GMRS Two-Way Radio

Model: SEI-GMRS15

User Guide

FCC COMPLIANCE

The SEI-GMRS15 GMRS Two-Way Radio 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, 15-22 or repeated channels RP15-22 on the SEI-GMRS15 radio. 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 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 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.

The FCC ID for this Model (SEI-GMRS15) is 2BADE-GMRS15

FCC STATEMENT:
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.
3)

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: FCC's RF Exposure guidelines, this equipment should be installed and operated with minimum distance between 64.5cm the radiator to your body.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: reorient or relocate the receiving antenna, increase the separation between the equipment and receiver, connect the equipment into an outlet on a circuit different from that to which the receiver is connected, consult the dealer or an experienced radio/TV technician for help.

PRECAUTIONS

Please observe the following precautions before install or use this GMRS Two-Way Radio to prevent fire, personal injury, or radio damage:

- This radio is designed for a 12V DC power supply. Don't use a 24V battery to power on the transceiver.
- Do not place the radio in excessively dusty, humid or wet areas, nor unstable surfaces.
- Please keep it away from interferential devices (such as TV, generator etc.)
- Do not expose the radio to long periods of direct sunlight nor place it close to heating appliances.
- Do not transmit with high output power for extended periods; the radio may overheat.
- If an abnormal odor or smoke is detected coming from the radio, turn OFF the power immediately. Contact SoundExtreme customer service or your dealer.

1. FEATURES

The SEI-GMRS15 GMRS Two-Way Radio (hereafter is referred as the Radio) is a 2-way radio designed for General Mobile Radio Service (GMRS) operation.

Main Features

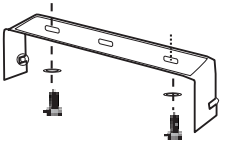
- 15-Watt GMRS Radio
- 15 GMRS Channels (1 – 7 & 15 – 22), 7 GMRS Receiving Channels (8 – 14) and Repeater Channels.
- 1075 Privacy Codes (51 CTCSS and 1024 DCS)
- Amateur Transceiver Mode and Professional Transceiver Mode option.
- 199 programmable memorized channels, identified by editing name.
- CTCSS/DCS Scan function.
- Automatic calling Identification function by CTCSS or DCS signaling.
- Different band width per channel, 25K for wide band, 12.5K for narrow band.
- Frequency step selections from 2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K, 50K
- Hi or Low Power Settings
- External Speaker Jack
- GMRS License Required

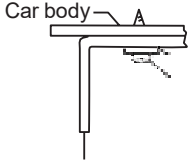
2. INSTALLATION

2.1 Transceiver Installation

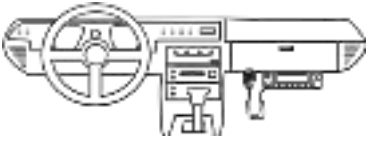
To install the transceiver, select a safe, convenient location inside your vehicle that minimizes danger to your passengers and yourself while the vehicle is in motion. Consider installing the unit at an appropriate position so that knees or legs will not strike it during sudden braking of your vehicle. Try to pick a well-ventilated location that is shielded from direct sunlight.

1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (2pcs) and flat washers (2pcs).





Washer (M5) Tapping screw (M5x20mm)

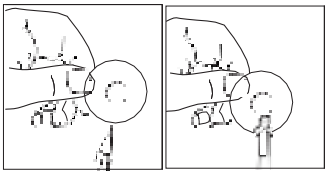


Mounting bracket

2. Position the transceiver, then insert and tighten the supplied hexagon SEMS screws.
   Double check that all screws are tightened to prevent vehicle vibration from loosening the bracket or transceiver.

2.2 Microphone Hanger Installation

1. Choose idea location and mark for screw point.
2. Fix the hanger using the included screws.



2.3 Power Connection

» *Locate the power input connector as close to the transceiver as possible.*

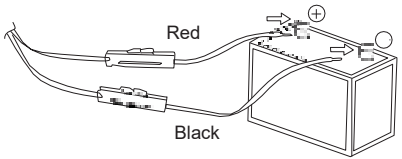
Connect to Vehicle Battery

The vehicle battery must have a nominal rating of 12V. Never connect the transceiver to a 24V battery. Be sure to use a 12V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient, the display may darken during transmission, or transmitting output power may drop excessively.

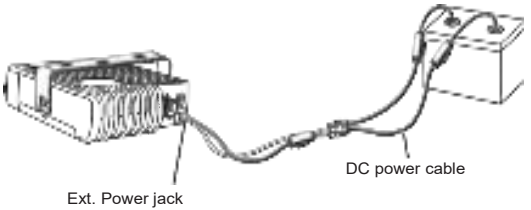
1. Route the DC power cable supplied with the transceiver directly to the vehicle's battery terminals using the shortest path from the transceiver.
   - We recommend you do not use the cigarette lighter socket as some cigarette lighter sockets introduce an unacceptable voltage drop.
   - The entire length of the cable must be dressed so it is isolated from heat, moisture, and the engine secondary (high voltage) ignition system/ cables.
2. After installing cable, in order to avoid the risk of damp, please use heat-resistant tap to tie together with fuse box. Don't forget to reinforce whole cable.

3. In order to avoid the risk of short circuit, please disconnect vehicle connection with negative (-) of battery, then connect with radio.

4. Confirm the correct polarity of the connections, then attach the power cable to the battery terminals; red connects to the positive (+) terminal and black connects to the negative (-) terminal.
   - Use the full length of the cable without cutting off excess even if the cable is longer than required. In particular, never remove the fuse holders from the cable.
5. Reconnect any wiring removed from the negative terminal.



