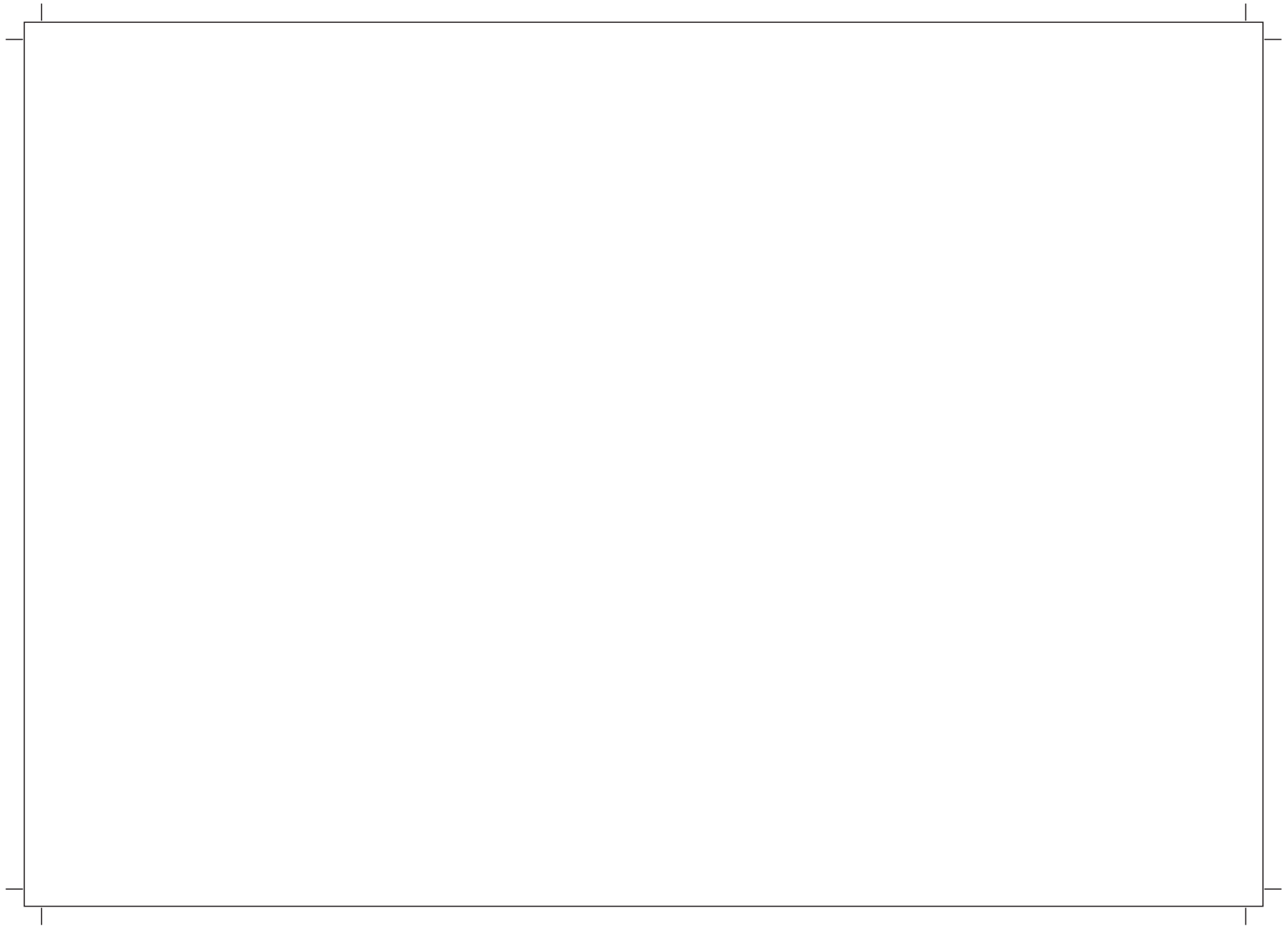# SCM-910LV/HV

VHF Low/High Band Analog Mobile Base Station

INSTRUCTION MANUAL

THANK YOU!

Thank you for choosing this *SANCHAR* transceiver. *SANCHAR* always provides Amateur Radio products which surprise and excite serious hobbyists. This transceiver is no exception. As you learn how to use this transceiver, you will find that *SANCHAR* 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.

SANCHAR believes that this product will satisfy your requirements on both voice and data communications.

MODELS COVERED BY THIS MANUAL

The models listed below are covered by this manual.
SCM 910HV: 136-174 MHz FM Transceiver
SCM 910LV : 66-88 MHz FM Transceiver

FEATURES

- Menu allows for easy control and selecting of various functions.
- Up to 200 memory channels to program frequencies and other various data. (Up to 100 memory channels if Memory Channel Names are assigned to the channels.)
- Continuous Tone Coded Squelch System (CTCSS) or Digital Code Squelch (DCS) rejects unwanted calls from other stations.
- Equipped with an easy-to-read large LCD with alphanumeric display capability.
- Free PC software (Memory Control Program) is available to program the frequency, signalling, and other settings of your transceiver.

NOTICES TO THE USER

One or more of the following statements may be applicable:

FCC WARNING

This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

INFORMATION TO THE DIGITAL DEVICE USER REQUIRED BY THE FCC

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 generate 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 the 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 to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for technical assistance.

When condensation occurs inside the transceiver:

Condensation may occur inside the transceiver when the room is warmed using a heater on a cold day or when the transceiver is quickly moved from a cold location to a warm location. When condensation occurs, the microcomputer and/or the transmit/receive circuits may become unstable, resulting in transceiver malfunction. If this happens, turn OFF the transceiver and wait for a while. When the condensed droplets disappear, the transceiver will function normally.

PRECAUTIONS

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

- Do not attempt to configure your transceiver while driving; it is simply too dangerous.

- Be aware of local laws pertaining to the use of headphones/headsets while driving on public roads. If in doubt, do not wear headphones while mobiling.

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

- Do not modify the transceiver unless instructed by this manual or other $SANCHAR$ documentation.

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

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

- If an abnormal odor or smoke is detected coming from the transceiver, turn OFF the power immediately. Contact a $SANCHAR$ service station or your dealer.

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

CONTENTS

SUPPLIED ACCESSORIES

After carefully unpacking the transceiver, identify the items listed in the table below. We recommend you keep the box and packaging for shipping.

