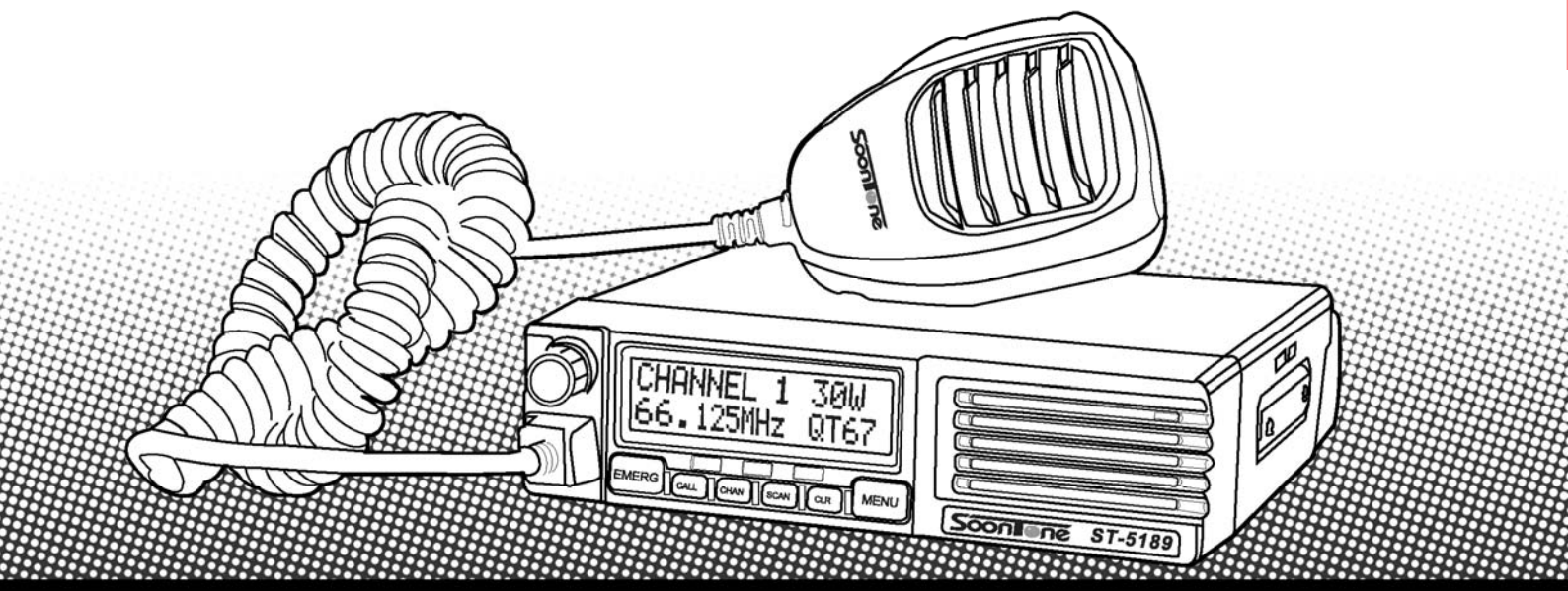
SoonTone®

ST-5189 VEHICLE TRANSCEIVER



USER'S MANUAL

Thank you for choosing this SoonTone® vehicle transceiver, SoonTone® always Provides high quality Radio products, this Transceiver is no exception. As you learn how to use this transceiver, you will find that SoonTone® is pursuing "user friendliness". For example, each time you change the Menu No. in Menu mode, you will see a text message on the display that lets you know what you are configuring.

Though user friendly, this transceiver is technically sophisticated and some features may be new to you. Consider this manual to be a personal tutorial from the designers, Allow the manual to guide you through the learning process now, then act as a reference in the coming years .

Your need
is our service purpose!

PRECAUTIONS

Please observe the following precautions to prevent fire, personal injury, and/or transceiver damage:

⚠ Do not attempt to use your transceiver while driving; it is simply too dangerous.

⚠ This transceiver is designed for a 13.8 V power source. Never use a 24 V battery to power the transceiver.

⚠ Do not place the transceiver in excessively dusty, humid or wet areas, nor on unstable surfaces.

⚠ Please make it away from interferential devices (such as TV, generator etc.) when interfering by external.

⚠ Do not expose the transceiver to long periods of direct sunlight nor place it close to heating appliances.

⚠ If an abnormal odor or smoke is detected coming from the transceiver, turn OFF the power immediately. Ensure the transceiver is safe, then send it to service station for examination.

⚠ Do not transmit with high output power for extended periods; the transceiver may overheat.