6. Connect the DC power cable to the transceiver's power supply connector.



Fixed Station Power Connection

In order to use this transceiver for fixed station operation, you will need a separate 12V DC power supply (not included). Please contact local dealer to require.

The recommended current capacity of your power supply is 10A.

1. Connect the DC power cable to the regulated DC power supply and ensure that the polarities are correct. (Red: positive, Black: negative).
   - Do not directly connect the transceiver to an AC outlet.

- Use the supplied DC power cable to connect the transceiver to a regulated power supply.
- Do not substitute a cable with smaller gauge wires.

2. Connect the transceiver's DC power connector to the connector on the DC power cable.

»*Press the connectors firmly together until the locking tab clicks.*

» Before connecting the DC power to the transceiver, be sure to switch the transceiver and the DC power supply OFF.

» Do not plug the DC power supply into an AC outlet until you make all connections.

2.4 Fuse Replacement

The Radio has a 5A, 250V in-line fuse.
If the fuse blows, determine the cause, then correct the problem. After the problem is resolved, replace the fuse. If newly installed fuses continue to blow, disconnect the power cable and contact your dealer or SoundExtreme customer service for assistance.

1. Open the fuse cap and remove the 5A Blade Fuse.

Use Caution: Do NOT remove Fuse if the Fuse Holder is wet. An improperly fitted cap may cause electric shock and injury if wet.

2. Place a new 5A Blade Fuse into the Fuse Holder, close the cap and push firmly to be sure the cap snaps into place.

Only use fuses of the specified type and rating, otherwise the transceiver could be damaged.

» *If you use the transceiver for a long period when the vehicle battery is not fully charged, or when the engine is OFF, the battery may become discharged, and will not have sufficient reserves to start the vehicle. Avoid using the transceiver in these conditions.*

2.5 Antenna Connection

Before operating, install an efficient, well-tuned antenna (not included). The success of your installation will depend largely on the type of antenna and its correct installation. The transceiver can give excellent results if the antenna system and its installation are given careful attention.

Use a 50Ω impedance antenna and low-loss coaxial feed-line that has a characteristic impedance of 50Ω, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed- lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference to nearby broadcast television receivers, radio receivers, and other electronic equipment.

»*Transmitting without first connecting an antenna or other matched load may damage the transceiver. Always connect the antenna to the transceiver before transmitting.*

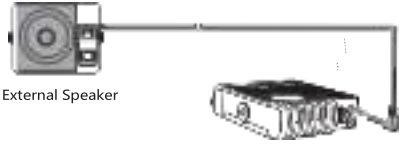
»*All fixed stations should be equipped with a lightning arrester to reduce the risk of fire, electric shock, and transceiver damage.*

The possible locations of antenna on a car are shown as following:

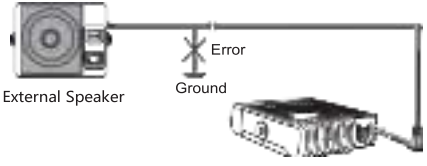
If you are not sure what kinds of antenna to purchase, contact your dealer or SoundExtreme customer service for assistance. You can also visit www.soundextreme.us to purchase an antenna that is compatible with this Radio.

2.6 External (Optional) Speaker Connection

If you plan to use an external speaker (not included), choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5mm (1/8") mono (2-conductor) plug.

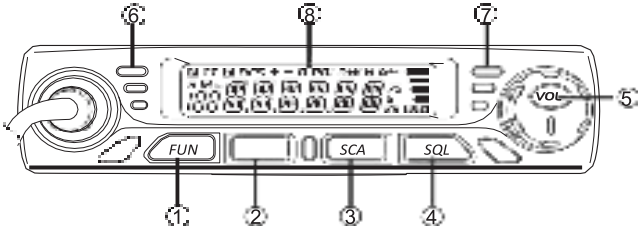


» *External speaker adopt double port BTL, please care about the connecting way. The speaker can not connect with the ground, otherwise the speaker will be fault. The wrong connecting way as the following picture.*



3. PANELS & FUNCTIONS

3.1 Front Panel



Basic Function

NO.	Button/Knob	Function
1	FUN	Function Menu
2	V/M	VFO/Memory mode switch
3	SCA	Scan
4	SQL	Squelch
5	VOL Knob	Power on/off and volume knob
6	RX indicator	Light on when squelch valid
7	TX indicator	Light on when TX
8	LCD display	Display channel / frequency / function setting
9	Speaker	Listen to calls

Press Fun button until F icon appears then press following button

NO.	Button	Function
1	V/M	Channel store
2	SCA	Channel scan delete or add
3	SQL	CTCSS/DCS setting
4	VOL	Keypad lock

Hold Fun key then press following button

NO.	Button	Function
1	V/M	Delete memory channel
2	SQL	Voltage display function

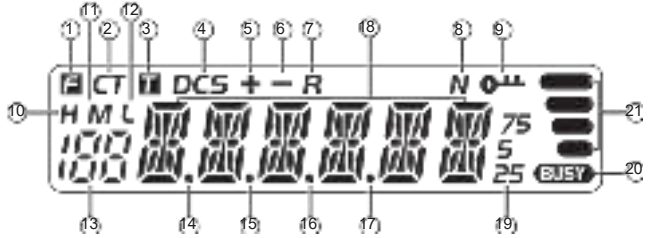
Press and hold following button

NO.	Button	Function
1	FUN	Enter setting mode after hold it for 2 seconds
2	SQL	Turn monitor

