8 Mile FRS/GMRS Outdoor Sensor Mounting

Installing The Batteries

Loosen the four front panel screws. They do not need to be unscrewed from the front case cover completely. Pull the battery holder out slowly to install the 10 AA batteries. Please carefully observe the battery polarity when installing the batteries. Even one battery installed the wrong way will prevent the sensor from working properly. The protruding nozzle (eye) is orientated to the top. If inverted so nozzle is on the bottom, the sensor will not detect. It will take the unit approximately 60 seconds to stabilize before the sensor will trigger the handheld receiver. It is possible that one initial trigger may occur when the batteries are completely installed. Set the channels if necessary and write down the channel and CTSS code on the sensor in case the receiver is changed. The default is channel 1 CTSS code 00.

Do not use cordless tools to reinstall the 4 front panel screws as this will crack the front case. Use a #2 Phillips screwdriver and snuggly hand tighten.

Mounting The Sensor

The unique swivel bracket allows mounting the sensor on the back side of a pole, tree, building, etc. It is preferred to tilt the sensor slightly down to avoid distant triggers .

Use at least 3 mounting screws on mount base when attaching to surface. Tighten large wing nut firmly to prevent sensor from moving.

The sensor housing can be painted to match it's mounting environment. Do not paint the internal nozzle of the sensor eye as this will damage the unit. Do not paint a dark color if the sensor is mounted in direct southern sunlight as it may cause the box to overheat during the hot summer months when temperatures exceed 90 degrees.

- Mount the sensor approximately 3 foot high from the ground.
- Use a solid mounting surface that will not sway when windy.
- Do not let tree branches dangle or high weeds grow in front of the sensor eye.
- Keep in mind that larger objects can be potentially be detected for 300 to 400 feet away.
- Do not point the sensor toward sunlight reflections as it may cause the sensor to trigger.

Changing channels, call tones, and power settings.

Take the handheld receiver with you to verify operation of sensor and receiver together.

Before performing any changes to settings of the outdoor sensor, remove the front cover, locate the two miniature switches located in the upper left hand corner facing sensor. They must be down before any of the listed setting changes below can be performed. The sensor will default to Channel 1, High Power, CTCSS Code 00, If your handheld receiver does not pick up any local activity from other users, it is not necessary to change the channel. If you are only a few miles away or less, FRS license free channels (8 - 14 should be adequate)

Normal Operation Mode

Programming Mode

When switching from normal to program mode, flip switch 2 down first, then switch 1 down. When changing from programming to normal mode, flip switch 1 up first, then switch 2 up.

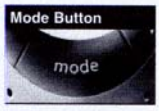
The screen will look like this when switching to program mode. The default is channel 1 and CTSS Code 00. It is recommended to change the channel or code if you have interference or other parties on the same channel.

To change channels simply press the channel up or down button at the right of the display. After the channel to use is selected, press the lock button to set the channel. Switch both miniature toggle switches to the up position when you are finished making channel or tone changes.

Important! You must have the sensor and the handheld receiver on the same channel and CTSS code or they will not communicate. The sensor will display the channel and CTSS code when switching to programming mode.

Changing Call Tone Settings

You can change the call tone sound allowing for up to 10 different sensors with 10 different sounds. You can also use the same tones for multiple sensors in the same area. To change the call tones unit must be in programming mode (both toggle switches up) and press the mode button 14 times until you see the C followed by a number 1 - 10.



10 Call Tone Settings

You can choose between ten (10) different call tone settings to transmit a unique call alert.

To Change a Call Tone Setting:

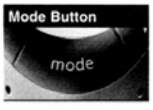
1. Press the **Mode** button until the letter "C" and the current call tone number (1 through 10) is displayed. The current call tone will sound for one (1) second.
2. Press the **Channel Up** or **Channel Down** button to hear the other call tone settings.
3. a. Press the **Mode** button to enter the new setting and proceed to other functions.
   b. Press the **Lock** button to enter the new setting and return to **Standby Mode**.

It is unlikely to change the CTSS code from the default 00. However, it adds 38 codes to 22 channels allowing for an extremely minimal chance of the same user interference in high user FRS/GMRS areas.

CTCSS Privacy Codes

CTCSS (Continuous Tone Coded Squelch System) is an advanced tone coding system allowing you to select one of 38 privacy codes to reduce interference from other users on the channel.

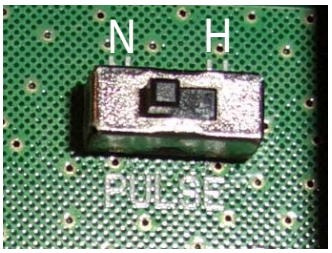
If you are using a privacy code, both radios must be tuned to the same channel and privacy code to communicate. Each channel will remember the last privacy code you selected.