Qixiang Electron Science & Technology Co.,Ltd.
www.qx-tele.com

SAFETYTRAINING INFORMATION

Your **ST-5189** radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only". In addition, your **ST-5189** radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields– RF and Microwave.
- The following accessories are authorized for use with this product. Use of accessories other than those (listed in the instruction) specified may result in RF exposure levels exceeding the FCC requirements for wireless RF exposure.

To ensure that your expose to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

- **DO NOT** operate the radio without a proper antenna attached, as this may damaged the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or antenna specifically authorized by the manufacturer for use with this radio.
- **DO NOT** transmits for more than 50% of total radio use time ("50%duty cycle"). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" lights red. You can cause the radio to transmit by pressing the "PTT" switch.
- **ALWAYS** keep the antenna at least **60 cm** away from the body when transmitting

The information listed above provides the user with the information needed to make him or her aware of RF exposure, and what to do to assure that this radio operates with the FCC RF exposure limits of this radio.

Electromagnetic Interference/Compatibility

During transmissions, your **ST-5189** radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

Occupational/Controlled Use

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

CONTENTS

CONTENTS

1 FUNCTION AND FEATURE

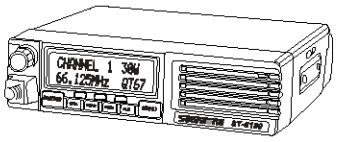
This new radio has many world advanced and reliable functions; it represents the innovation and practicality principle of *QIXIANG* Company. Functions as follows:

- ♦ The front panel display uses 16X2 dot-matrix LCD and night lighting aid to enable you to get information any time.
- ♦ 200 channels which can be split up into 1 to 10 scanning groups. each group can program a priority scanning.
- ♦ 5W, 25W, 50W Transmitter power could be changed through turning button.
- ♦ 0.3 μ V Receiver sensitivity.
- ♦ Adopting balanced mixer to improve anti-interference ability.
- ♦ Each channel has 16+7 words to edit channel remark .
- ♦ Automatic relaying search (ACS).
- ♦ Grabbing channel function.
- ♦ CTCSS/DCS encode/decode per channel (can be different encode/decode tones), rejecting extra calling from other Radio.
- ♦ Programmable busy channel Lock-out.
- ♦ Scanning--Normal scan, ACS scan, priority scan and ACS priority scan.
- ♦ Channel Scanning lock function
- ♦ Built-in 5-TONE signal, storing 100 numbers at most. It can be used for group call, selective call, ANI, auto-answer etc.
- ♦ Emergency call function.
- ♦ Exterior alarm startup and alarm trigger (Optional).

SUPPLIED ACCESSORIES 2

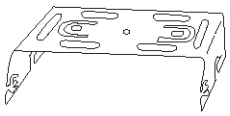
Carefully unpack the radio, and confirm the following items in addition to this manual, you'd better keep the packing.

- ST-5189 Mobile Radio

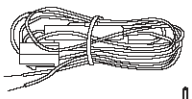


- Microphone (QMP-02)

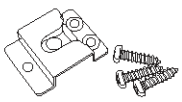
- Mounting bracket (QMB-02)



- DC power cable with fuse holder (QPL-02)



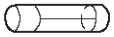
- Microphone hanger (QMH-02)



- Hexagon SEMS screws (M4x8mm) 4pcs (QSS-02A)

- Self-tapping screws (M5x20mm) 4pcs (QSS-02B)

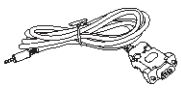
- Spare fuses (a pair) 2pcs (QF-02)



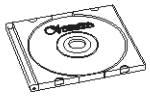
- Flat washer/ spring-washer (QSS-02D)

OPTIONAL ACCESSORIES

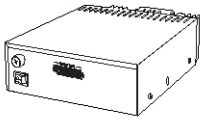
- Programing Cable (QXPL-03)



- Programing software (QCD-02)



- Regulated power supply (QRP-01)

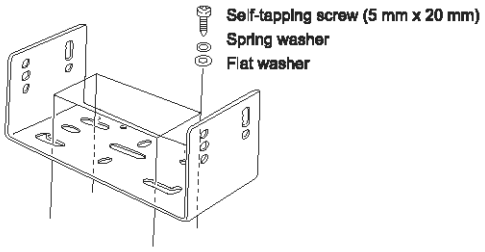


- Car antenna (QCA-01)

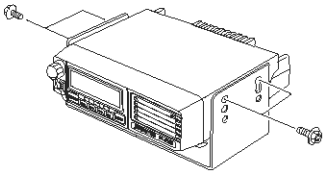
MOBILE INSTALLATION

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.

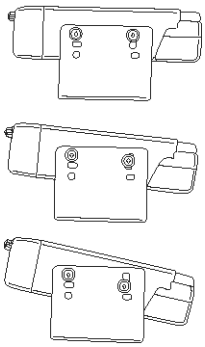
1. Install the mounting bracket in the vehicle using the supplied self-tapping screws (4 pcs), flat washers (4 pcs), and spring washers (4 pcs).
   - The bracket must be installed so that the 3 screw hole positions on the side of the mounting bracket are towards the rear of the bracket.