3.2 Rear Panel

NO.	Cable/Jack	Function
1	Antenna connector	Connect a 50Ω antenna
2	External Speaker jack	Connect optional external speaker
3	Power cable	Connect a standard DC power cable

3.3 Display



1. **F**: Display when press FUN key
2. **CT**: Display when setting CTCSS
3. **T**: Display when setting TX CTCSS
4. **DCS**: Display when setting DCS
5. **+**: Display when setting positive offset direction
6. **-**: Display when setting negative offset direction
7. **R**: Display when turn on reverse frequency function
8. **N**: Display when setting narrow band
9. Display when setting keypad lock function
10. **H**: Display when setting high power
11. **M**: Display when setting middle power
12. **L**: Display when setting low power
13. **188**: Display memory channel number in memory mode
14. Decimal point: Display when store channel indicates empty channel
15. Decimal point: Display this icon when setting channel scan skip
16. Decimal point: Indicates the decimal point of frequency and the scanning function
17. Decimal point: Display this icon when setting CTCSS/DCS scan
18. 18.888888: Indicate frequency or memory channel name
19. **25/5/75**: Display this icon when indicates the end of the frequency.
20. **BUSY**: Display when receive the signal or turn on the monitor function
21. **RSSI**: Display TX/RX signal strength

4. OPERATING MODE AND FUNCTION MENU

4.1 Operating Mode

The Radio has two operating modes: Amateur Transceiver Mode and Professional Transceiver Mode. You can set it up with Function Menu No.10 described in Section 7. The Radio factory default setting is Amateur Transceiver Mode.

There are 3 main differences between Amateur Transceiver Mode or Professional Transceiver Mode

	Amateur Mode	Professional Mode
Channel information Display (Display Mode)	Frequency + Channel Channel+ Name Tag	Channel
Channel turning	Preset Channels VFO	Preset Channels
Menu and button features	All available	Some locked out

Amateur Transceiver Mode

There are 2 Display Mode settings for Amateur Transceiver Mode

1. Frequency + Channel display mode
   Under this display mode, new setting of channel operation and shortcut operation can be temporarily used by user. Once the radio is turned off or switched to another channel, the temporary setting will be erased and back to initial settings.

2. Channel+ Name Tag display mode
   Under this display mode, it will display corresponding channel name when the current channel is edited with name. Otherwise, it will display frequency + channel. Its operations are the same as frequency + channel mode.

Under the Amateur Mode, the Radio can be set to VFO Mode (Frequency mode), where the radio can be tuned to any frequency in the GMRS frequency range. You can press [V/M] key to turn on or turn off the VFO Mode.

Professional Transceiver Mode

There is only one Display Mode for Professional Transceiver Mode. Under this mode, it will display channel number.

Except scan, other shortcut operations do not function.

4.2 Function Menu

The Radio has 20 function menu options. Menu No.1 to No.10 is for channel function settings, and menu No.11 to No.20 is for general setting settings.

5. BASIC RADIO OPERATION

5.1 Turn on/off the Radio

When the Radio is power off, press **[VOL Knob]** to turn on. You can press and hold **[VOL Knob]** for 2 seconds to turn the Radio off.

5.2 Input Power Voltage Display

When the Radio is on, press **[FUN]** button and **[SQL]** button same time for 1 second, the input power voltage will show on the LCD display. The LCD display voltage will change when the power voltage changes.

» *The display voltage range is from 9V to 17V, the display data is a rough data, if you need exactly data pls use the voltmeter to test.*

5.3 Adjusting the Volume

When the Radio is on, turn **[VOL Knob]** to increase or decrease the volume. Turn **[VOL Knob]** clockwise to increase the volume, and anti-clockwise to decrease volume. The LCD display will show VOL-XX, XX is the volume level. When set the volume as 01 level, the Radio is muted.

5.4 Turn on/off VFO Mode

When the Radio is in standby, press **[V/M]** button to turn on the VFO Mode, **M** will appear on the left of the LCD screen. Press the [V/M] button again will turn off the VFO Mode.

5.5 Adjusting Frequency/Channel

1. In VFO mode,
   - Short press **[UP]** or **[DN]** key on the Microphone to increase or decrease frequency.
   - Hold **[UP]** or **[DN] key** to fast increase or decrease frequency.
   - Short press **[VOL knob]**, the MHz-digit will flash, hold **[UP]** or **[DN]** key will change the frequency move by 1MHz. Press **[VOL]** key again, the 10th MHz-digit will flash, hold **[UP]/[DN]** key will change the frequency move by 10MHZ, press any key exit this

mode.

2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K and 50K total nine step size available for this radio.

2. When VFO Mode is turned off, short press **[UP]** or **[DN]** key on the Microphone to increase or reduce channel by one step. Hold **[UP]** or **[DN]** key to fast increase or reduce channel.

5.6 Receiving

When the channel you are operating being called, the screen shows **BUSY** icon and field strength. The green RX indicator light on, in this way you can hear the calling.

If the transceiver has set at higher squelch level, it may fail to hear the calling.

If the Radio LCD display **BUSY** icon and field strength, the green LED Rx indicator flashes, but cannot hear the calling, it means the Radio has received matching carrier but with unmatching signaling (Reference CTCSS/DCS encode and decode for proper settings).

5.7 Transmitting

Press and hold **[SQL]** button to monitor for a while, to confirm the current channel is not busy, then release **[SQL]** key and back to standby state. Hold **[PTT]** key on the Microphone and speak into microphone. Hold the microphone approximately 2.5 - 5.0cm from your lips and speak into the microphone in your normal speaking voice to get best timbre.

