▲IDLAND®

Owner's Guide

Model FG-2 GMRS / FRS combination with 38 CTCSS codes

FCC Licensing Information

This Midland model FG-2 radio when set for channels 1-7 and 15-22 operates on GMRS frequencies which require a license from the Federal Communications Commission (FCC) for business, personal, and recreational use. A GMRS license held by an individual may be shared by immediate family members.

At the date of this publication the application for your FCC license is made on FCC form 605 (with optional Schedule F). To obtain forms, call the FCC forms hotline at: **1-800-418-3676** or go to **http://www.fcc.gov**.

For questions concerning licensing, contact the FCC at **1-888-CALL-FCC** (1-888-225-5322), or go to **http://www.fcc.gov**.

OPTIONAL ACCESSORIES FOR YOUR RADIO

Accessory Name	Model Number
Ni-MH battery pack..............................……………….....18-B10	
Desk Charger stand (needs 1 SA-02)…………………………18-383*	
Dual Desk Charger stand (needs 2 SA-02)………………………18-385**	
Lapel Microphone with Ear-bud Speaker………………………..22-405	
Speaker/Microphone…………………………………………..22-410	
Stealth Type Noise Canceling Throat Mic with Ear-bud……….. 22-430	
Boom Microphone Headset …………………………………….22-540	

* Requires one SA-02 adapter sleeve
** Requires two SA-02 adapter sleeves
Call 1 816 241 8500 to order accessories or visit our website at midlandradio.com

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Your Midland model FG-2 combines access to FRS (Family Radio Service) channels with operation on GMRS channels. The Family Radio Service is provided for by the FCC and is totally license free. Use of the GMRS channels requires FCC licensing. You can use your FG-2 on the FRS UHF FM band for personal communications at no charge. The FG-2 uses maximum allowable power on FRS for range up to 2 miles. Use for fishing, hunting, picnics, biking, business, or any other activity where communications are needed for convenience or safety. The model FG-2 operates on 22 channels of FRS and GMRS combined to provide the best in quiet and private communication. Channels 1 through 7 are co-shared by FRS and GMRS users. This means that a person with a FRS unlicensed radio can talk to a person using a licensed GMRS radio on these channels. Channels 8 through 14 are exclusively FRS channels. Radios made strictly for GMRS use do not cover these channels. Channels 15 through 22 are exclusively GMRS channels. Radios made for FRS use do not cover these channels. Also this radio offers power save, and auto-squelch.

WARNING
Your wireless hand-held portable transceiver contains a low power transmitter. When the Push-to-Talk (PTT) button is pressed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

To maintain compliance with the FCC's RF exposure guidelines, this transmitter and its antenna must maintain a separation distance of least 2 inches (5 centimeters) from your face. Speak in a normal voice, with the antenna pointed up and away from the face at the required separation distance. The belt clip is for storage purposes only. DO NOT TRANSMIT WHILE USING THE BELT CLIP. To transmit, hold the device away from your body and ensure the antenna is at least 2 inches (5 centimeters) from your body when transmitting.

TIPS FOR GETTING THE MOST FROM YOUR FG-2

Due to the band of operation (462/467 MHz) the FG-2 provides communications that are virtually free of atmospheric interference (skip) that is common on lower frequency bands. Along with this and an antenna system that is very efficient as compared to other unlicensed radio bands, communications range is surprisingly good. Many times the limits to maximum possible range are environmental factors such as blockage caused by trees, buildings, hills, or other obstructions. If you find communication is not possible, many times this can be overcome by moving only a few feet to a new location. Range may be reduced while operating in a vehicle or from inside to outside a metal building. Battery condition also affects range. The FG-2 operates best on alkaline batteries. While this unit has been designed with gaskets for water resistance and ruggedness it is a precision piece of electronic equipment that should not be exposed to water or handled carelessly. Normal care should result in years of trouble free operation. Do not leave batteries installed over a long period of time as leakage may occur that can destroy the radio. Always save your receipt, as it is required for warranty consideration.

A NOTE ABOUT THE CTCSS CODES

This radio incorporates 38 CTCSS (**C**ontinuos **T**one **C**oded **S**quelch **S**ystem) codes that, when activated, prevent the user from hearing other radios that do not have the same code. These codes **do not** make your conversation private. These codes do not change the channel you are on in any way. If you experience difficulties contacting or hearing other radios in your group make sure the **CTCSS** code is set the same on all radios. You may need to change the tone to one all the radios can decode. Some interference can actually block the tone. Be sure to add some time when you press the "PTT" button and you start talking to allow the receiving radio to decode the incoming signal and open the squelch. If you are using the FG-2 where interference from other radios or electrical devices are present, enabling the **CTCSS** codes will usually mute the interference. Many times interference will be noticed by the presence of loud static from the speaker. There is no particular advantage to using CTCSS. Utilizing these codes will have no affect on the actual range you will be able to talk. Before transmitting, press the "MON" button to listen for some one that is currently using the channel. If there is someone on the channel wait until the channel is clear before making your transmission. It is unlikely two people can transmit at the same time on a channel and be received clearly.