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



   - Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.



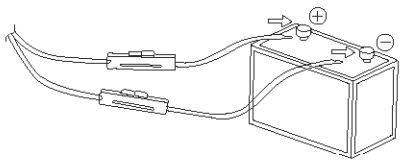
DC POWER CABLE CONNECTION

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

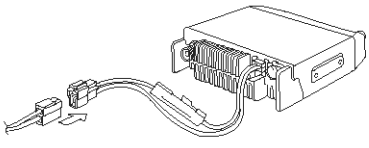
◆ MOBILE OPERATION

The vehicle battery must have a nominal rating of 12 V. Never connect the transceiver to a 24 V battery. Be sure to use a 12 V vehicle battery that has sufficient current capacity. If the current to the transceiver is insufficient, the display may darken during transmission, or transmit 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.
   - If using a noise filter, it should be installed with an insulator to prevent it from touching metal on the vehicle.
   - 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 the cable is in place, wrap heat-resistant tape around the fuse holder to protect it from moisture and tie down the full run of cable.
3. To prevent the risk of short circuits, disconnect other wiring from the negative (-) battery terminal before connecting the transceiver.
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.



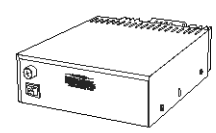
5. Reconnect any wiring removed from the negative terminal.
6. Connect the DC power cable to the transceiver's power supply connector.
   - Press the connectors firmly together until the locking tab clicks.



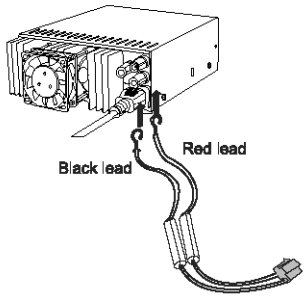
◆ FIXED STATION OPERATION

In order to use this transceiver for fixed station operation, you will need a separate13.8 V DC power supply (not included). The recommended current capacity of your power supply is 12 A.

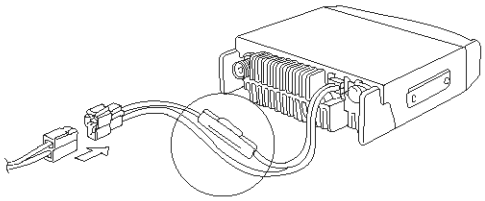
1. Connect the DC power cable to the regulated DC power supply and ensure that the polarities are correct (Red: positive, Black: negative).
   - Do not directly connect the transceiver to an AC outlet.
   - Use the supplied DC power cable to connect the transceiver to a regulated power supply.
   - Do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



Regulated power supply (QRP-01)



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.

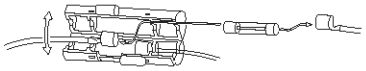


NOTE:

- *Before connecting the DC power supply 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.*

◆ REPLACING FUSES

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 authorized SoonTone® dealer or an authorized SoonTone® service center for assistance.



Fuse Location	Fuse Current Rating
Transceiver	15A
Supplied Accessory DC power cable	20A

NOTE:

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

NOTE:

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 under these conditions.

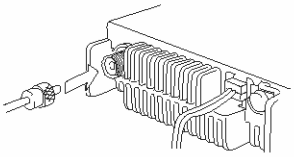
■ ANTENNA CONNECTION

Before operating, install an efficient, well-tuned antenna. 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.

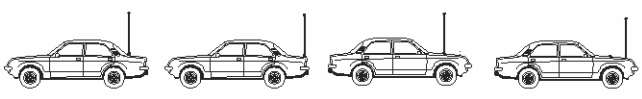
Use a 50Ω impedance antenna and low-loss coaxial feed line that has a characteristic impedance of 50Ω, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed lines having an impedance other than 50Ω reduces the efficiency of the antenna system and can cause interference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

NOTE:

- *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.*



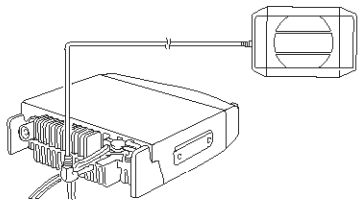
There are many possible antenna locations on a car.Four of the most popular are shown and discussed on the following:



■ ACCESSORY CONNECTIONS

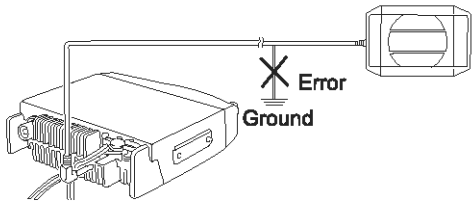
◆ EXTERNAL SPEAKER

If you plan to use an external speaker, choose a speaker with an impedance of 8Ω. The external speaker jack accepts a 3.5 mm (1/8") mono (2-conductor) plug.