Hold PTT key, the LED lights red and power strength show in the screen, indicates it is transmitting, release PTT to receive.

5.8 VFO Mode Channel Edit

1. In VFO mode, press **[UP]**/**[DN]** key on the Microphone to change to a desired frequency.
2. Set up signaling for the selected frequency.
   - Press **[FUN]** button, then the **[SQL]** button to enter into CTCSS/DCS setup.
   - Press **[UP]** /**[DN]** key or turn **[VOL Knob]** to a desired signaling.
3. Set up channel function

- Enter channel menu No 1-10 and choose related setup. See more details on Section 7.

4. Assign a channel number for the selected channel
   - Press **[FUN]** button, the LCD displays **F** icon, if the channel number flash, it means current channel number is valid. If **M** icon flashes, it means current channel number is empty.
   - Press **[UP]** / **[DN]** key or turn **[VOL Knob]** to a desired channel number.
   - Press **[V/M]** button store the channel, the decimal point icon disappears, the channel number does not flash and emit a prompt, which indicates the edited channel is saved successfully.

6.9 Channel Delete

1. When the VFO Mode is turned off, press **[UP]** / **[DN**] key on Microphone to a channel to be deleted.
2. Press and hold **[FUN]** and **[V/M]** buttons at the same time for over 1 second, the current channel will be deleted, the Radio will produce a prompt tune and jump to next working channel.

6. SQL AND SCA BUTTON OPERATION

6.1 Squelch Off / Squelch Off Momentary

[SQL] button programmed as Squelch Off or Squelch Off Momentary to monitor the weak signal.

1. Squelch Off: Press [SQL] key to disable squelch, press [SQL] key again to resume squelch.
2. Squelch Off Momentary: Press [SQL] key to disable squelch, release key to resume squelch.

» *The above functions should be set in program software.*

6.2 Squelch Level Setup

This function use for setting RX signal strength, the calling will be heard only when reach set level, otherwise the radio will keep mute.

1. In standby, while hold **[SQL]** button, short press **[UP]/[DN]** key or turn **[VOL Knob]**, the LCD display will show current squelch level.
2. Press **[UP]/[DN]** or **turn [VOL Knob]** to a desired squelch level.
3. Press any key to confirm and exit.

6.3 Frequency Scan

In VFO Mode, this function is designed to monitor signal of all frequency points under each step size.

1. In VFO mode, short press **[SCA]** button to start frequency scan.
2. Short press **[UP] or [DN]** key to change scan direction.
3. Short press **[UP]/[DN]** key or any other key except the **[VOL Knob]** to exit scan.

6.4 Channel Scan

When not in VFO Mode, this function is used to monitor signal in all channels.

1. When not in VFO Mode, press **[SCA]** button start channel scan.
2. Short press **[UP]/[DN]** key to change scan direction.
3. Short press **[UP]/[DN]** key or any other key except the **[VOL Knob]** to exit scan.

6.5 Scan Skip

When not in VFO Mode, short press **[FUN]** button, then press **[SCA]** button to add or delete a scan channel.

1. Decimal point between frequency's ten digit and unit digit disappears, the current channel added to scan list. this channel will be scanned when scan function start.
2. Decimal point display between frequency's tenth digit and unit digit, the current channel is deleted from scan list, this channel will not be scanned when start scan function.

6.6 CTCSS/DCS Encode and Decode Setup

Short press **[FUN]** button, then press **[SQL]** button to enter CTCSS/DCS encode/decode menu. Short press **[SQL]** button to switch CTCSS/DCS encode/decode setting for current channel.

1. When the LCD displays **T**, it means current channel set with CTCSS encode. Press **[UP]/[DN]** key or turn **[VOL Knob]** to a desired encode.
2. When the LCD displays **CT**, it means current channel set with CTCSS encode/decode, press **[UP]/[DN]** key or turn **[VOL Knob]** to a desired CTCSS decode.
3. When the LCD displays **DCS**, it means current channel set with DCS encode/decode. Press **[UP]/[DN]** key or turn **[VOL Knob]** to a desired DCS encode/decode.
   Note:
   CTCSS code: 62.5-254.1 total 51 groups.
   DCS code: 000N-777I total 1024 groups, N is positive code, I is inverse code.
   Press V/M to choose positive code or inverse code.
4. Press **[UP]/[DN]** key or any other key except volume knob to exit.

» *When not in VFO mode, this operation can be temporarily used by user. Once the radio is turned off or switched to another channel, the temporary setting will be erased. If the channel setting programmed for valid, the temporary setting will keep valid until next change, turn off radio or switch to another channel, the temporary setting will not change.*

6.7 CTCSS Scan

Short press **[FUN]** button, then press **[SOL]** button to enter CTCSS/ DCS encode/decode menu. Repeat short pressing **[SQL]** button until LCD displays **CT.** Short press **[SCA]** button can enter into CTCSS scan mode. Short press **[UP] or [DN]** key to change the scan direction. Upon finding a matching CTCSS signaling, the Radio will stop for 5 seconds then scan again. Press any key to exit.

6.8 DCS Scan

Short press **[FUN]** button, then press **[SQL]** button to enter CTCSS/ DCS encode/decode menu. Repeat short pressing **[SQL]** button until LCD displays **DCS**, short press **[SCA]** button to enter DCS scan mode. Short press **[UP] or [DN]** key to change the scan direction. Upon finding a matching DCS signaling, the Radop will stop for 5 seconds then scan again. Press any key to exit.