PREPARATION
BATTERIES
FG-2 radios operate with 3 AAA Alkaline, Ni-Cad (nickel cadmium) or Ni-MH (nickel metal hydride) batteries (optional) or a Ni-MH battery pack. Ni-Cad batteries provide about 7 hours of use. Alkaline batteries will provide about 20 hours of use and Ni-MH batteries will provide about 14 hours of use. Ni-Cad and Ni-MH batteries

must be charged prior to use. Charge NI-Cad or Ni-MH batteries at least 10 hours. **DO NOT attempt to charge any type of Alkaline batteries in this radio.**

To Install Batteries:

Hold the radio face down. Press the latch so it swings away from the cover.

1. Lift the battery cover slightly. Gently slide the cover off the unit.
2. Insert 3 AAA batteries observing the proper polarity. If a battery pack is used, observe the up arrow is visible and pointing toward the top of the radio.
3. Replace the battery cover over the batteries and fasten with the latch.

Low Battery Indicator:

The battery icon in the lower left of the display will flash when the batteries are in need of charging.

Instructions for optional charger

Install NI-MH (nickel metal hydride) observing their polarity. Plug the power adapter for the 18-F10 charger into any 110/115 V wall socket. Insert the radio into the charging stand with the front facing you and observe that the LED on the charger is lit. Charge the batteries for at least 10 hours for Ni-MH**.** The radio should be turned off while charging. The LED will remain lit when the radio is in the charger.

> 🗎   The LED is only an indicator that shows the batteries are charging. Remove the radio after the prescribed length of time.

For charging with optional wall charger observe instructions supplied with the charger.

 DO NOT attempt to charge any type of Alkaline batteries in this radio.

QUICK USE INSTRUCTIONS:

1. Install fresh alkaline or fully charged Ni-Cad or Ni-MH batteries.
2. Turn the unit on by turning the ON/OFF/VOLUME clockwise until a click is heard.
3. Use the ON/OFF/VOLUME control to adjust the volume. To test the volume setting, press and hold the "**MON**" button so static noise can be heard. The noise can be used as a reference level for volume setting.
4. To talk press the **PTT** (push to talk) button on the left side of the radio and talk in a normal voice into the front of the radio about three inches away from your mouth.
5. To listen release the **PTT** button.

Operating the Radio

DISPLAY SYMBOLS
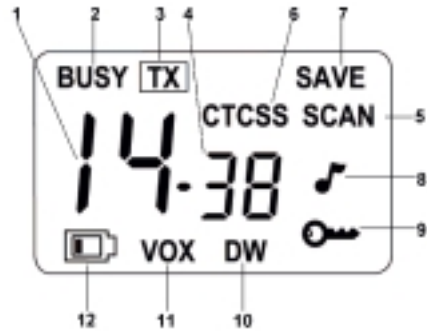
CAUTION: DON'T EXPOSE THE DISPLAY TO EXTREME HOT OR COLD TEMPERATURE

1. **Channel number:** Displays channel number 1-22.
2. **BUSY Symbol:** Indicates activity on the channel.
3. **TX Symbol:** Indicates the unit is transmitting.
4. **CTCSS Code:** Displays the number of the code selected for the channel in use.
5. **SCAN Symbol** Indicates the scan mode is in use
6. **CTCSS Symbol:** Indicates a "Privacy" code is in use.
7. **SAVE Symbol:** Flashes indicating battery save is active.
8. **Musical note** indicates **ROGER BEEP** is on.
9. **Key Symbol** indicates when the keypad has been locked. Only the **"PTT"** and **"CALL"** buttons are active when this indicator is on.
10. **DW Symbol:** Indicates Dual Watch channel selection is active.
11. **VOX Symbol:** Indicates "VOX" is activated
12. **Battery symbol** shows the battery condition. Replace or recharge the batteries when this indicator displays 2 or fewer segments of the battery.

FEATURES AND LOCATION OF CONTOLS

TO TURN THE RADIO ON OR OFF
The ON/OFF/VOLUME control at the top of the radio controls power and volume. A series of tones will be heard confirming that radio is working.

