ICOM

BASIC MANUAL

FM TRANSCEIVER

IC-V3500

Thank you for choosing this Icom product.
READ ALL INSTRUCTIONS carefully and completely before using this product.

■ Important

SAVE THESE INSTRUCTIONS— This instruction manual contains basic operating instructions for the IC-V3500.
For advanced operating instructions, see the **ADVANCED MANUAL** on the Icom website.
The Advanced manual can be downloaded from the following internet address:
https://www.icomjapan.com/support/

This instruction sheet includes some functions that are usable only when they are preset by your dealer. The transceiver may have other functions and operations that are not described in this instruction sheet. Ask your dealer for details.

■ Explicit definitions

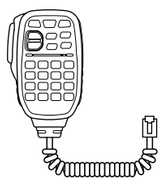
WORD	DEFINITION
⚠ DANGER!	Personal death, serious injury or an explosion may occur.
⚠ WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

Icom is not responsible for the destruction, damage to, or performance of any Icom or non-Icom equipment, if the malfunction is because of:
- Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, other natural disasters, disturbances, riots, war, or radioactive contamination.
- The use of Icom transceivers with any equipment that is not manufactured or approved by Icom.

■ Supplied accessories

NOTE: Some accessories may not be supplied, or the shape may differ, depending on the transceiver version.

Microphone

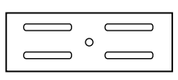


DC Power Cable (3 m)

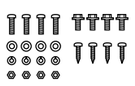
Spare Fuse (125 V 15 A)

Microphone hanger

Mobile mounting bracket



Mounting screws, nuts, and washers



■ Precautions

⚠ **DANGER HIGH RF VOLTAGE! NEVER** touch an antenna or antenna connector while transmitting. This could cause an electrical shock or burn.
⚠ **DANGER! NEVER** operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere. This could cause an explosion and death.
⚠ **DANGER! NEVER** place the transceiver where airbag deployment may be obstructed during mobile operations.
⚠ **WARNING RF EXPOSURE!** This transceiver emits Radio Frequency (RF) energy. Extreme caution should be observed when operating this transceiver. If you have any questions regarding RF exposure and safety standards, please refer to the Federal Communications Commission Office of Engineering and Technology's report on Evaluating Compliance with FCC Guidelines for Human Radio Frequency Electromagnetic Fields (OET Bulletin 65).
⚠ **WARNING! NEVER** connect the transceiver to an AC outlet. This may pose a fire hazard and/or result in an electric shock.
⚠ **WARNING! NEVER** operate the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power source and antenna before a storm.
⚠ **WARNING! NEVER** cut the DC power cable between the DC plug and fuse holder. If an incorrect connection is made after cutting, the transceiver may be damaged.
⚠ **WARNING! NEVER** connect the transceiver to a power source of more than 16 V DC, such as a 24 V battery. This could damage the transceiver.
⚠ **WARNING! NEVER** operate or touch the transceiver with wet hands. This could cause an electric shock or damage the transceiver.
⚠ **WARNING! NEVER** place the transceiver where the vehicle's normal operation may be hindered or where it could cause bodily injury.
⚠ **WARNING! NEVER** let metal, wire, or other objects contact the transceiver inside or make incorrect contact with connectors on the rear panel. This could cause an electric shock or damage the transceiver.
⚠ **WARNING! NEVER** operate the equipment if you notice an abnormal odor, sound, or smoke. Immediately turn OFF the power and the DC power cable. Contact your Icom dealer or distributor for advice.
CAUTION: DO NOT operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.
CAUTION DO NOT reverse the DC power cable polarity. This could damage the transceiver.
CAUTION: DO NOT expose the transceiver to rain, snow, or any liquids. They could damage the transceiver.
CAUTION: DO NOT operate the transceiver without running the vehicle's engine. The vehicle's battery will quickly run out when the transceiver is used while the vehicle's engine is OFF.
CAUTION: DO NOT install or place the transceiver in a place without adequate ventilation or block any cooling vents on the top, rear, sides, or bottom of the transceiver. Heat dissipation may be reduced and damage the transceiver.
CAUTION: DO NOT use harsh solvents such as Benzine or alcohol when cleaning. This could damage the equipment surfaces. If the surface becomes dusty or dirty, wipe it clean with a soft, dry cloth.
CAUTION: DO NOT use or leave the transceiver in areas with temperatures below −10°C or above +60°C, or in areas exposed to direct sunlight, such as the dashboard.
CAUTION: DO NOT use or leave the transceiver in excessively dusty environments. This could damage the transceiver.
CAUTION: DO NOT use the non-specified microphone. Other microphones have different pin assignments and may damage the transceiver.
NEVER place the transceiver in an insecure place to avoid inadvertent use by unauthorized persons.
DO NOT push PTT unless you actually intend to transmit.
DO NOT place the transceiver where hot or cold air blows directly onto it, during mobile operation.
NOTE: During maritime mobile operation, keep the transceiver and microphone as far away as possible from the magnetic navigation compass to prevent erroneous indications.