Accessory	Qty
Microphone	1
DC power cable	1
Fuse	1
Mounting bracket	1
Microphone hanger	1
Screw set	1
Instruction manual	1

WRITING CONVENTIONS FOLLOWED IN THIS MANUAL

The writing conventions described below have been followed to simplify instructions and avoid unnecessary repetition.

| Instruction	What to do
Press **[KEY]**.	Press and release **KEY**.
Press **[KEY] (1s)**.	Press and hold **KEY** for 1 second or longer.
Press **[KEY1]**, **[KEY2]**.	Press **KEY1** momentarily, release **KEY1**, then press **KEY2**.
Press **[KEY1]+[KEY2]**.	Press and hold **KEY1**, then press **KEY2**. If there are more than 2 keys, press and hold each key in turn until the final key has been pressed.
Press **[KEY]+[⏻]**.	With the transceiver power OFF, press and hold **KEY**, then turn the transceiver power ON by pressing **[⏻]** (Power Switch).

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), flat washers (4), and spring washers (4).

　• 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.

Self-tapping screw
(5 mm x 16 mm)

Spring washer
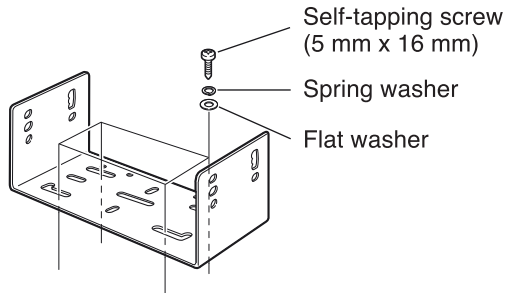
Flat washer

2 Position the transceiver, then insert and tighten the supplied hexagon SEMS screws (4) and flat washers (4).

　• Double check that all hardware is tightened to prevent vehicle vibration from loosening the bracket or transceiver.

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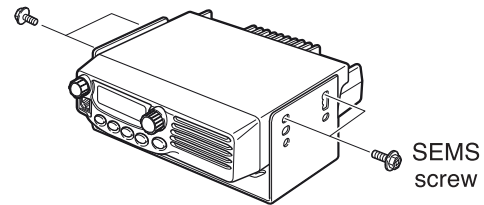
　• Determine the appropriate angle of the transceiver, using the 3 screw hole positions on the side of the mounting bracket.

DC POWER CABLE CONNECTION

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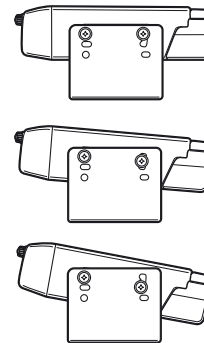 sufficient current capacity. If the current to the transceiver is insufficient, the display may darken during transmission, or transmit output power may drop excessively.

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.

Fuse holder

Red

Black

Fuse holder
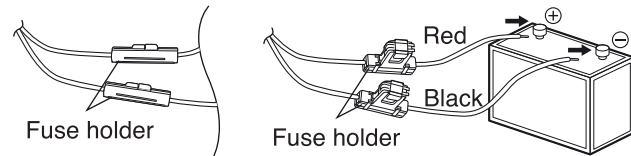
5 Reconnect any wiring removed from the negative terminal.

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

- Press the connectors firmly together until the locking tab clicks.

Fuse holder
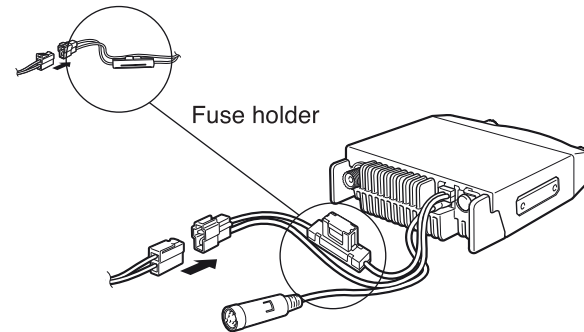
Fixed Station Operation

In order to use this transceiver for fixed station operation, you will need a separate 13.8 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.

Fuse holder

Fuse holder

Regulated DC power supply

Red (+)

Black (−)

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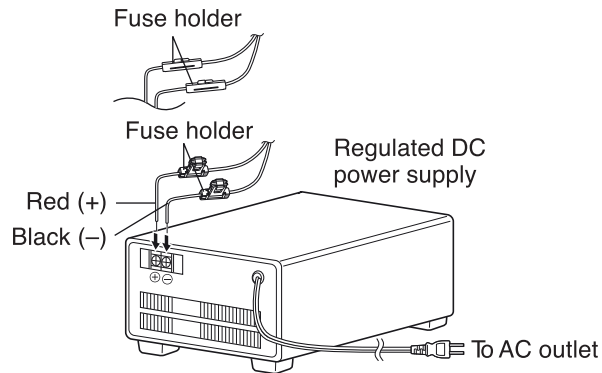
2 Connect the transceiver's DC power connector to the connector on the DC power cable.

- Press the connectors firmly together until the locking tab clicks.

Fuse holder
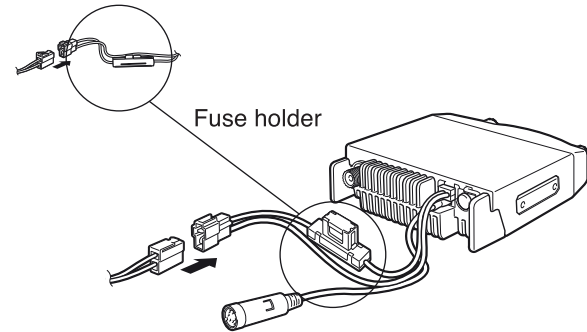
Note:

♦ For your transceiver to fully exhibit its performance capabilities, we recommend using the optional PS-33 (20.5 A, 25% duty cycle) power supply.