NOTE:

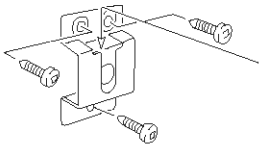
External speaker adopt BTL double ports as output, please care about the connecting way. The speaker can not connect with the ground, otherwise the speaker will be fault.The wrong connecting way as the following picture:

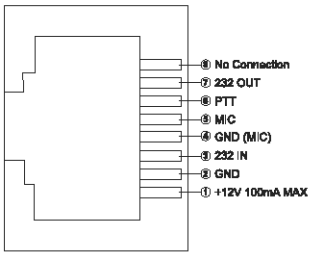


◆ MICROPHONE

For voice communications, connect a microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit.Press firmly on the plug until the locking tab clicks.

Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.





◆ PC CONNECTING

To utilize the optional QX-5189 software, you must first connect the transceiver to your PC using an optional programming cable QXPL-02 (via the microphone jack).

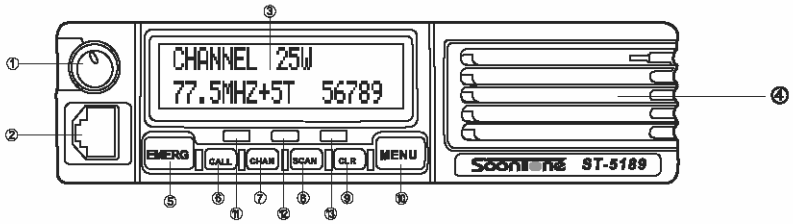
Please visit http://www.qx-tele.com for down loading QX-5189 software free.

NOTE:

Ask your dealer about purchasing a Programming Cable.

■ FRONT PANEL

Note: This section describes only the main functions of the front panel controls. Explanations for functions not described here are provided in the appropriate sections of this instruction manual.



❶ Power switch/volume control /tuning control knob* [Note 2]

- Turn this key can adjust the volume level
- Press and hold this key for 2 second to switch off transceiver, as picture on the right:

- Turn this key left or right to adjust channel and relevant functions

Note: Turn this key only In a small angle but not 360°. As picture on the right:

Rotate and release again and again to regulate a satisfying value.

❷ Microphone connection

- Connect to Microphone for voice Communication.

❸ Display Screen

- 16X2 two rows of dot matrix displaying diversified menus and user's information

❹ Speaker

- For operating prompting and communication.

❺ EMERG Key* [Note 2]

- Emergency call key when confront with emergency, press this key, transceiver will automatically transmit.
- It will transmit the data preestablished by user to make a emergency call.

❻ CALL Key* [Note 2]

- Calling key, after pressing this key, it will transmit the calling numbers preestablished by user.

❼ CHAN key

- Press once, back to channel mode, press and hold for longer period to open squelch.

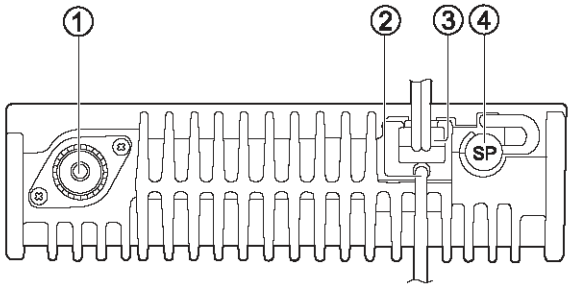
❽ SCAN key

- Press once , transceiver begins to scan, press and hold for a longer period to casually delete the scanning channel undesired.

❾ CLR key

- Press this key to turn back to a step without storing current information.

REAR PANEL



❶ Antenna connector

- Connect an external antenna [page 6] here. When transmitting, the antenna system or load should be 50Ω .

❷ Data cable

- Connect this cable to trigger connector, as external alarm spring. (Optional parts)

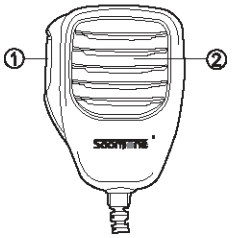
❸ 13.8V DC cable

- Connect a 13.8V DC power source here.Use the supplied DC power cable [Page 4].

❹ SP (Speaker) Jack

- If desired, connect an optional external speaker for celearer audio. this jack accepts a 3.5mm (1/8") mono (2-conductor) plug. see [Page 7].

MICROPHONE



❶ PTT (Push-to-Talk) switch

- Press and hold to transmit,Release to receive.