6.9 Keypad Lockout

Avoiding unintentional operation, this function will lock the keys except **[PTT]** key and **[FUN]** button.

1. Short press **[FUN]** button, the LCD display will show **F** icon, press **[VOL Knob]** button, the LCD display will show a lock icon indicating the keypad is locked.
2. Repeat above operation until the lock icon disappears, the keypad is unlocked.

7. FUNCTION MENU OPERATION

Enter Into Function Menu
Hold **[FUN]** button for over 2 seconds to enter Function Menu. The number at left corner indicates the Menu number (01, 02, …20). There are 20 menu items with 2 categories of function settings.

1) Menu No.1 to No.10 is for channel function settings.
2) Menu No.11 to No.20 is for general setting settings.

Switch between Menu Items
Short press **[UP]/[DN]** key or turn **[VOL Knob]** to switch menu.

Enter Into 2nd Level Menu and Get A Desired Setting
After move to a desired menu, you can short press **[VOL Knob]** to enter 2nd level menu.
On the 2nd level menu, you can short press **[UP]/[DN]** key or turn **[VOL Knob]** to a desired setting.
Once you get the desired setting, short press any key to save and exit the Function Menu.

7.1 Menu 01 - Signaling Combination Setup

On No. 01 function menu, the LCD displays "**SKP**". This function can improve the level of blocking irrelative signals.

- **SQ:** You can hear the calling when receive a matching carrier.
- **CTC:** You can hear the calling when receive a matching carrier and CTCSS/DCS signaling.
- **Default:** SQ

 » *This setting is valid only when CTCSS/DCS signaling added.*

7.2 Menu 02 - HIGH/MID/LOW Power Selection

On No.02 function menu, the LCD displays "**POW**". This function is to control transmit power level.

- **HI:** Transmit with high power.
- **MI:** Transmit with middle power.
- **LO**: Transmit with low power.
- **Default:** HI.

7.3 Menu 03 - Band-width Selection

On No.03 function menu, the LCD displays "**BNAD**".

Select suitable bandwidth in accordance with different local conditions

- **WIDE:** band width is 25k (Wide band)
- **NAR:** band width is 12.5k (Middle band)
- **Default:** WIDE.

7.4 Menu 04 - Busy Channel Lockout

On No 04. function menu, the LCD displays "**BUSY**".

BCLO is to disable transmitting while RX signal is received. Once the channel is busy and you press [PTT] key, the radio will beep as warning and get back to receiving.

- **BU:** Enable BCLO, Carrier lockout, transmitting is inhibited when current channel receives a matching carrier; press **[PTT]** key to emit error voice prompt and back to receiving mode.
- **RL:** Enable BTLO, transmitting is inhibited when current channel receives a matching carrier but dis-matching CTCSS/DCS. Press **[PTT]** key to emit error voice prompt and back to receiving mode.
- **OFF:** BCLO is disabled. It can transmit in any receiving status.
- **Default:** OFF.

7.5 Menu 05 - Editing Channel Name

On No.05 function menu, the LCD displays "**NAME**".

1. Press **[UP]/[DN]** key or turn **[VOL Knob]** to choose a character for present cursor location.
2. Press **[V/M]** button to confirm and move to next character edit.
3. Press **[FUN]** button to return to last character edit.

» *In VFO Mode ,this function will be auto-hidden.*

7.6 Menu 06 - TX OFF

Enter No.06 function menu, the LCD displays: "**TX**".

This function use to disable the transmitting for current channel.

- **ON:** TX allowed, press **[PTT]** key to transmit.
- **OFF:** TX not allowed, press **[PTT]** key will emit a wrong report.
- **Default:** ON.

7.7 Menu 07 - Reverse Frequency

On No.07 function menu, the LCD display "**REV**".

When turn on this function, the TX frequency turns to RX frequency & RX frequency changes to TX frequency. The signaling will reverse if CTCSS/DCS signaling existed in this channel.

- **ON:** Turn on reverse function
- **OFF:** Turn off reverse function
- **Default:** OFF.

7.8 Menu 08 - Talk Around

On No.08 function menu, the LCD displays "**TALK**".
This function enables direct communication with other radios in case the repeater is not activated or when out of the repeater range. The transceiver will transmit by RX frequency with its CTCSS/DCS signaling.

- **ON:** Turn on talk around function
- **OFF:** Turn off talk around function
- **Default:** OFF.

7.9 Menu 09 - Offset Direction Setup

On No.09 function menu, the LCD display "**SHIFT**".
Repeater receives a signal (UP-LINK) on one frequency and retransmits on another frequency (DOWN-LINK). The difference between these two frequencies is called the offset frequency. If the UP-LINK frequency is higher than DOWN-LINK frequency, the direction is positive. If it is lower, the shift direction is negative.

- **+:** it indicates positive offset, which means transmitting frequency higher than receiving frequency.
- **-:** it indicates negative offset, which means transmitting frequency lower than receiving frequency.
- **OFF:** Turn off offset direction function
- **Default:** OFF.

7.10 Menu 10 - Offset Frequency Setup

On No.10 function menu, the LCD displays "**OFFSET**"

- **0-90:** Total 90MHZ frequency range available
- **Default:** 5.0MHz

» *The offset frequency change base on the frequency step setting.*

7.11 Menu 11 - Frequency Step Size Setup

On No.11 function menu, the LCD displays "**STEP**".
This function is valid only in frequency (VFO) mode, input frequency or frequency scanning are restricted by frequency step size.

