mounted as high as possible to help clear obstructions and terrain.
3. The antenna cable should be as short and direct as possible to avoid excess attenuation.
4. The antenna should be mounted so the metal ferrule at the antenna base extends above any metal supporting structure such as a mast.
5. At least two clamps should be used to secure the antenna ferrule to the supporting structure or mast.
6. Lightning arresting devices and adequate grounding should be installed for the antenna, supporting structure and cabling.
7. If the antenna structure exceeds 20 ft near an airport or 200 ft in any location, you should review Title 47 CFR Part 17 regarding FCC and FAA registration, marking and lighting requirements for the antenna structure.

## CONNECTING REPEATER CABLES



Refer to the Port Connections Diagram for connector locations.

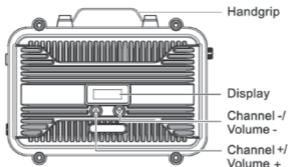
1. Connect the cable from the antenna to the SO239 ANT port.
  2. Connect the AC adapter or DC adapter to the 4 pin POWER port.
  3. Connect the AC adapter to the 120 VAC receptacle (outlet).
- Or
4. Connect the DC adapter to the 12 VDC power source.
  5. The MXR10 will turn on when power is applied.
  6. An optional speaker microphone may be connected to the 9 pin MIC port.
  7. The programming cable is connected to the 4 pin POWER port when used.

Note: The speaker microphone should be disconnected while the radio is being programmed.

## CONTROLS AND INDICATORS

### OPERATION CONTROLS

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



### VOLUME

Short press the ▲ to increase the volume. Short press the ▼ to decrease the volume.

### CHANNEL

Long press the ▲ to increment the channel. Long press the ▼ to decrement the channel.

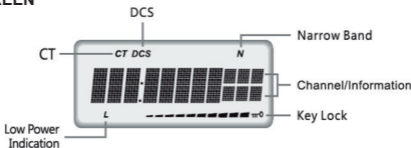
### CTCSS VIEW

Short press ▲ ▼ at the same time to view the current channel CTCSS/DCS settings.

### KEYPAD LOCK

Long press ▲ ▼ at the same time to toggle the keypad lock on/off.

### LCD SCREEN



## OPERATING YOUR REPEATER

1. The repeater will turn on when power is applied.
2. Select the channel of operation from the sixteen pre-configured channel pairs.
  - Channels 1-8 are pre-configured for wide band operation.
  - Channels 9-16 are pre-configured for narrow band operation.
  - All channels are pre-configured for high power.
  - Further customization settings can be selected through the PC software.

## MXR10 DEFAULT CHANNEL CONFIGURATION

Channel	RX Frequency	TX Frequency	RX CTCSS/ DCS	TX CTCSS/ DCS	Band Width	Power
1	467.5500	462.5500	None	None	Wide	High
2	467.5750	462.5750	None	None	Wide	High
3	467.6000	462.6000	None	None	Wide	High
4	467.6250	462.6250	None	None	Wide	High
5	467.6500	462.6500	None	None	Wide	High
6	467.6750	462.6750	None	None	Wide	High
7	467.7000	462.7000	None	None	Wide	High
8	467.7250	462.7250	None	None	Wide	High
9	467.5500	462.5500	None	None	Narrow	High
10	467.5750	462.5750	None	None	Narrow	High
11	467.6000	462.6000	None	None	Narrow	High
12	467.6250	462.6250	None	None	Narrow	High
13	467.6500	462.6500	None	None	Narrow	High
14	467.6750	462.6750	None	None	Narrow	High
15	467.7000	462.7000	None	None	Narrow	High
16	467.7250	462.7250	None	None	Narrow	High



## 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 repeater.
2. Dry the radio with a dry lint-free cloth should it get wet

## MXR10 SPECIFICATIONS

### General

Channel Capacity	16 Channels
Operating Voltage	12 – 24 VDC
Operating Temperature	-22 to +140 °F
Frequency Stability	±2.5 ppm
Impedance	50 Ω

### Transmitter

Frequency Range	462.5500 – 462.7250 MHz
Transmit Power	10 W High / 5 W Low
Transmit Power (with Duplexer)	5.7 W High / 2.8 W Low
Modulation	F3E
Maximum Deviation	±5 kHz WB / ±2.5 kHz NB

### Receiver

Frequency Range	467.5500 – 467.7250 MHz
12 dB SINAD Sensitivity	0.20 μV WB / 0.25 μV NB
12 dB SINAD Sensitivity (with Duplexer)	0.25 μV WB / 0.32 μV NB
FM Hum and Noise	45 dB WB / 40 dB NB
Distortion	5%

### Duplexer

Input Power	10 W
Frequency Separation	5 MHz
Insertion Loss	2 dB
Isolation	65 dB
Return Loss	15 dB

## TROUBLESHOOTING GUIDE

If you experience difficulties using your MXR10, refer to the following chart to correct common operation problems. If you have a problem which you believe requires service, please call our Midland customer service representatives at 816-241-8500 on Monday – Friday between 8 AM to 4:30 PM CST. Many problems can be remedied over the phone without returning the unit for service.

Problem	Solution

## FCC WARNINGS AND STATEMENTS

**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 set up 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device does not cause any harmful interference; and (2) this radio must accept any interference that may cause undesired operations.




Two-Way Radios



Weather Radios



Business 2-Way Radios



Two-Way Radios



Emergency Crank Radios



MicroMobile Radios

## ACCESSORIES

Accessories and other Midland products can be purchased at [midlandusa.com](http://midlandusa.com)

### RPAT01 REPEATER ANTENNA

- 10 dB Antenna
- 2 Meter Length
- Compatible with MXR10 Repeater
- Compatible with RPCB01 Coax Cable



### RPCB01 50 FT COAX CABLE

- Coaxial Cable – 50 ft Length
- Compatible with MXR10 Repeater
- Compatible with RPAT01 Repeater Antenna

## LIMITED WARRANTY

LIMITED WARRANTY (United States and Canada) 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 the power cable and microphone that are included with the unit.

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 EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW.

For Product Purchased 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.

For Product Purchased in Canada:

Performance of any obligation under this warranty may be obtained by returning the warranted product, along with proof of purchase, to your place of purchase in Canada. This warranty gives you specified legal rights. Additional warranty rights may be provided by law in some areas within Canada

## GENERAL NOTES

Features and specifications are subject to change without notice. Midland Radio Corporation is not responsible for unintentional errors or omissions on its packaging.

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**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](http://midlandusa.com)**

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