♦ 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 *SANCHAR* dealer or an authorized *SANCHAR* service center for assistance.
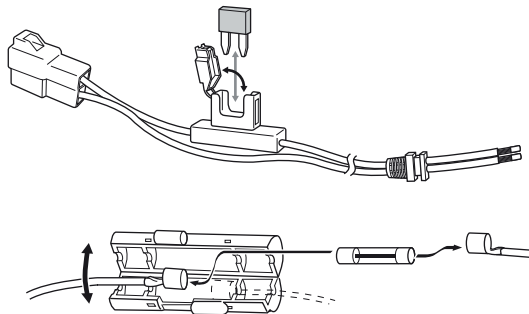

Fuse Location	Fuse Current Rating
Transceiver	15 A
Supplied Accessory DC Power Cable	20 A

⚠ CAUTION

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 $5\,\Omega$ impedance antenna and low-loss coaxial feed line that has a characteristic impedance of $50\,\Omega$, to match the transceiver input impedance. Coupling the antenna to the transceiver via feed lines having an impedance other than $5\,\Omega$ reduces the efficiency of the antenna system and can cause interference to nearby broadcast television receivers, radio receivers, and other electronic equipment.

⚠ CAUTION

♦ 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.

Antenna connector

To antenna

Feed line connector
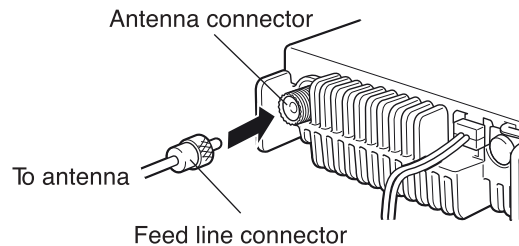
ACCESSORY CONNECTIONS

EXTERNAL SPEAKER

If you plan to use an external speaker, choose a speaker with an impedance of $8\,\Omega$. The external speaker jack accepts a 3.5 mm (1/8") mono (2-conductor) plug. We recommend using the SP-50B speaker.
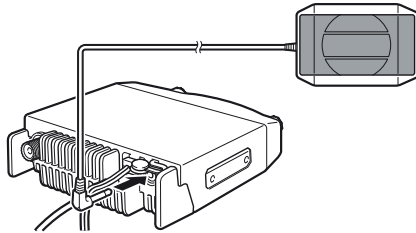
MICROPHONE

For voice communications, connect a $600\,\Omega$ 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.
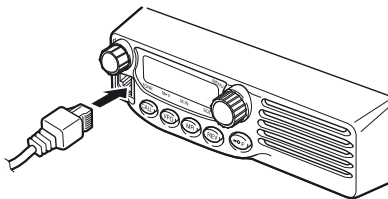
Attach the supplied microphone hanger in an appropriate location using the screws included in the screw set.

Microphone hanger

Microphone hanger screw (3 mm x 10 mm)

❽ Keypad serial data
❼ No Connection
❻ MIC, $600\,\Omega$ impedance
❺ GND (MIC)
❹ PTT
❸ GND
❷ DC 8 V, 100 mA max
❶ No Connection
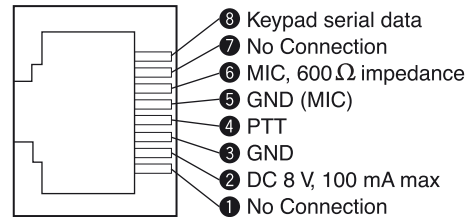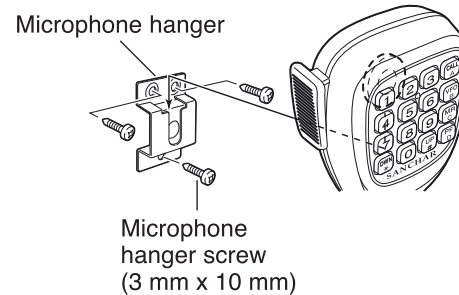
PC CONNECTION

To utilize the optional software, you must first connect the transceiver to your PC using an optional. Programming Cable (via the microphone jack).

Note: Ask your dealer about purchasing a Programming Cable.

Are you ready to give your transceiver a quick try? Reading this section should get your voice on the air right away. The instructions below are intended only as a quick guide. If you encounter problems or there is something you would like to know more, read the detailed explanations given later in this manual.

❶ ❷   ❸

SCM-910HV/LV   MENU

CT DCS + − ⊟ R ⊟ PRI WX ⊠

TONE   M▶V   M.IN   SQL

CALL   VFO   MR   REV   ⊓¬▢F

SANCHAR

❺
❻
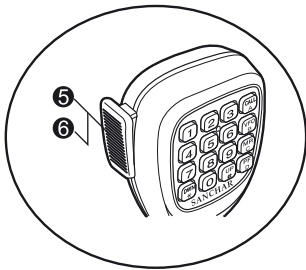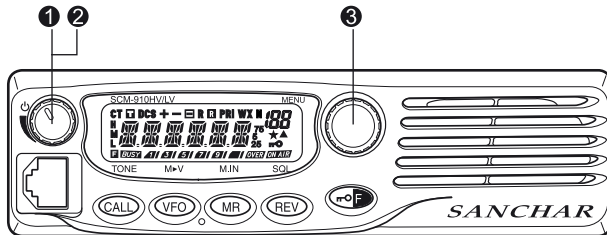
❶ Press **[⏻]** (Power) briefly to switch the transceiver power ON.
  • A high pitched double beep sounds and a Power-on message appears momentarily. The various indicators and the current operating frequency appear on the LCD.
  • The transceiver stores the current parameters when it is turned OFF and automatically recalls those parameters the next time you turn the transceiver ON.

❷ Turn the **Volume** control clockwise, to the 9 o'clock position.

❸ Turn the **Tuning** control to select a reception frequency.
  • You may further turn the **Volume** control to adjust the volume level of the signal.

❹ To transmit, hold the microphone approximately 5 cm (2 inches) from your mouth.

❺ Press and hold Mic **[PTT]**, then speak in your normal tone of voice.

❻ Release Mic **[PTT]** to receive.

❼ Repeat steps ❹ , ❺ , and ❻ to continue communication.

❷

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.

❸

① ②

③ ④ ⑤ ⑥ ⑦
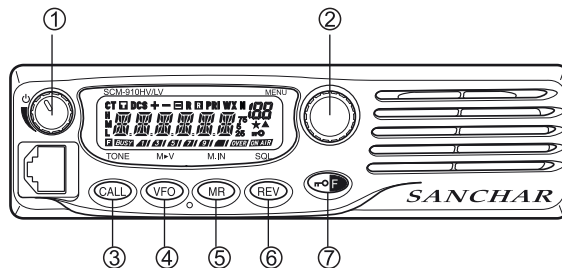
① ⏻ **(Power) switch/ Volume control**

Press to switch the transceiver power ON or OFF.