- Total 9 frequency step size available:
  2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K and 50K.
- Default: 25K


» *This function is auto-hidden in memory mode.*

7.12 Menu 12 - Display Mode Setup

On No.12 function menu, the LCD displays "**DSP**".
This radio has 3 different Display Modes:

- **FRQ:** Frequency + Channel mode (Amateur Transceiver Mode)
- **CH:** Channel mode (Professional Transceiver Mode)
- **NM:** Channel + Name Tag mode (Amateur transceiver mode), if channel not named (Amateur transceiver mode), it displays Frequency + Channel mode.
- **Default:** FRQ.

7.13 Menu 13 - BEEP Prompt Setup

On No.13 function menu, the LCD displays "**BEEP**".
The prompt function is confirmation the Radio's operation, it will produce a beep prompt tune when with wrong operation.

- **ON:** Turn on BEEP prompt function
- **OFF:** Turn off BEEP prompt function
- **Default:** ON.

7.14 Menu 14 - TOT (Time Out Timer)

On No.14 function menu, the LCD displays "**TOT**".
The time-out timer limits continuous transmitting time. When transmit time exceed programmed value, the transmitting will stop and emit a prompt.

- **1-30:** 1-30 minutes range available by 1 minute/step
- **OFF:** Turn off TOT function. Default level: 03.

7.15 Menu 15 - APO Setup

On No.15 function menu, the LCD displays "**APO**".

Once APO is activated, the radio will be automatically switched off when the preset timer is running to end.

- **30:** Auto power off after 30 minutes
- **60:** Auto power off after 1 hour
- **120:** Auto power off after 2 hours
- **OFF:** Disable Auto power off
- **Default:** OFF.

7.16 Menu 16 - Squelch Level Setup

On No.16 function menu, the LCD displays "**SQL**"
This function use for setting RX signal strength, the calling will be heard only when reach set level, otherwise the radio will keep mute.

- **OFF-09:** Total 10 levels, OFF is lowest value (Open)
- Default: 03

If the transceiver has set at higher squelch level, it may fail to hear the calling. If set at lower squelch level, the radio will be interfered.

7.17 Menu 17 - Scan Dwell Time Setup

On No.17 function menu, the LCD displays "**SCAN**"
This radio has 3 kinds of Scan Dwell Time way.

- **SE:** It stops once scanning a matching signal.
- **TO:** It pauses 5s once scanning a matching signal, then resume scan.
- **CO:** It pauses once scanning a matching signal, signal disappeared then resume scan.
- **Default:** TO.

7.18 Menu 18 - Power On Method Setup

On No.18 function menu, the LCD displays "**AOP**"
After turn off this function, the transceiver will be power on only by manually pressing VOL key.

- **ON:** Auto-power on
- **OFF:** Power on by manual
- **Default:** ON.

7.19 Menu 19 - Mic Gain Setup

On No.19 function menu, the LCD displays "**MIG**".

- **1-16:** total 16 levels for optional
- **Default:** 6

7.20 Menu 20 - Reset Factory Default

Enter No.20 function menu, the LCD displays "**RESET**".
If your radio seems to be malfunctioning, resetting the microprocessor may solve the problem.

- **FACT:** All channel, signaling function setup resume factory default.
- **SETUP:** No.10-20 function menu setup resume factory default.

8. FACTORY DEFAULT SETTINGS

SEI-GMRS10	
Frequency	GMRS (462.5625 MHz - 467.7250 MHz)
VFO Frequency	462.5625 MHz - 467.7250 MHz
Memory CH 1-199	CH1: 462.5625 MHz
Offset Direction	--
Offset Frequency	5MHz
Channel Step	25KHz
CTCSS Encode/Decode	--
CTCSS Frequency	88.5Hz
DCS Encode/Decode	--
DCS Code	--
Power Output	HI
TOT	3
Squelch Level	3
Volume	28

SEI-GMRS15 Channel List

CH	Display	Rx (MHz)	Tx (MHz)	Tx Power	CTCSS Rx Tone Code	CTCSS Tx Tone Code	DCS Digital Tone Codes
1	462.5625	462.5625	462.5625	Low	None	None	000
2	462.5875	462.5875	462.5875	Low	None	None	000
3	462.6125	462.6125	462.6125	Low	None	None	000
4	462.6375	462.6375	462.6375	Low	None	None	000
5	462.6625	462.6625	462.6625	Low	None	None	000
6	462.6875	462.6875	462.6875	Low	None	None	000
7	462.7125	462.7125	462.7125	Low	None	None	000
8	8Rx	467.5625	No Tx	N/A	None	None	000
9	9Rx	467.5875	No Tx	N/A	None	None	000
10	10Rx	467.6125	No Tx	N/A	None	None	000
11	11Rx	467.6375	No Tx	N/A	None	None	000
12	12Rx	467.6625	No Tx	N/A	None	None	000
13	13Rx	467.6875	No Tx	N/A	None	None	000
14	14Rx	467.7125	No Tx	N/A	None	None	000
15	462.5500	462.5500	462.5500	High	None	None	000
16	462.5750	462.5750	462.5750	High	None	None	000
17	462.6000	462.6000	462.6000	High	None	None	000
18	462.6250	462.6250	462.6250	High	None	None	000
19	462.6500	462.6500	462.6500	High	None	None	000
20	462.6750	462.6750	462.6750	High	None	None	000
21	462.7000	462.7000	462.7000	High	None	None	000
22	462.7250	462.7250	462.7250	High	None	None	000