❷ Mic

6 BASIC OPERATION

SWITCHING THE POWEN ON/OFF

1. press and hold [**VOL**] key 2 S.the power supply is off
   - When switch off the power , it shows as follows:

   ```
   OFF
   ```

   - Radio will store the current channel and parameters when turning off, and use them on next time when turning on.
2. Press [**VOL**] or [**CLR**] to switch the transceiver power on.
   - Radio sounds ringing single beep, shows and return various status and parameters remained in last time when turning off.

SELECTING A CHANNEL

- Press [**CHAN**] key once, let it back to channel mode.
- Turn clockwise or anti-clockwise [**VOL**] adjusting knob, to select the channel needed

SELECTING CHANNEL GROUP

Repeatedly press [**MENU**] key, until it shows as below to get into selecting channel group options

```
AREA
****
```

Turn [**VOL**] adjusting knob to select the channel group needed.

Press [**CHAN**] or [**CLR**] key to return to the normal working mode.

NOTE:

This transceiver has 200 channels which can be split up into 10 channels groups most. When these 200 channels have not been divided, then the above operations will not appear this display.

ADJUSTING THE VOLUME

Press [**VOL**] to enter into adjusting volume menu, it shows as following:

```
SET VOLUME
***
```

- Turn [**VOL**] knob clockwise , to increase volume, anticlockwise to reduce volume.
- There are 16 levels in total on volume (more "*", more powerful volume being output), adjust the suitable output level through tuning the knob.
- When adjusting the volume, speaker sounds single beep as the level changes, which is used to test volume enough or not.
- Press [**CHAN**] or [**CLR**] to exit volume adjusting mode.

ADJUSTING THE SQUELCH

The purpose of Squelch is to mute the speaker when no signals are present, with the squelch level correctly set, you will hear sound only while actually receiving signals. The higher the selected squelch level,the stronger the signals must be to receive.

Please choose the suitable squelch level according to the RF noise condition.

1.Repeatedly press **[MENU]** key until it shows as below, getting into squelch level setup menu.

```
SET MUTE
***
```

2.Turn **[VOL]** knob to adjust the squelch level

- Select the level at which the background noise is just eliminated when no signal is presented.
- The higher the level,the stronger.the signals must be to receive. (move"*")
- 16 different levels can be set.(One piece of "*" is the minimum level; 16 pieces of "*" is the maximal level; Default setting is 4 pieces of "*")

3.Press **[CHAN]** or **[CLR]** to exit squelch adjusting mode.

MONITOR

- Press and hold **[CHAN]** key until background noise appears.
- Turn **[VOL]** knob to change the volume of background noise.

NOTE: *Use monitor function to know whether channel is busy and listen in weaker signals*

TRANSMITING

1.To transmit, hold the microphone approximately 5cm from your mouth, then press and hold Mic **[PTT]**, and speak into the microphone in your normal tone of voice.

- The red lamp on the panel lights when transmitting.
- If you press Mic **[PTT]** while you are beyond the frequency coverage range, the red lamp flashes.

3.When you finish speaking, release Mic **[PTT]**.

NOTE:

If you continuously transmit for longer than the TOT time, default is 2 minutes (page 18), the internal time-out timer generates a warning beep and the transceiver stops transmitting.In this case, release [PTT] and let the transceiver cool down for a while, then press [PTT] again to resume transmission.

RECEIVING

- When the radio receives signals,Whose strength is stronger enough to reach the rate of squelch. The radio will hear incoming opposite party meanwhile green lamp lights.

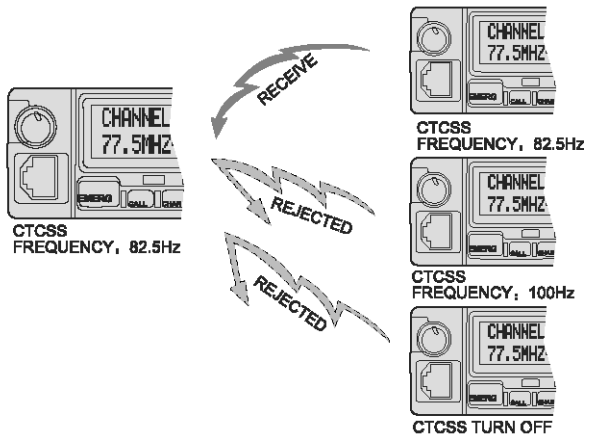
NOTE:

When green lamp lights, but speaker is not opened, please check whether volume setting is correct, if it is correct it indicates radio has different tone setup with caller party, please check and set up renewedly.

7 ADVANCED OPERATION

CTCSS AND DCS

You may sometimes want to hear calls from only specific persons or groups. In this case, use Selective Call. This transceiver is equipped with CTCSS (Continuous Tone Coded Squelch System) and DCS (Digital Coded Squelch).These Selective Calls allow you to ignore (not hear) unwanted calls from other persons who are using the same frequency. The transceiver unmutes only when it receives a signal having the same CTCSS tone or DCS code.