Turn to adjust the level of the receive audio from the speaker.

② **MENU button/ Tuning control**

Press to enter MHz Mode. In this mode, you can change the operating frequency in 1 MHz steps using the **Tuning** control or Mic **[UP]/[DWN]**. Press and hold for 1 second while in VFO Mode to begin MHz Scan or while in MR Mode to begin Group Scan.

Press **[F]** then press **[MENU]** to enter Menu Mode.

Turn to select:
• Operating frequencies when in VFO Mode.
• Memory Channels when in Memory Recall Mode.

• Menu Nos. when in Menu Mode.
• Scan direction while scanning.

③ **CALL key**

Press to recall the Call Channel. Press and hold for 1 second while in VFO Mode to begin Call/VFO Scan. Press and hold for 1 second while in Memory Recall Mode to begin Call / Memory Scan.

Press **[F]** then press **[CALL]** to activate the Tone, CTCSS, or DCS function.

④ **VFO key**

Press to enter VFO Mode. In this mode, you can change the operating frequency using the **Tuning** control or Mic **[UP]/[DWN]**. Press and hold. for 1 second while in VFO Mode to begin Band Scan Press and hold for 1 second while in VFO Mode after programming a scan range to begin Program Scan.

In MR Mode, press **[F]** then press **[VFO]** to transfer the contents of the selected Memory Channel to the VFO.

⑤ **MR key**

Press to enter Memory Recall Mode. In this mode, you can change memory channels using the **Tuning** control or Mic **[UP]**/**[DWN]**. Press and hold for 1 second while in Memory Recall Mode to begin Memory Scan.

Press **[F]**, use the **Tuning** control to select the desired channel, then press **[MR]** to reprogram the Call Channel or a Memory Channel.

⑥ **REV key**

Press to switch the transmit frequency and receive frequency when operating with an offset or an odd-split Memory Channel.

Press **[F]** then press **[REV]** and rotate the **Tuning** control to increase or decrease the squelch level.

⑦ **⊓O/F key**

Press and hold for 1 second to lock the transceiver keys.

Press momentarily to access the second functions of the transceiver keys.

DISPLAY
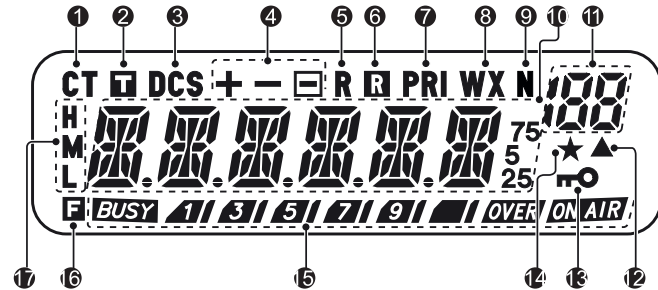
❶ CT

Appears when the CTCSS function is activated.

❷ [T]

Appears when the Tone function is activated.

❸ DCS

Appears when the DCS function is activated.

❹ + − ⊟

Appears when the repeater shift function is activated. ("⊟" is not used on this transceiver.)

❺ R

Appears when the Reverse function is activated.

❸

❻ **R**

Appears when the Automatic Simplex Check (ASC) function is activated.

❼ **PRI**

Appears when the Priority Scan function is activated.

❸

❽ **WX**

Not used on this transceiver.

❾ **N**

Appears when narrow FM Mode is selected.

❿ 🔋🔋🔋🔋🔋🔋₂₅⁷⁵₅

Displays the frequencies, Menu settings, Memory name and other information.

⓫ *188*

Displays the Menu No., Memory Channel number, and status.

⓬ ▲

Appears when the displayed Memory Channel has data.

⓭ 🔒

Appears when the Key Lock function is ON.

⓮ ★

Appears when the Memory Channel Lockout function is ON.

⓯ **BUSY** **1** **3** **5** **7** **9** ▬ **OVER** **ON AIR**

Shows the strength of transmitted and received signals.

BUSY indicates the squelch is open and the frequency is "busy". It also appears when the squelch is set to minimum. If using CTCSS or DCS, it indicates the squelch is open due to a received signal that contains the same CTCSS tone or DCS code that is set in your transceiver.

1 **3** **5** **7** **9** ▬ **OVER** acts as an S-meter while receiving and an RF power meter while transmitting.

ON AIR indicates the transceiver is transmitting.

⓰ **F**

Appears when the function key is pressed.

⓱ H M L

H appears when high power transmission is selected and L appears when low power is selected.
("M" is not used on this transceiver.)

REAR PANEL
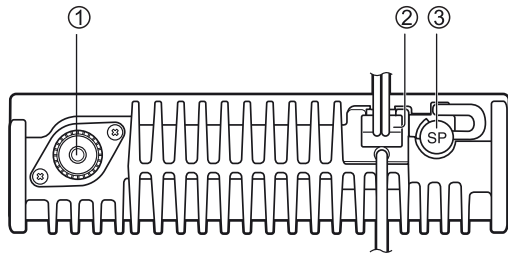
① Antenna connector

Connect an external antenna here. When making test transmissions, connect a dummy load in place of the antenna. The antenna system or load.

② Power Input 13.8 V DC cable

Connect a 13.8 V DC power source here. Use the supplied DC power cable.

③ SP (speaker) jack

If desired, connect an optional external speaker for clearer audio. This jack accepts a 3.5 mm (1/8") mono (2-conductor) plug. See page 6.

MICROPHONE
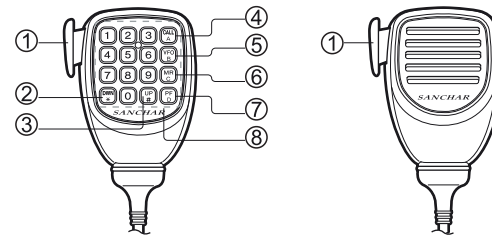
DTMF Microphone   Microphone

① PTT (Push-to-Talk) switch

Press and hold to transmit. Release to receive.

② DWN/✳ key

Press to lower the operating frequency, Memory Channel number, Menu Number, etc. Hold down to repeat the action. Also press to switch between values for functions with multiple choices. Press and hold Mic **[PTT]**, then press **[DWN/✳]** to transmit ✳.