■ FCC information

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 several 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.

CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

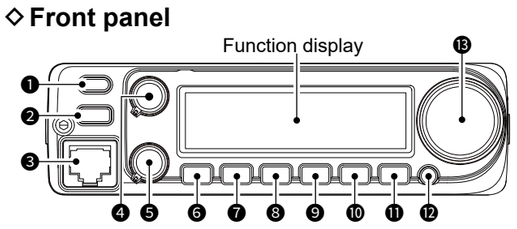
■ Canada information

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

■ Panel description

NOTE: The Marine and Weather Channel mode may not be used, depending on the transceiver version.

◇ Front panel



❶ **POWER KEY [⏻]**
Hold down for 1 second to turn the transceiver ON or OFF.

❷ **MEMORY WRITE KEY [S.MW MW]**
- Push to enter the Memory Write mode.
- Hold down for 1 second to set the selected Memory channel.
  ⓘ Continue to hold down the key to automatically increment the Memory channels.

❸ **MICROPHONE CONNECTOR**
Connects to the supplied microphone.

❹ **VOLUME CONTROL [VOL]**
Rotate to adjust the audio level.

❺ **SQUELCH CONTROL [SQL]**
Rotate to adjust the squelch level.
ⓘ The S-meter squelch or attenuator squelch is activated when rotating [SQL] right from the 12 o'clock position.

❻ **SET•LOCK KEY [SET LOCK]**
- Push to enter to the Set mode.
- Hold down for 1 second to turn the Lock function ON or OFF.

❼ **MONITOR•CHANNEL NAME•PA KEY [MONI ANM PA]**
- Push to turn the monitor function ON or OFF.
- In the Memory or Call Channel mode, hold down for 1 second to turn the channel name or number ON or OFF.
- In the Marine Channel mode, hold down for 1 second to turn the Public Address function ON or OFF.

❽ **OUTPUT POWER•DUPLEX KEY [LOW DUP]**
- Push to select the output power.
- Hold down for 1 second to select the minus Duplex, plus Duplex, or Simplex mode.

❾ **TONE•TONE SCAN KEY [TONE T-SCAN]**
- Push to select the Tone function.
- Hold down for 1 second to start a Tone scan.

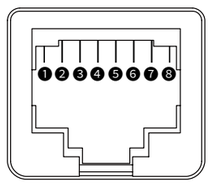
❿ **MEMORY/CALL•PRIORITY KEY [M/CALL PRIO]**
- Push to select the Memory, Call, Marine, or Weather Channel mode.
- Hold down for 1 second to start a Priority Watch.

⓫ **VFO/MHz TUNING•SCAN KEY [V/MHz SCAN]**
- Push to select the VFO mode.
  ⓘ In the VFO mode, push to select the 10 MHz or 1 MHz tuning step.
- Hold down for 1 second to start a scan.
  ⓘ Push to cancel a scan.

⓬ **BANK•OPTION KEY [BANK OPT]**
- In the Memory mode, push to select a memory bank.
- Hold down for 1 second to enter the Option Set mode.
- In the Marine Channel mode, hold down for 1 second to enter the Marine Set mode.
  ⓘ You can assign the Emergency Call function or the Temporary Volume function to this key. See the Advanced manual for details.