23	15R	462.5500	467.5500	High	None	None	000
24	16R	462.5750	467.5750	High	None	None	000
25	17R	462.6000	467.6000	High	None	None	000
26	18R	462.6250	467.6250	High	None	None	000
27	19R	462.6500	467.6500	High	None	None	000
28	20R	462.6750	467.6750	High	None	None	000
29	21R	462.7000	467.7000	High	None	None	000
30	22R	462.7250	467.7250	High	None	None	000
31	1-10	462.5625	462.5625	Low	94.8	94.8	000
32	1-25	462.5625	462.5625	Low	156.7	156.7	000
33	2-10	462.5875	462.5875	Low	94.8	94.8	000
34	2-25	462.6125	462.6125	Low	156.7	156.7	000
35	3-10	462.6125	462.6125	Low	94.8	94.8	000
36	3-25	462.5875	462.5875	Low	156.7	156.7	000
37	4-10	462.6375	462.6375	Low	94.8	94.8	000
38	4-25	462.6375	462.6375	Low	156.7	156.7	000
39	5-10	462.6625	462.6625	Low	94.8	94.8	000
40	5-25	462.6625	462.6625	Low	156.7	156.7	000
41	6-10	462.6875	462.6875	Low	94.8	94.8	000
42	6-25	462.6875	462.6875	Low	156.7	156.7	000
43	7-10	462.7125	462.7125	Low	94.8	94.8	000
44	7-25	462.7125	462.7125	Low	156.7	156.7	000
45	15-10	462.5500	462.5500	High	94.8	94.8	000
46	15-25	462.5500	462.5500	High	156.7	156.7	000
47	16-10	462.5750	462.5750	High	94.8	94.8	000

48	16-25	462.5750	462.5750	High	156.7	156.7	000
49	17-10	462.6000	462.6000	High	94.8	94.8	000
50	17-25	462.6000	462.6000	High	156.7	156.7	000
51	18-10	462.6250	462.6250	High	94.8	94.8	000
52	18-25	462.6250	462.6250	High	156.7	156.7	000
53	19-10	462.6500	462.6500	High	94.8	94.8	000
54	19-25	462.6500	462.6500	High	156.7	156.7	000
55	20-10	462.6750	462.6750	High	94.8	94.8	000
56	20-25	462.6750	462.6750	High	156.7	156.7	000
57	21-10	462.7000	462.7000	High	94.8	94.8	000
58	21-25	462.7000	462.7000	High	156.7	156.7	000
59	22-10	462.7250	462.7250	High	94.8	94.8	000
60	22-25	462.7250	462.7250	High	156.7	156.7	000

9. TROUBLE SHOOTING

Problem	Possible Causes and Solutions
Power is on, no display	+ and - polarities of power connections are reversed. Connect red lead to plus terminal and black lead to minus terminal of DC power supply.
Fuse is blown	Check and solve problem resulting in blown fuse and replace the blown fuse with new one.
No sound comes from speaker.	Squelch is muted. Decrease squelch level. Tone or CTCSS/DCS squelch is active. Turn CTCSS or DCS squelch off.
Button and Dial do not function	Key-lock function is activated. Cancel Key-lock function
No Scan	Did not list the channel in the scan when programmed.
The whole band with noise after programmed	The squelch has opened during programmed
Communication range was short, bad sensitivity	Check the antenna is well or not, and check the antenna port whether well connected. Antenna connector has debris or damaged. Whether set Low power
Cannot talk with other members within the group	Frequency/channel is different, modify it. CTCSS/DCS is different, reset it. Out of the communication range.

10. SPECIFICATIONS

GENERAL		
Frequency	462.5625 MHz - 467.7250 MHz	
Number of Channels	199 channels	
Channel Spacing	25KHz (Wide Band); 12.5KHz (Narrow Band)	
Phase-locked Step	2.5K,5K,6.25K,10K,12.5K,20K,25K,30K,50K	
Operating Voltage	13.8V DC ±15%	
Squelch	Carrier/CTCSS/DCS	
Frequency Stability	±2.5ppm	
Operating Temperature	-20~+60C	
Dimensions	109 (W) x 104(D) x 25 (H)mm	
Weight	about 0.45Kg	
RECEIVER		
	Wide Band	Narrow Band
Sensitivity (12dB SINAD)	≤0.25μV	≤0.35μV
Adjacent Channel Selectivity	≥60dB	≥60dB
Intermodulation	≥60dB	≥60dB
Spurious response	≥60dB	≥60dB
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~3KHz)
Hum & Noise	≥45dB	≥40dB
Audio Distortion	≤5%	
Audio Power Output	>2W@16R	
TRANSMITER		
	Wide Band	Narrow Band
Power Output	15W / 10W / 5W	
Modulation	16KΦF3E	11KΦF3E
Adjacent Channel Power	≥70dB	≥60dB
Hum & Noise	≥40dB	≥36dB
Spurious Emission	≤-60dBc	≤-60dBc
Audio Response	+1~-3dB(0.3~3KHz)	+1~-3dB(0.3~3KHz)
Audio Distortion	≤5%	