③ UP/# key

Press to raise the operating frequency, Memory Channel number, Menu Number, etc. Hold down to repeat the action. Also press to switch between values for functions with multiple choices. Press and hold Mic **[PTT]**, then press **[UP/#]** to transmit #.

④ CALL/A key

Identical to the front panel **CALL** key. This key can be reprogrammed if desired. Press and hold Mic **[PTT]**, then press **[CALL/A]** to transmit A.

⑤ VFO/B key

Identical to the front panel **VFO** key. This key can be reprogrammed if desired. Press and hold Mic **[PTT]**, then press **[VFO/B]** to transmit B.

⑥ MR/C key

Identical to the front panel **MR** key. This key can be reprogrammed if desired. Press and hold Mic **[PTT]**, then press **[MR/C]** to transmit C.

⑦ PF/D key

The default function of this key is 1 MHz step. This key can be reprogrammed if desired.
Press and hold Mic **[PTT]**, then press **[PF/D]** to transmit D.

⑧ DTMF keypad

This 16-key keypad is used for DTMF functions or to directly enter an operating frequency or a Memory Channel number.
The keypad can also be used to program a Memory Channel name, Power-on message, or other character strings.

Mic Keypad Direct Entry

The microphone keypad (keypad models only) allows you to make various entries depending on which mode the transceiver is in.

In VFO or Memory Recall mode, use the Mic keypad to select a frequency or Memory Channel number. First press the Mic PF key assigned the ENTER function.
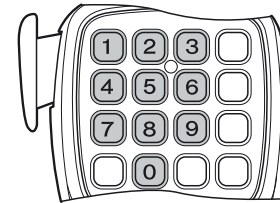
To manually send a DTMF number, press and hold Mic **[PTT]**, then press the DTMF keys on the Mic keypad in sequence.

You can also use the Mic keypad to program a Memory Channel name, Power-on message, or other character strings.

SWITCHING THE POWER ON/OFF

1 Press **[⏻]** (Power) to switch the transceiver power ON.

- A high pitched double beep sounds and a Power-on message. appears briefly, followed by the frequency and other indicators.

77.000

2 To switch the transceiver OFF, press **[⏻]** (Power) **(1s)**.

- When you turn the transceiver OFF, a low pitched double beep sounds.

- The transceiver stores the current frequency and parameters when it is turned OFF and recalls these parameters the next time you turn the transceiver ON.

ADJUSTING THE VOLUME

Turn the **Volume** control clockwise to increase the audio output level and counterclockwise to decrease the output level.

- If you are not receiving a signal, press the Mic PF key assigned the MONI function, then adjust the **Volume** control to a comfortable audio output level. Press the MONI key again to cancel the Monitor function.

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.
The appropriate squelch level depends on the ambient RF noise conditions.

1 Press **[F]** , **[REV]**.

- The current squelch level appears.

SQL. 1

2 Turn the **Tuning** control to adjust the level.

- Select the level at which the background noise is just eliminated when no signal is present.

- The higher the level, the stronger the signals must be to receive.

- 10 different levels can be set.
  (0: Minimum ~ 9: Maximum; 1 is the default value)

3 Press any key other than **[⏻]** (Power) to store the new setting and exit the squelch adjustment.

4

TRANSMITTING

1 To transmit, hold the microphone approximately 5 cm (2 inches) from your mouth, then press and hold Mic **[PTT]** and speak into the microphone in your normal tone of voice.

- " `ON AIR` " and the RF Power meter appears. The RF Power meter shows the relative transmit output power (`1` / `3` / `5` / `7` / `9` / `■` / `OVER`).

- If you press Mic **[PTT]** while you are outside the transmission coverage, a high pitched error beep sounds.

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

Note: If you continuously transmit for longer than the time specified in Menu No. 21 (default is 10 minutes), the internal time-out timer generates a warning beep and the transceiver stops   transmitting.
In this case, release Mic **[PTT]** and let the transceiver cool down for a while, then press Mic **[PTT]** again to resume   transmission.

SELECTING AN OUTPUT POWER

You can configure different power levels for transmission.

1 Press **[F]**, **[MENU]** and turn the **Tuning** control to select Menu No. 6 (TXP).

`ᴴT X P.    H    6`

2 Press **[MENU]** and turn the **Tuning** control to select "H" (high; default) or "L" (low) power.

3 Press **[MENU]** to store the setting or any other key to cancel.

4 Press any key other than **[MENU]** to exit Menu Mode.

⚠ CAUTION

♦ Do not transmit at high output power for an extended period of time. The transceiver could overheat and malfunction.

♦ Continuous transmission causes the heat sink to overheat. Never touch the heat sink when it may be hot.

Note: When the transceiver overheats because of ambient high temperature or continuous transmission, the protective circuit may function to lower transmit output power.

SELECTING A FREQUENCY

VFO MODE

This is the basic mode for changing the operating frequency. To enter VFO Mode, press **[VFO]**.

Turn the **Tuning** control clockwise to increase the frequency and counterclockwise to decrease the frequency, or use Mic **[UP]/[DWN]**.

`ᴴ 77.025`

Press and hold Mic **[UP]/[DWN]** to step the frequency repeatedly.

MHz Mode

If the desired operating frequency is far away from the current frequency, it is quicker to use the MHz Tuning Mode.

To adjust the MHz digit:

1 While in VFO or Call Mode, press **[MENU]**.

- The MHz digit blinks.

2 Turn the **Tuning** control to select the desired MHz value.

3 Press any key to set the selected frequency and return to normal VFO Mode.

4 Continue adjusting the frequency as necessary, using the **Tuning** control or Mic **[UP]**/**[DWN]**.

Direct Frequency Entry

In addition to turning the **Tuning** control or pressing Mic **[UP]**/**[DWN]**, there is another way to select the frequency. When the desired frequency is far away from the current frequency, you can directly enter a frequency using the Mic keypad (keypad models only).

1 Press **[VFO]**.

- You must be in VFO mode to make a direct frequency entry.

2 Press the Mic PF key assigned the ENTER function.

3 Press the numeric keys (**[0]** to **[9]**) to enter your desired frequency.

- Pressing Mic **Enter** fills all remaining digits (the digits you did not enter) with 0 and completes the entry. For example, to select 75.000 MHz, press   **[0]**, **[7]**, **[5]** and press Mic **Enter** to complete the entry.