TO CHANGE THE CHANNEL IN USE
Press and release the channel button /\ or \/ to select the desired channel. To change channel rapidly, press and hold the channel button /\ or \/ until the desired channel appears on the display.

7

ACTIVATING SCAN FUNCTIONS

The FG-2 has two scan modes. The most popular and most used is the **"BUSY"** channel scan. This allows the radio to stop on a channel that someone is talking on. When the radio stops on a "Busy" channel, the scan will stop and resume after about 5 seconds. The other is **"DUAL WATCH"**. This allows you to scan only two channels. This is useful when you want to keep track of two other people.

Busy Channel Scan:

1. Press and release the **"F"** button the "SCAN" icon (5) will begin flashing.
2. Press and release the **"UP"** or **"DOWN"** channel button to activate scan. The unit will now begin scanning through the channels.
   - Pressing the **"UP"** or **"DOWN"** channel button during scan will determine if the channels are scanned up or down.
   - Pressing the **"PTT"** (push to talk) button will cause the radio to stop scanning and return to normal operate mode.

Activating Dual Watch

Dual watch is a function that allows you to scan only two channels.
1. Select channel one.
2. Press the **"F"** button three times until **"DW"** (11) is flashing.
3. Select the second channel to be scanned.
   - About 1 second after your selection of the second channel is complete the radio will begin switching between the two channels.
   - When the radio hears activity on either channel, scanning will stop on that channel for about 5 seconds and then resume scanning.
   - If communication is desired on the channel scanning stopped on, press the **"PTT"** button. This will deactivate Dual Watch and allow you to communicate normally.
4. To reactivate Dual Watch repeat steps above.

TO USE CALL BUTTON

Press and release the **CALL** button. A call signal of alternating tones will be sent for about 2 seconds.
   - Both radios must be on the same channel and the radios must be turned on.
   - If any function is selected and no buttons are pressed in 10 seconds, the current settings are retained and the radio switches back to normal operation.

TO ENABLE/DISABLE "ROGER-BEEP"

The radio transmits a rapid tone sequence when the PTT button is released if this feature is active. The default condition is for the "roger beep" to be off.

1. Press the "F" button until you see on the display **"oF"** (depending on previous programming) with a flashing music note   (8) in the display.
2. Press the channel /\ or \/ buttons to select off or on.
    📄   **"oF"** is roger beep off. **"ON"** is roger beep on.
3. Press "**ENTER**" to store your selection.

TO ENABLE/DISABLE "BUTTON PRESS BEEP"
The radio emits a beep when a button is pressed. The default is "key beep on".
1. Press and release the "F" button until you see on the display **""oN"** (depending on previous programming) with the word **"BEEP"** flashing in the in the lower right corner of the display.
2. Press the channel /\ or \/ buttons to select off or on.
📄   **"oF"** is button press beep off. **"ON"** is button press beep on.
3. Press "**ENTER**" to store your selection.

TO ENABLE / DISABLE KEY BOARD LOCK
To enable the KEYBOARD LOCK press and hold the "**ENTER**" button for 2 seconds. The display will contain a key symbol (9). **PTT**, **MON** and **CALL** buttons will still be active. The "**ENTER**" button will also activate the backlight for 5 seconds. When radio is in lock mode and any other keys are pressed a tone will be heard. To disable the KEYBOARD LOCK, press and hold the "**ENTER**" button for about 2 seconds.

POWER SAVE CIRCUIT
This part of the operation of the radio is completely automatic and not adjustable. When the radio has not transmitted or received a signal for about 8 seconds it will begin to cycle from a sleep mode to fully on. This occurs several times a minute. If a signal is received or you cause the unit to transmit the radio will become fully awake. This cycling from sleep to fully on increases the standby battery life more than 50%.

USING THE MONITOR FUNCTION
1. Press and hold the **"MON"** button on the side of the radio to open the squelch.
    📄   This allows you to override the squelch and the "CTCSS" tones. This is useful to monitor the channel before you transmit to ensure there is not someone using the channel when you have "CTCSS" tones programmed. This is also useful if you suspect someone in your group does not have the proper "CTCSS" tones programmed.
2. Release the **"MON"** button to restore the squelch to normal.