51 Groups CTCSS Tone Frequency (Hz)

No.	Freq.(Hz)	No.	Freq.(Hz)	No.	Freq. (Hz)	No.	Freq. (Hz)	No.	Freq. (Hz)
1	62.5	12	94.8	23	136.5	34	177.3	45	218.1
2	67.0	13	97.4	24	141.3	35	179.9	46	225.7
3	69.3	14	100.0	25	146.2	36	183.5	47	229.1
4	71.9	15	103.5	26	151.4	37	196.2	48	233.6
5	74.4	16	107.2	27	156.7	38	189.9	49	241.8
6	77.0	17	110.9	28	159.8	39	192.8	50	250.3
7	79.7	18	114.8	29	162.2	40	196.6	51	254.1
8	82.5	19	118.8	30	165.5	41	199.5		
9	85.4	20	123.0	31	167.9	42	203.5		
10	88.5	21	127.3	32	171.3	43	206.5		
11	91.5	22	131.8	33	173.8	44	210.7		

1024 Groups DCS Code

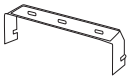
000	001	002	003	004	005	006	007
010	011	012	013	014	015	016	017
020	021	022	023	024	025	026	027
030	031	032	033	034	035	036	037
040	041	042	043	044	045	046	047
050	051	052	053	054	055	056	057
060	061	062	063	064	065	066	067
070	071	072	073	074	075	076	077
100	101	102	103	104	105	106	107
110	111	112	113	114	115	116	117
120	121	122	123	124	125	126	127
130	131	132	133	134	135	136	137
140	141	142	143	144	145	146	147
150	151	152	153	154	155	156	157
160	161	162	163	164	165	166	167
170	171	172	173	174	175	176	177
200	201	202	203	204	205	206	207
210	211	212	213	214	215	216	217
220	221	222	223	224	225	226	227
230	231	232	233	234	235	236	237
240	241	242	243	244	245	246	247
250	251	252	253	254	255	256	257
260	261	262	263	264	265	266	267
270	271	272	273	274	275	276	277
300	301	302	303	304	305	306	307
310	311	312	313	314	315	316	317
320	321	322	323	324	325	326	327
330	331	332	333	334	335	336	337
340	341	342	343	344	345	346	347
350	351	352	353	354	355	356	357
360	361	362	363	364	365	366	367
370	371	372	373	374	375	376	377
400	401	402	403	404	405	406	407

410	411	412	413	414	415	416	417
420	421	422	423	424	425	426	427
430	431	432	433	434	435	436	437
440	441	442	443	444	445	446	447
450	451	452	453	454	455	456	457
460	461	462	463	464	465	466	467
470	471	472	473	474	475	476	477
500	501	502	503	504	505	506	507
510	511	512	513	514	515	516	517
520	521	522	523	524	525	526	527
530	531	532	533	534	535	536	537
540	541	542	543	544	545	546	547
550	551	552	553	554	555	556	557
560	561	562	563	564	565	566	567
570	571	572	573	574	575	576	577
600	601	602	603	604	605	606	607
610	611	612	613	614	615	616	617
620	621	622	623	624	625	626	627
630	631	632	633	634	635	636	637
640	641	642	643	644	645	646	647
650	651	652	653	654	655	656	657
660	661	662	663	664	665	666	667
670	671	672	673	674	675	676	677
700	701	702	703	704	705	706	707
710	711	712	713	714	715	716	717
720	721	722	723	724	725	726	727
730	731	732	733	734	735	736	737
740	741	742	743	744	745	746	747
750	751	752	753	754	755	756	757
760	761	762	763	764	765	766	767
770	771	772	773	774	775	776	777

N is positive code, **I** is negative code, total: 232 groups.

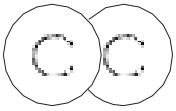
WHAT'S IN THE BOX

Tranceiver



Install bracket

Fuse (5A 250V)



Non-slip mat

User Manual

Microphone Hanger

Adjusting screws

Screws

Pads

PRODUCT USE AND PROTECTION:
Read and follow all instructions. Use only as intended.
This GMRS Two-Way Radio is not waterproofed. Exposure to water may cause damages to the internal electronics and VOID product warranty.
To prevent fire or shock, do NOT attempt to power this unit if it is wet or you suspect water has entered the unit.

SAFETY ADVISORY & WARNING:
CAUTION: Do NOT open to repair. A qualified technician must carry out repair work.
WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov
ATTENTION: Do NOT dispose of in a landfill. Contact SoundExtreme at www.gracesupport.com or a certified recycling agent to dispose of the unit.
SAFETY: This product has a limited life span of use and should be replaced when it shows obvious signs of wear.
Do not modify or remove any original component parts of the speaker. Doing so could cause damage to the unit.

CARE, MAINTENANCE & PRECAUTIONS:
1) Do NOT apply excessive force to any surfaces of the unit.
2) Do NOT use or store the unit in places with high temperature.
3) AVOID prolonged exposure to ultraviolet radiation (UV sunlight) and strong magnetic fields.

LIMITED MANUFACTURER'S WARRANTY:
The SEI-GMRS15 Two-Way Radio is covered by a 1-year limited warranty that covers defects in workmanship and / or materials for a period of 1 year from original purchase date. This warranty does not apply to any products which have been abused, neglected, modified or used for a purpose other than the one for which they were manufactured. Please refer to the above care and maintenance instructions for suggested care details. The warranty is valid only for the original owner who purchases the unit from an authorized dealer. Transfers do not qualify for warranty protection.

SoundExtreme reserves the right to replace any out-of-stock or discontinued product with a comparable product. Discontinued products may not be available for warranty replacement. Any contents are NOT covered by the limited Manufacturer's warranty. Warranty terms may be revised without notification at the discretion of the manufacturer.
Please visit www.soundextreme.us for additional product & warranty information.

FC RoHS

SEI-GMRS15 by SoundExtreme Inc., Houston, Texas.
Designed in Texas. Made in China.