- If you want to revise the MHz digits only, leaving the kHz digits as they are, press Mic **[VFO]** in place of Mic **Enter**.

Example 1

To enter 75.750 MHz:

Key in	Display
[Enter]	— – – – –
[0], **[7]**, **[5]**	0 7 5. – – –
[7], **[5]**, **[0]**	7 5. 7 5 0

④

Example 2

To enter 75.000 MHz:

Key in	Display
[Enter]	— – – – –
[0], **[7]**, **[5]**	0 7 5. – – –
[Enter]	7 5. 0 0 0

Note: If the entered frequency does not match the current frequency step size, the frequency is automatically rounded down to the next available frequency. When the desired frequency cannot be entered exactly, confirm the frequency step size.

WHAT IS A MENU?

Many functions on this transceiver are selected or configured via a software-controlled Menu rather than through the physical controls of the transceiver. Once you become familiar with the Menu system, you will appreciate its versatility. You can customize the various timings, settings, and programming functions on this transceiver to meet your needs without using many controls and switches.

MENU ACCESS

1 Press **[F]**, **[MENU]**.

- A brief explanation of the menu, and the setting and Menu No. appear on the display.

Menu Name   Setting   Menu Number
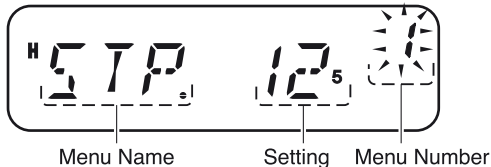
2 Turn the **Tuning** control to select your desired Menu.

- As you change the Menu No., a brief explanation of each menu appears along with its current parameter.

3 Press **[MENU]** to configure the parameter of the currently selected Menu No.

4 Turn the **Tuning** control to select your desired parameter.
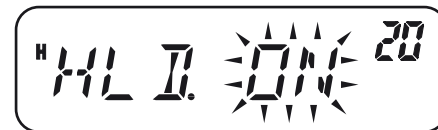
5 Press **[MENU]** to store the new setting or any other key to cancel.

6 Press any key other than **[MENU]** to exit Menu Mode.

MENU FUNCTION LIST

On the display	Menu No.	Function	Selections	Default
STP	1	Frequency step size	2.5/ 5/ 6.25/ 10/ 12.5/ 15/ 20/ 25/ 30/ 50/ 100 kHz	12.5
T	2	Tone frequency	67.0 ~ 254.1 Hz	88.5
CT	3	CTCSS frequency	67.0 ~ 254.1 Hz	88.5
DCS	4	DCS code	023 ~ 754	023
SFT	5	Shift direction	OFF/ +/ −	OFF
TXP [1]	6	Transmission power	High/ Low	High
P.VFO	7	Programmable VFO	136 ~ 173 MHz	136 ~ 173 MHz
SSQ	8	S-Meter squelch	ON/ OFF	OFF
SQH	9	Squelch hang time	OFF/ 125/ 250/ 500 ms	OFF
OFFSET	10	Repeater offset frequency	0 ~ 69.95 MHz	600 kHz
ARO	11	Automatic Repeater Offset	ON/ OFF	OFF
PRI	12	Priority Scan	ON/ OFF	OFF
SCAN	13	Scan Resume method	TO/ CO/ SE	TO
L.OUT	14	Memory Channel Lockout	ON/ OFF	OFF
M.CH	15	Memory Channel capacity	100/ 200	100
M.NAME	16	Memory Name	6 characters	−
MDF	17	Memory Name/ Frequency display	MN/ FRQ	MN
APO	18	Automatic Power-off	OFF/ 30/ 60/ 90/ 120/ 180 min.	OFF

On the display	Menu No.	Function	Selections	Default
CK	19	CALL key	CALL/ 1750	Varies (see reference page)
HLD	20	1750 Hz tone TX hold	ON/ OFF	OFF
TOT	21	Time-out Timer	3/ 5/ 10 min.	10
BCL	22	Busy Channel Lockout	ON/ OFF	OFF
P.ON.MSG	23	Power-on message	6 characters	–
BP	24	Beep	ON/ OFF	ON
BS	25	Beat Shift	ON/ OFF	OFF
FMN	26	Narrow FM	ON/ OFF	OFF
ENC	27	Tuning control lock	ON/ OFF	OFF
DTMF.MR	28	Automatic dialer	Up to 16 digits	–
SPD	29	DTMF TX speed	FA/ SL	FA
DT.H	30	DTMF TX hold	ON/ OFF	OFF
PA	31	DTMF pause period	100/ 250/ 500/ 750/ 1000/ 1500/ 2000 ms	500
DT.L	32	DTMF key lock	ON/ OFF	OFF
DT.M	33	DTMF monitor	ON/ OFF	OFF
MC.L	34	Microphone key lock	ON/ OFF	OFF
PF 1	35	Microphone programmable function key	MONI/ ENTER/ 1750/ VFO/ MR/ CALL/ MHZ/ REV/ SQL/ M--V/ M.IN/ C.IN/ MENU/ SHIFT/ LOW/ BRIGHT/ LOCK/ TONE/ STEP	MHZ

❺

On the display	Menu No.	Function	Selections	Default
PF 2	36	Microphone programmable function key	MONI/ ENTER/ 1750/ VFO/ MR/ CALL/ MHZ/ REV/ SQL/ M--V/ M.IN/ C.IN/ MENU/ SHIFT/ LOW/ BRIGHT/ LOCK/ TONE/ STEP	MR
PF 3	37	Microphone programmable function key	MONI/ ENTER/ 1750/ VFO/ MR/ CALL/ MHZ/ REV/ SQL/ M--V/ M.IN/ C.IN/ MENU/ SHIFT/ LOW/ BRIGHT/ LOCK/ TONE/ STEP	VFO
PF 4	38	Microphone programmable function key	MONI/ ENTER/ 1750/ VFO/ MR/ CALL/ MHZ/ REV/ SQL/ M--V/ M.IN/ C.IN/ MENU/ SHIFT/ LOW/ BRIGHT/ LOCK/ TONE/ STEP	CALL
DT	39	Data TX speed	1200/ 9600 bps	1200
BRIGHT	40	Display brightness	—	Maximum level
TON	41	Set up DTMF decode	ON/ OFF	OFF
ID	42	DTMF self ID	001	—
CMP	43	Compander	ON/OFF	OFF
SCR	44	Scrambler	ON/OFF	OFF
ABR	45	Automatic display brightness	ON/OFF	OFF
RESET	99	Reset selection	VFO/ FULL	VFO

You can change numerous transceiver settings by operating the Mic DTMF keys.