To Select a Privacy Code:

1. After selecting a channel, press the **Mode** button until the small numbers next to the channel number flash on the LCD.
2. Press the **Channel Up** or **Channel Down** button to select a privacy code. You can hold the **Up** or **Down** button for fast advance.
3. When your desired privacy code is displayed:
   a. Press the **Mode** button to enter the new setting and proceed to other functions.
   b. Press the **Lock** button to enter the new setting and return to **Standby Mode**.
   c. Do not press any buttons for 15 seconds to enter the new setting and return to **Standby Mode**.

Sensor sensitivity adjustment.



Leave the sensitivity switch inside the sensor pir board on N for normal. H is for harsh environment and not high. The sensitivity will actually be reduced with the setting on H. Unless you are operating in very poor environments, N is recommended.

FRS/GMRS Frequency Allocation and Compatibility

A	B	C
1	FRS/GMRS	462.5625
2	FRS/GMRS	462.5875
3	FRS/GMRS	462.6125
4	FRS/GMRS	462.6375
5	FRS/GMRS	462.6625
6	FRS/GMRS	462.6875
7	FRS/GMRS	462.7125
8	FRS	467.5625
9	FRS	467.5875
10	FRS	467.6125
11	FRS	467.6375
12	FRS	467.6625
13	FRS	467.6875
14	FRS	467.7125
15	GMRS	462.5500
16	GMRS	462.5750
17	GMRS	462.6000
18	GMRS	462.6250
19	GMRS	462.6500
20	GMRS	462.6750
21	GMRS	462.7000
22	GMRS	462.7250

Low power channels 8 through 14 should be used to conserve battery life if distance is 2 miles or less.

Channel 8 through 14 require no FCC license and distance will be approximately 2 to 3 miles. GMRS operation frequencies require FCC license but distance is up to 8 miles.

A word about wireless expectations.

This wireless system gives us the freedom to be more mobile in our busy lifestyles. Keep in mind there are ways to enhance your performance (distance) from the sensor to the receiver. Due to the fact that the receiver is portable, moving around with the handheld receiver in your possession, there is a chance at longer ranges, that communication may not be consistent. It is always best to test your range on a regular basis. Poor line of sight, terrain, metal buildings, heavy wooded areas, etc, are all range reducers but are not a factor at a few miles as they may be at 7 or 8 miles.
Example: If your handheld is in a vehicle or solid metal building your range will be reduced to approximately 2 to 3 miles in GMRS mode vs open field rating of 8 miles. Still, nothing in the industry comes close to the range of our system.

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Troubleshooting Tips

Tips on radio frequency signal. (Transmitter to Receiver)

- Most problems occur with receiver and transmitter not communicating because of many variables.
- We recommend initially to set your receiver in a window and at line of sight to "see" the transmitter outside.
- Moving receiver only several feet in a different location or moving outside sensor to another location can also improve distance.
- Trees, buildings, terrain, weather, radio interference can all effect the distance of your driveway alarm.
- To verify that outside sensor is working, bring sensor indoors and set on flat surface pointing towards ceiling in house, then slowly wave hand in front of eye. Receiver should beep, indicating it is sensing.
- Radio frequency interference in your area will degrade distance of units. (Not as common in rural areas but possible)
- Heavy snow or rain can affect the distance of transmission from transmitter to receiver.
- If you set up unit and have problems, Experiment ! Try different locations ! Small movements is usually all that is needed !

Falsing Of Unit (Beeping but nothing crossing path of sensor.)

- Pointing sensor toward sun or other heat source. Heat can rise or reflect off of buildings or roads.
- Detecting traffic off of main road if pointed in general direction.
- Excessive wind causing movement of sensor. Must be mounted securely and on large object.
- Low batteries may cause falsing or erratic operation.
- Very high winds 40 mph and above, may occasionally trigger unit.
- Higher winds can sway telephone poles and trees more than you think. Movement of objects will cause unit to trigger.
- For best results, mount sensor about 3 ft. high and 10 to 30 ft. back from driveway.
- Tip sensor down so it doesn't look into the distance as much or relocate to other side of driveway and try.
- Weeds and long grass directly in front of the sensors eye will cause triggering of sensor.

Not Sensing Vehicles or People

- Snow with wind blowing in direction of eye can cause snow buildup in eye. Blow snow out or clean gently with tissue.
- Low batteries may cause improper or weak sensing.
- It is possible that sensor will not detect a cold car leaving drive. (must sense heat and movement)
- Dirty lens will cause poor detection. Clean with soft tissue and mild soap & water, *Gently!*
- Make sure sensor is about 3 ft. high and level or slightly tipped down toward the ground.
- Heavy rain or snow may reduce sensitivity of detection. Especially if 20 ft. or more from driveway.
- Remember that sensor must detect both heat and movement. Tires and underneath of vehicle, are good heat sources.

- Do not pound with hammer and nails to mount sensor outside. Use only screws and tighten firmly.
- Any tampering or modifications will void warranty.
- Do not over tighten mount screws or poke objects into eye ! Any physical damage to units are not covered under warranty !
- Do not use cordless screwdrivers to tighten 4 front panel screws. They may crack case or strip threads. Only hand tighten firmly.
- After changing batteries, sensor will not operate for about 1 minute.

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