TO OPERATE HANDS FREE VOX
(VOICE OPERATED TRANSMIT)

9

To get the most use from the "VOX" feature you must first determine what sensitivity level is needed to activate the "VOX" control. Sensitivity is how loud you have to talk to activate the "VOX" circuit. The "VOX" has three levels of sensitivity that can be adjusted. The 1 option you can talk in a normal voice with no background noise to activate the "VOX" circuit. The option 2 will require more voice level to activate the "VOX" circuit. This is useful in slightly noisier areas that might activate the "VOX" without talking. The option 3 will require the most voice level to activate the "VOX" circuit. This will be useful in very noisy areas. The next adjustment is the *delay*. This is a function of the "VOX" that keeps the radio in transmit mode after you stop talking. A delay that is set to short will cause the "VOX" circuit to stop between some words. The delay is adjustable to three levels. Level 1 will give about one half second of delay, level three will give you about one and one half seconds of delay. By activating the "VOX" you only have to talk into the front of the radio or use a headset to make the radio transmit. The **PTT** (push to talk) button is not functional in "VOX" mode. It is recommended to use a headset when using the "VOX" feature.

NOTE: It is recommended to disable the Roger Beep when VOX is in use. See page 8 for instructions.

Setting VOX Functions.

Setting VOX Levels

1. With the radio in the off position, press and hold the "**CALL**" button and turn the radio on. The display will show "L" followed by a 1, 2 or three depending on previous settings.
2. Press the channel "**UP**" or "**DOWN**" buttons to select the level desired.
   - 📄 As described earlier L 1 will be the most sensitive and L 3 will be the least sensitive.
3. Press the "**F**" button to switch to the Delay setting. A "d" followed by a d1, d2 or a d3 will show on the display depending on previous settings.
4. Press the channel "**UP**" or "**DOWN**" buttons to select the level desired.
   - 📄 As described earlier d 1 will be the shortest and d 3 will be the longest delay.
5. Press the "**ENTER** button to store your settings and return to normal operation mode.

TO ENABLE / DISABLE VOX MODE
Press and hold the "**F/VOX**" button on the front of the radio for about 2 seconds. "VOX" will be displayed when enabled. Talk into the front of the radio or the headset microphone. (head set is recommended) To listen stop talking.

ACTIVATING "PRIVACY" CODES
To activate "CTCSS" codes

- 🖹 Activating the "CTCSS" code will prevent you from hearing any conversation that is not using the <u>same</u> "CTCSS" code. This <u>does not</u> make your conversation private. See the "Note about the CTCSS Codes" previously in this manual.

1. Press the **"F"** button twice to cause the icon **"CTCSS"** to be displayed in the upper left of the display to flash.
2. Press and release the **"UP"** or **"DOWN"** buttons to select the "CTCSS" code you desire.
3. Press "**ENTER**" to store the code setting for that channel.
   - 🖹 A code of "**oF**" means no code is programmed.
   - 🖹 You must do this for each of the channels you want CTCSS codes on.
   - 🖹 Activating the "CTCSS**"** code will prevent you from hearing any conversation that is not using the <u>same</u> "CTCSS**"** code. This <u>does not</u> make your conversation private.
   - 🖹 It is recommended if wish to set another channel for CTCSS code, choose a different code than the ones in use.

The following is a list of frequencies of the CTCSS codes. Different brands of radios may use a different number for the frequencies. For operation with other brands of radios the selected CTCSS frequency must match.

01=67.0 Hz	11=97.4 Hz	21=136.5 Hz	31=192.8 Hz
02=71.9 Hz	12=100.0 Hz	22=141.3 Hz	32=203.5 Hz
03=74.4 Hz	13=103.5 Hz	23=146.2 Hz	33=210.7 Hz
04=77.0 Hz	14=107.2 Hz	24=151.4 Hz	34=218.1 Hz
05=79.7 Hz	15=110.9 Hz	25=156.7 Hz	35=225.7 Hz
06=82.5 Hz	16=114.8 Hz	26=162.2 Hz	36=233.6 Hz
07=85.4 Hz	17=118.8 Hz	27=167.9 Hz	37=241.8 Hz
08=88.5 Hz	18=123.0 Hz	28=173.8 Hz	38=250.3 Hz
09=91.5 Hz	19=127.3 Hz	29=179.9 Hz	**oF** =OFF
10=94.8 Hz	20=131.8 Hz	30=186.2 Hz	

RESETTING THE RADIO
If the radio stops responding to button presses or otherwise does not function properly in some cases the radio can be reset to restore normal operation.