The following table shows what function is switched ON and OFF or which setting is changed by pressing the DTMF keys in the appropriate mode of operation.

Key	RX Mode	TX Mode [1]	Storing Memory Name	Storing DTMF Memory	Storing Power-on Message
1	N/A	Transmit Tone 1	See note, below	Input Code 1	See note, below
2	N/A	Transmit Tone 2	See note, below	Input Code 2	See note, below
3	N/A	Transmit Tone 3	See note, below	Input Code 3	See note, below
4	N/A	Transmit Tone 4	See note, below	Input Code 4	See note, below
5	N/A	Transmit Tone 5	See note, below	Input Code 5	See note, below
6	N/A	Transmit Tone 6	See note, below	Input Code 6	See note, below
7	N/A	Transmit Tone 7	See note, below	Input Code 7	See note, below
8	N/A	Transmit Tone 8	See note, below	Input Code 8	See note, below
9	N/A	Transmit Tone 9	See note, below	Input Code 9	See note, below
0	N/A	Transmit Tone 0	See note, below	Input Code 0	See note, below
CALL/A	Assigned function	Transmit Tone A	Delete current character	Input Code A	Delete current character
VFO/B	Assigned function	Transmit Tone B	Move cursor to previous digit	Input Code B	Move cursor to previous digit
MR/C	Assigned function	Transmit Tone C	Move cursor to next digit	Input Code C	Move cursor to next digit
PF/D	Assigned function	Transmit Tone D [2]	Confirm Memory Name	Input Code D	Confirm Power-on Message
DWN/✶	Down	Transmit Tone ✶	Move character down	Input Code ✶ [3]	Move character down
UP/ #	Up	Transmit Tone #	Move character up	Input Code # [4]	Move character up

¹ DTMF tones are not transmitted in TX Mode if the DTMF Lock function is ON.

² When transmitting a stored DTMF number, press Mic **[PTT]**+Mic **[PF/D]**, release Mic **[PF/D]**, then press a Memory Channel number from 0 to 9. To transmit the "D" tone, press Mic **[PF/D]** again.

³ On the display, ✳ is represented by "E".

⁴ On the display, # is represented by "F".

> **Note:** When storing a Memory Name or Power-on message, the DTMF keys can be used. Each time a key is pressed, the displayed character will change, according to the table below.

Key	Displayed Characters			
1	Q	Z	1	
2	A	B	C	2
3	D	E	F	3
4	G	H	I	4
5	J	K	L	5
6	M	N	O	6
7	P	R	S	7
8	T	U	V	8
9	W	X	Y	9
0	[space]	0	—	/

MIC LOCK

The Mic Lock function disables the Mic PF keys to prevent you from accidentally changing the transceiver operation.

1 Press **[F]**, **[MENU]** and turn the **Tuning** control to select Menu No. 34 (MC.L).

2 Press **[MENU]** and turn the **Tuning** control to select "ON" or "OFF" (default).
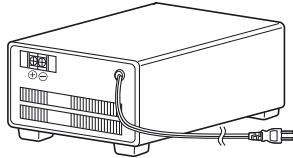

3 Press **[MENU]** to store the setting or any other key to cancel.

4 Press any key other than **[MENU]** to exit Menu Mode.

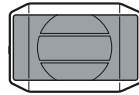> **Note:** The Mic Lock function will not lock the DTMF keys.
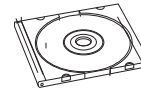
OPTIONAL ACCESSORIES

PS-33/53
Regulated DC
Power Supply

SP-50B
Communications Speaker

Memory Control Program
(Free Software)

Programming Cable

KMC-30
Microphone

KMC-32
DTMF Microphone

PG-2N
DC Power Cable

Car antenna

❼

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 technician needs to call you for further information while 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 *SANCHAR* dealer from whom you purchased it, or any authorized *SANCHAR* 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.)

⚠️ CAUTION

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.

RESETTING THE TRANSCEIVER

If your transceiver seems to be malfunctioning, resetting the microprocessor may solve the problem. The following 2 reset modes are available. When performing the reset, you may lose memory data and stored information. Back up or write down important data before performing the reset.

INITIAL SETTINGS

The factory defaults for the operating frequencies are as follows.

Transceiver: 77.000 MHz

The Memory Channels have no data stored. Refer to pages 25 and 56 for the Call Channel and frequency step size default values.

Note: When in Channel Display Mode or while Key Lock is activated, you cannot perform VFO reset or Full reset.

FULL RESET

This resets all transceiver parameters to the factory default values. There are two methods available for resetting the transceiver.

Full Reset Method 1:

1 With the transceiver power OFF, press **[F]+[⏻]** (Power).
- • All indicators light momentarily, followed by the full reset confirmation message.

2 Press **[F]** .
- • "SURE ?" appears.
- • Press any key other than **[F]** to cancel.

3 Press **[F]** again to reset the transceiver.
- • "WAIT" appears momentarily.

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Full Reset Method 2:

1 Press **[F]**, **[MENU]** and turn the **Tuning** control to select Menu No. 99 (RESET).

2 Press **[MENU]** and turn the **Tuning** control to select "FULL".

3 Press **[MENU]**.
- "SURE ?" appears.

```
ᴴ SURE  ?   99
```

- Press any key other than **[MENU]** to cancel.

4 Press **[MENU]** to reset the transceiver.
- "WAIT" appears momentarily.

VFO RESET

This resets the transceiver parameters excluding the DTMF Memory, the Memory channel contents, and the Call channel contents. There are two methods available for resetting the transceiver.

Note: Menu No. 7 (P.VFO) and Menu No. 10 (OFFSET) return to the factory default values.