NOTE:

CTCSS and DCS do not cause your conversation to be private or scramble. It only relieves you from listening to undesired conversation

◆CTCSS

A CTCSS tone is a sub-audible tone and is selectable from among the 51 tone frequencies listed in the table. The list includes 37 EIA standard tones and 14 non-standard tones.

When CTCSS is ON, you will hear calls only when the selected CTCSS tone is received. To answer the call, press and hold Mic **[PTT]**, then speak to the microphone.

NOTE:

- *You cannot use the CTCSS and Tone/ DCS functions simultaneously. Switching the CTCSS function ON after having activated the Tone/ DCS functions deactivates the Tone/ DCS functions.*
- *If you select a high CTCSS frequency, receiving audio or noise that contains the same frequency portions may cause CTCSS to function incorrectly. To prevent noise from causing this problem, select an appropriate squelch level {page 11}.*
- *The CTCSS function can be programmed into any data of 67~259.1Hz.Please note that in order to avoid interfering each other, the adjacent frequency spacing should be appropriate during programming*

Available CTCSS tone frequency

51 tone frequency (Hz)							
67.0	85.4	107.2	136.5	165.5	186.2	210.7	254.1
69.4	88.5	110.9	141.3	167.9	189.9	218.1	259.1
71.9	91.5	114.8	146.2	171.3	192.8	225.7	
74.4	94.8	118.8	151.4	173.8	196.6	229.1	
77.0	97.4	123.0	156.7	177.3	199.5	233.6	
79.7	100.0	127.3	159.8	179.9	203.5	241.8	
82.5	103.5	131.8	162.2	183.5	206.5	250.3	

◆ DCS

DCS is similar to CTCSS. However, instead of using an analog audio tone, it uses a continuous sub-audible digital waveform that represents a 3-digit octal number.You can select a DCS code from among the 104 DCS codes listed in the table below.

When DCS is ON, you will hear calls only when the selected DCS code is received. To answer the call, press and hold Mic **[PTT]**, then speak into the microphone.

NOTE:

You cannot use the DCS function and CTCSS/ Tone functions simultaneously. Switching the DCS function ON after having activated the CTCSS/ Tone functions deactivates the CTCSS/ Tone functions.

The avaiable DCS codes are shown in the following table.

104 type of DCS code									
023	065	132	202	255	331	413	465	612	731
025	071	134	212	261	332	423	466	624	732
026	072	143	223	263	343	431	503	627	734
031	073	145	225	265	346	432	506	631	743
032	074	152	226	266	351	445	516	632	754
036	114	155	243	271	356	446	523	654	
043	115	156	244	274	364	452	526	662	
047	116	162	245	306	365	454	532	664	
051	122	165	246	311	371	455	546	703	
053	125	172	251	315	411	462	565	712	
054	131	174	252	325	412	464	606	723	

■ SCAN

Scan is a useful function for hands-off monitoring of your favorite frequencies. By becoming comfortable with all types of scan, you will increase your operating efficiency.

This transceiver provides the following types of scans.

- Normal Scan: scans every channel in the group
- Priority Scan: checks the activities on the priority channel(Pr) when scan every normal channel.
- ACS Scan:Scans repeater channels automatically

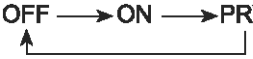
◆ SCAN SETTING

1.Add、delete、priority channel setting

Press **[MENU]** key repeatedly until it shows as following:

Now press**[SCAN]** key, "SCA: OFF" will change as following:

OFF ⟶ ON ⟶ PRY



- OFF: Channel can't be scaned
- ON: Channel can be scaned
- PRY: Channel will be scaned preferentially (at current scan groups)

Select different channel to set scan by turning **[VOL]** control knob. Press **[CLR]** or **[CHAN]** to exit setting. There is only one priority scan in every channel group. When you set the second priority channel, the first priority channel will change to normal scan channel

***NOTE:** The above scan setting needs PC programming software to turn on, otherwiseit can't enter setting.*

2.Delete scan channel temporarily

When you receive a undesried signal in the scan you can press **[SCAN]** key, until the "Beep" sound comes out, then it will delete the channel from the scan group temporarily.

The channel will be resume to the scan group after turning on/off the radio.

- Adjust squelch level before using scan function. Select too low squelch will cause scan stopping at once

◆ NORMAL SCAN

Normal scan is to scan the channel which has been joined in the channel group.

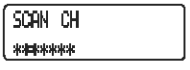
1.scan start

Press **[SCAN]** key the green lamp on the panel flashs, scan starts.