To reset the radio: With the radio off, press and hold the **"F"** button and turn the radio on. Release the **"F"** button when the radio powers up. (see turning the radio on)

TROUBLESHOOTING

PROBLEM	SOLUTION
No Power	1. Check battery installation and/or replace batteries
Cannot receive messages	1. Make sure the volume is set high enough. 2. Change your location, you may be out of range. 3. Disable CTCSS code. Make sure all parties are using the same code. 4. Install batteries properly or replace.
Range is short	1. Operating the radio in a vehicle or metal building will decrease the range. If possible operate outside of vehicles or buildings. 2. Carrying the radio so that the antenna is very near the body will decrease the range. Hold the radio in the open for the best range. 3. Battery condition can affect range. Replace or recharge batteries.
Radio squeals when receiving messages	1. Check battery condition. Usually lowering the volume stops the squealing. This indicates weak batteries.
Messages not transmitted.	1. If **PTT** button is not responding, check to see if VOX is active. 2. If VOX is in use, check for correct VOX level setting.
Interference/Static	1. Change your location. The interference may be caused by nearby electronic or electrical equipment.
Cannot change channels	1. Make sure keyboard is not locked. 2. Make sure the radio is not transmitting.
Battery icon flashes	1. Replace alkaline batteries or recharge rechargeable batteries.
Display is dim	Reposition or replace batteries.

CARE OF RECHARGEABLE NI-CAD AND NI-MH BATTERIES

ALWAYS DISPOSE OF BATTERIES PROPERLY

Always follow the battery manufacturer's recommendations for charging and disposing of Ni-Cad and Ni-MH batteries.

The following is meant as general information regarding Ni-Cad/Ni-MH batteries.
.
1. Occasionally allow the batteries to fully discharge before recharging. Full discharge will be indicated by the low battery indicator coming on during receive operation.

2. Always allow the battery to fully charge before using. This requires 10 hours with the approved charger. (Ni-MH batteries require 16 hours for full charge.)

3. The above will prevent the batteries from developing "memory" which effectively reduces their capacity.

4. It is better to store Ni-Cad batteries that are discharged rather than charged. Ni-MH batteries are best stored charged.

SERVICE:

If you have a problem which you believe requires service, please call first and speak with a service technician. Many problems can be remedied over the phone without returning the unit for service.

If it ever becomes necessary to return your unit for service:

- Pack the unit in its original box and packing. Improper packing may result in damage during shipment.
- Include a full description of any problems.
- Include a daytime telephone number and or E-mail address.
- Include a money order for $7.50 to cover shipping and handling (this may not be required in some states).
  - You do not need to return accessory items (charger, batteries, wrist strap, owners guide) unless they maybe directly related to the problem.
- Include a photocopy of the bill of sale or other proof of purchase showing the date of sale. This information must be included before warranty service can be considered.
- A flat rate of $35.00 will apply to repairs not covered by the 1-year warranty. Payment is accepted by Cashiers Check, Money Order, Master Card or Visa only. Personal checks will not be accepted.
  - Items not covered by the warranty include abuse, water damage, battery leak damage, broken antennas, broken battery latch

TECHNICAL SPECIFICATIONS∗

GENERAL
Frequency range...**462/467 MHz**
Channels...**22**
Modulation type... **FM**
Antenna impedance ....**50 Ohm**
Loudspeaker...**8 Ohm 0.5W**
Microphone...**electret type**
Power supply..**3 AAA Ni-cads or Alkaline (3.6/4.5VDC)**
RECEIVER
Sensitivity at 12dB Sinad..**0.25μV**
Selectivity...**50 dB**
Squelch range...…....**automatic**
Audio output power..**0.25W @ 8 Ohm (10% distortion)**
Distortion at 1000 mV..**7%**
Audio frequency response...**400-2400 Hz**
TRANSMITTER
RF Output Power..………**nominal 500 mW @ 4.5VDC**
Frequency Tolerance...**0.00025%**
Harmonic Suppression..**more than 50 dB**
Modulation..**FM +/- 2.5 kHz**

∗Specifications are nominal and subject to change
CHANNEL FREQUENCIES (MHz)
Channels 15 through 22 are exclusively GMRS channels. A license is
required for operation on these frequencies.

01=462.5625 F+G	07=462.7125 F+G	13=467.6875 F	19=462.650 G
02=462.5875 F+G	08=467.5625 F	14=467.7125 F	20=462.675*
03=462.6125 F+G	09=467.5875 F	15=462.550 G	21=462.700 G
04=462.6375 F+G	10=467.6125 F	16=462.575 G	22=462.725 G
05=462.6625 F+G	11=467.6375 F	17=462.600 G	
06=462.6875 F+G	12=467.6625 F	18=462.625 G	

* GMRS emergency channel 462.675MHz.

LIMITED WARRANTY

Midland Radio Inc. will repair or replace, at its option without charge, any Midland FRS transceiver 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 damage or abuse.

This warranty does not include any carrying cases, earphones, or antennas which may be a part of or included with the warranted product, or the cost of labor for removal or re-installation 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 purchase date, to Midland Radio Inc., Warranty Service Department, 1120 Clay St., North Kansas City, Missouri 64116.

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.

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16