VFO Reset Method 1:

1 With the transceiver power OFF, press **[VFO]+[⏻]** (Power).
- The VFO reset confirmation message appears.

```
ᴴ VF.RST.?
```

2 Press **[VFO]**.
- "SURE ?" appears.
- Press any key other than **[VFO]** to cancel.

3 Press **[VFO]** again to reset the transceiver.
- "WAIT" appears momentarily.

VFO Reset Method 2:

1 Press **[F]**, **[MENU]** and turn the **Tuning** control to select Menu No. 99 (RESET).

2 Press **[MENU]** and turn the **Tuning** control to select "VFO".

3 Press **[MENU]**.
- "SURE ?" appears.

```
ᴴ SURE  ?   99
```

- Press any key other than **[MENU]** to cancel.
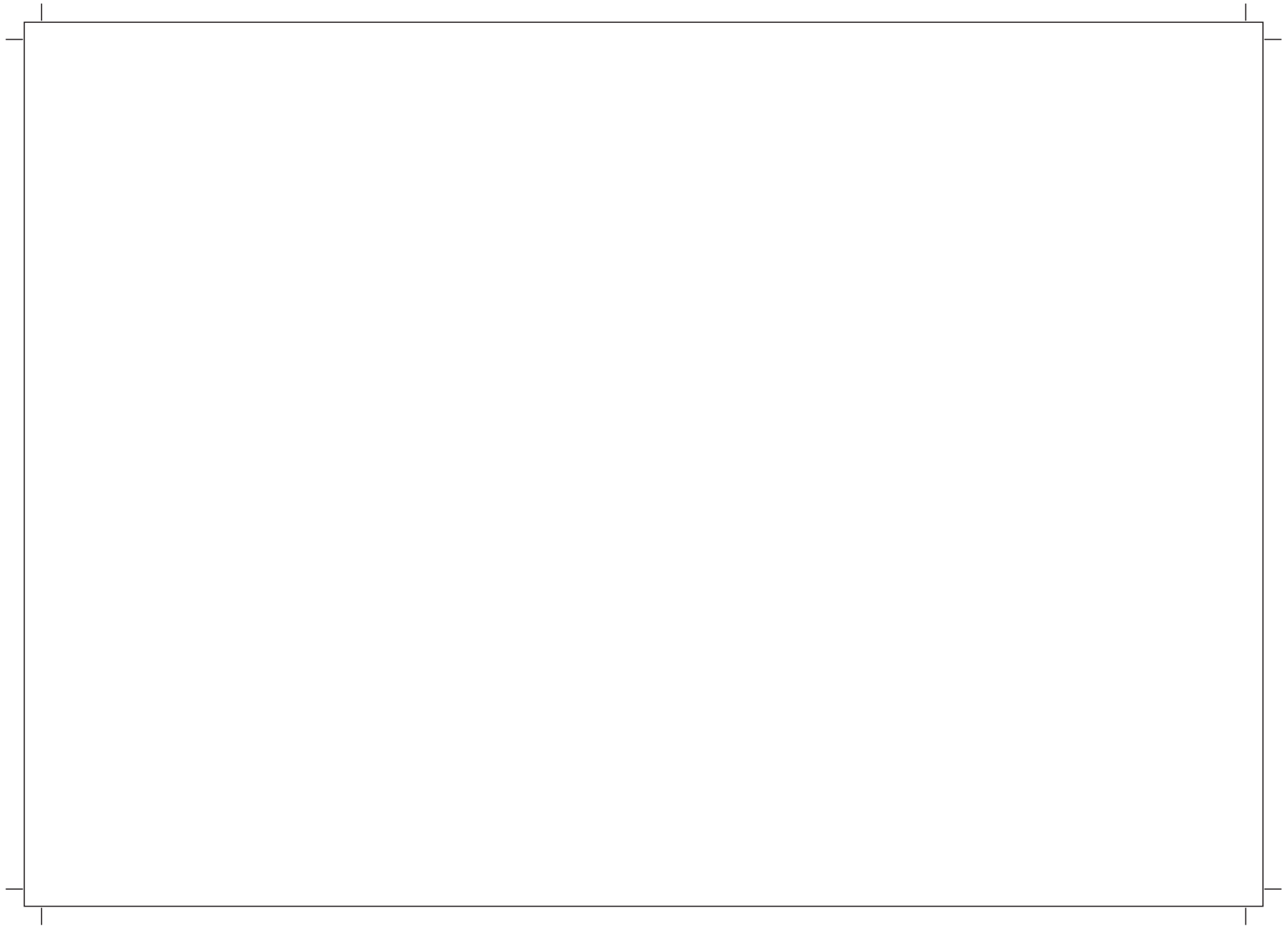
4 Press **[MENU]** to reset the transceiver.

TROUBLESHOOTING

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 13.8 V DC power supply and pressing the [⏻] (Power) switch. Nothing appears on the display.	1 The power cable was connected backwards. 2 One or more of the power cable fuses are open.	1 Connect the supplied DC power cable correctly: Red→2(+); Black→2(−). 2 Look for the cause of the blown fuse(s). After inspecting 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 is 13.8 V DC ±15% (11.7 V to 15.8 V DC). If the input voltage is outside this range, adjust your regulated power supply and/or check all power cable connections.
The frequency cannot be selected by turning the **Tuning** control or by pressing Mic **[UP]/[DWN]**.	Memory Recall was selected.	Press **[VFO]**.
Most buttons/keys and the **Tuning** control do not function.	1 One of the Lock functions is ON. 2 The transceiver is in Channel Display mode.	1 Unlock all of the Lock functions. 2 With the transceiver power OFF, press **[⏻]** (Power)+**[REV]** to exit Channel Display mode.

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Problem	Probable Cause	Corrective Action
Memory Channels cannot be selected by turning the **Tuning** control or by pressing Mic **[UP]/[DWN]**.	No data has been stored in any Memory Channels.	Store data in some Memory Channels.
You cannot transmit even though you press Mic **[PTT]**.	**1** The microphone plug was not inserted completely into the front panel connector. **2** You selected a transmit offset that places the transmit frequency outside the allowable transmit frequency range.	**1** Switch OFF the power, then insert the microphone plug until the locking tab clicks in place. **2** Press **[F]**, **[MENU]** and turn the **Tuning** control to select Menu No. 5 (SFT). Press **[MENU]** and turn the **Tuning** control to select "OFF". Press **[MENU]** to store the setting, then press any key other than **[MENU]** to exit Menu Mode.

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