2.scan close

Press **[SCAN]** key in the situation of scan, then scan stops and the green lamp stops flashing at the same time.

- There must be one channel at least in the group that can enter scan. When it scans a effective signal ,it will stop on this channel.



Press **[PTT]** key, it will use this channel to start to communicate.

- When the effective signal disappears, the device go on scaning within resumed time(default is 5s) which has been set.

- The channel scan time can be programmed by soft (default is 100ms).If the time is too short, it will miss signal. If the time is too long it will delay the progress of scan.
- It only scan channels on the same channel groups when scan start.
- If there is CTCSS /DCS in -built. the device will decode and relieve of mute after receiving signal. IF the code is wrong, it will go on scaning.

◆ PRIORITY SCAN

When scan starts, it will scan priority channel firstly, then scan normal channel.

◆ ACS SCAN

This function can scan the repeater signal automatically and check if there is some repeater signal around can be used. Press channel which has been programmed to ACS in the group to search the available repeater signal.

When receive available repeater signal the show will be as following:

```
ACS CH
*******
```

Here, press **[PTT]** to operate repeater, if it can't scan available repeater signal, the show will be as following:

```
NO CHANNEL
```

Then return

- There are 16 channels at most in the ACS scan groups.
- The period and time of ACS scan can be programmed by software. Default period is 2 weeks, default time is 1s.

■ 5-TONE

In-built 5-TONE standard selecting call code. It can be used for single call, group call, selective call, emergency call, auto-alarm, ANI. 6 Tone sets as following:

ZVEI1
ZVEI2
DIVEI
EEA
CCIR
EXTEN

In-built 100 pre-programmed call numbers and call identification.

You can program any kind of numbers and informations for call and call identification in advance.

◆ SELECT PRE-EXISTED NUMBER TO CALL

1.Press**[MENU]**key repeatedly until it shows as following:

```
SELECT CALL
*******
```

2.Turn**[VOL]**control to select pre-programmed call number.

3.Press**[CALL]** transmit the call number.

- If the per-existed number is empty, it will be useless for **[CALL]** key.
- **[CALL]** must be programmed as call function.

◆ INPUT CALL NUMBER MANUALLY TO CALL

1.Press **[MENU]** key repeatedly until it shows as following:

```
SELECT CALL
*****
```

2.Turn **[VOL]** control to left on and on, show as following:

```
DIAL CALL:
```

3.Press **[CALL]** again, show as following:

```
ENTER DIAL CALL
*****
```

4.Select the need value of number by adjusting **[VOL]** control knob.

5.Move value to right by pressing **[CALL]**

6.After inputting all the five values, then press**[CALL]** key to transmit number

7.Press **[CLR]** to clear value in cursor position.

◆ CHANNEL CALL

Press**[CALL]**key, it will transmit the call number which has been pre-existed in the channel.

- **[CALL]**key must be pre-programmed to **[CALL SELECT]** function.

◆ EMERGENCY CALL

Press **[EMERG]** key, it will send 10 pre-programmed emergent number in order.

- **[EMERG]** key must be programmed to EMERG function.
- **[EMERG]** can be pre-existed 10 number at most

◆ CALL RECEIVED

- When Radio receive an available call, the yellow lamp on the panel will flash and the speaker will emit prompt sound.
- Press **[CLR]** to mute prompt sound and quench yellow lamp to enter normal communication. It shows as following:

```
CALL RECEIVED
OWN IN
```

◆ RECEIVING EMERGENCY CALL FROM OTHER RADIO OR CALLING SYSTEM

The caller's name or ID NUMBER is displayed, the yellow AUX lamp flashes. Press the CLR key to stop call ringing and lamp flashing.

```
CALL RECEIVED
JOHN SMITH
```

■ ANI FUNCTION

This radio can use 5-TONE to realize ANI function. When channel has been programmed to have ANI function, press [PTT] key to transmit the pre-programmed 5-TONE code, ANI function will display the caller's information after the called party decodes.

GRAB CHANNEL

When radio receive an available repeater signal, press a programmed grabbing channel function key it will immediately grab channel automatically to make sure continuous communication after the repeater signal disappears.

BUSY CHANNEL LOCKOUT

This function is used to prevent transmitting on a channel or frequency that somebody else is currently using.

When turned ON, an error beep sounds and you cannot transmit even if you press Mic [**PTT**] while another party is using the channel or frequency.

TIME-OUT TIMER

The Time-out Timer limits the time of each transmission to 0-240s.Default is 120s. Just before the transceiver stops the transmission, a warning beep sounds. This function is necessary to protect the transceiver from thermal damage.

9 MAINTENANCE

GENERAL INFORMATION

This product has been factory aligned and tested to specification before shipment. Under normal circumstances, the transceiver will operate in accordance with these instructions. All adjustable trimmers, coils, and resistors in the transceiver were preset at the factory. They should only be readjusted by a qualified technician who is familiar with this transceiver and has the necessary test equipment. Attempting service or alignment without factory authorization can void the transceiver warranty.

When operated properly, the transceiver will provide years of service and enjoyment without requiring further realignment. The information in this section gives some general service procedures requiring little or no test equipment.

SERVICE

If it is ever necessary to return this equipment to your dealer or service center for repair, pack it in its original box and packing material. Include a full description of the problems experienced. Include your telephone number, fax number, and e-mail address (if available) along with your name and address in case the service investigating your problem.

Do not return accessory items unless you feel they are directly related to the service problem.

You may return this product for service to the authorized SoonTone® dealer from whom you purchased it, or any authorized SoonTone® service center. A copy of the service report will be returned with the transceiver.

Please do not send subassemblies or printed circuit boards; send the complete transceiver.Tag all returned items with your name and call sign for identification. Please mention the model and serial number of the transceiver in any communication regarding the problem.

SERVICE NOTE

If you desire to correspond on a technical or operational problem, please make your note short, complete, and to the point. Help us help you by providing the following:

- Model and serial number of equipment
- Question or problem you are having
- Other equipment in your station pertaining to the problem
- Meter readings
- Other related information (menu setup, mode, frequency, key sequence to induce malfunction, etc.)

NOTE:

- *Do not pack the equipment in crushed newspapers for shipment!*
- *Extensive damage may result during rough handling or shipping.*

NOTE:

- *Record the date of purchase, serial number and dealer from whom this product was purchased.*
- *For your own information, retain a written record of any maintenance performed on this product.*
- *When claiming warranty service, please include a photocopy of the bill of sale, or other proof-of-purchase showing the date of sale.*

CLEANING

The keys, controls, and case of the transceiver are likely to become soiled after extended use. Remove the controls from the transceiver and clean them with a neutral detergent and warm water. Use a neutral detergent (no strong chemicals) and a damp cloth to clean the case.

Don't use impregnant,such as benzene,alcohol etc,avoiding to damage the surface of device

10 TROUBLE SHOOTING

The problems described in the following tables are commonly encountered operational malfunctions. These types of difficulties are usually caused by improper hook-up, accidental incorrect control settings, or operator error due to incomplete programming. These problems are usually not caused by circuit failure. Please review these tables and the appropriate section(s) of this instruction manual before assuming your transceiver is defective.

Problem	Probable Cause	Corrective Action
The transceiver will not power up after connecting a 13.8V DC Power supply and pressing the [VOL] (power) swithch. Nothing appears on the display	1. The power cable was connected backwards. 2. One or more of the power cable fuse are open.	1.Connect the standard DC power supply cable correctly. Connect the Red head to positive terminal and the black to negative terminal. 2.Look for the cause of the blown fuses. After inspecting and the correcting any problems and correcting any problems, install a new fuse(s) with the same ratings.
The display is too dim, even though you selected a high brightness level.	The supply voltage is too low	The supply voltage requirement is13.8V DC ± 15% (11.7V to 15.8V). If the input voltage is outside this range, adjust your regulated power supply and/or check all power cable connections
Press [PTT] but cannot transmit signals	The Mic plug was not inserted completely into the front panel connector.	Turn off the power, and then insert Mic plug and lock the external fixed screw

General	
TX Frequency Range	135~175MHz VHF
Frequency Control	PLL
Frequency Stability	5ppm
Channel Number	200Channels (divided into 10 groups) Reserve 100 calling number
Channel space	12.5KHz/25KHz
Power Supplye	DC 13.2V±15%
Squelch Method	Carrier wave, CTCSS, DCS,5-Tone
Usable Temperature Range	-10℃ ~ +60℃
Louder speaker	BTL output method
Dimension	160x155x40mm
Weight	1KG

Specifications are subject to change without notice due to advancements in technology.

Transmitter	
Output power	5W, 25W, 50W
TX Current	<10A (50W)
Modulation	FM
Audio Distortion	<5%
Audio Response	300~3000Hz(+1,-3dB)6dB/Oct
FM Noice	-40dB/12.5KHz
Harmonic	<-60dB
Max. Deviation	2.5KHz/5KHz
Adjacent Channel Power	<-60dBc/12.5KHz
Start Time	<70m Sec
Time-out Timer	0-240Sec
Receiver	
Sensitivity	0.25uV(12dB SINAD EIA) 0.5uV (20dB SINAD ETS)typical
Audio Response	300-3000Hz(+1,-3dB) 6dB/Otc
Audio Power output	＞2W@10%
FM Noice	-40dB/12.5KHz
Selectivity	＞60dB/12.5KHz
Intermodulation	＞60dB
spurious Rejection	＞70dB

Win-Win

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