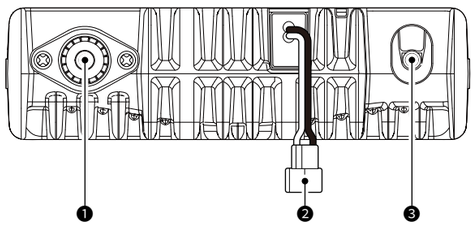
⓭ **TUNING DIAL [DIAL]**
- Select the operating frequency or Memory channel.
- Select an option in the Set mode.
- Change the scanning direction.

◇ Microphone connector information



❶ **+8 V DC output (Maximum 35 mA)**
❷ **Channel up/down**
❸ **8 V control IN**
❹ **PTT**
❺ **GND (microphone ground)**
❻ **MIC (microphone input)**
❼ **GND**
❽ **Data IN**

◇ Rear panel



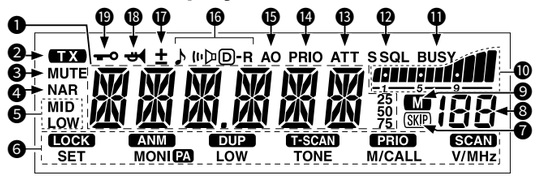
❶ **ANTENNA CONNECTOR [ANT]**
Connects to a 50 Ω antenna through a 50 Ω PL-259 coaxial cable.

❷ **POWER RECEPTACLE [DC13.8V]**
Connect a 13.8 V DC ±15% power source with the supplied DC power cable.

NOTE: DO NOT use a cigarette lighter socket as a power source when operating in a vehicle. The plug may cause voltage drops, and ignition noise may be superimposed onto the transmit or receive audio.

❸ **SPEAKER JACK [SP]**
Connects to a 4 Ω speaker.
ⓘ Audio output power is more than 3.5 W.

◇ Function display



❶ **FREQUENCY READOUT**
Displays the operating frequency, channel name, Set mode contents, and so on.
- The frequency decimal point blinks during a scan.
- In the DTMF Memory mode, "d" is displayed in the 100 MHz digits.

❷ **TRANSMIT ICON**
- Displayed while transmitting.
- Blinks while transmitting when the One-Touch PTT function is ON.

❸ **AUDIO MUTE ICON**
Displayed when the Audio Mute function is ON.

❹ **NARROW MODE ICON**
Displayed when "Narrow" is selected in the Wide/Narrow setting.

❺ **OUTPUT POWER ICONS**
Displays the selected output power level.
ⓘ If no output power icon is displayed, the level is set to "High."

❻ **KEY ICONS**
Displays the functions of the keys directly below the function display.

❼ **SKIP ICON**
Displayed when the selected Memory channel is set as a Skip channel.

❽ **Memory channel NUMBER READOUT**
- Displays the selected Memory channel number.
- A "C" is displayed when the Call channel is selected.

NOTE: When the VFO mode is selected from the Call Channel mode, a small "c" is displayed instead of the Memory channel number.

❾ **MEMORY ICON**
Displayed when the Memory mode is selected.

❿ **S/RF INDICATOR**
- Displays the relative signal strength while receiving signals.
- Displays the output power level while transmitting.

⓫ **BUSY ICON**
- Displayed while receiving a signal or the squelch is open.
- Blinks when the Monitor function is ON.

⓬ **S-METER SQUELCH ICON**
Displayed when the S-meter Squelch function is ON.

⓭ **SQUELCH ATTENUATOR ICON**
Displayed when the Squelch Attenuator function is ON.

⓮ **PRIORITY WATCH ICON**
Displayed during a Priority Watch.

⓯ **AUTO POWER OFF ICON**
Displayed when the Auto Power OFF function is ON.

⓰ **TONE ICONS**
Displayed when the Tone function is ON.
ⓘ Push [TONE T-SCAN] to select the tone function.

♪	Subaudible tone encoder (TX only)
and	CTCSS Pocket Beep function
	CTCSS Squelch function
♪ and Ⓓ	DTCS encoder (only TX)
and Ⓓ	DTCS Pocket Beep function
Ⓓ	DTCS Squelch function
and -R	Reverse CTCSS Squelch function
Ⓓ and -R	Reverse DTCS Squelch function

⓱ **DUPLEX ICONS**
- A "+" is displayed when in the plus Duplex mode.
- A "–" is displayed when in the minus Duplex mode.

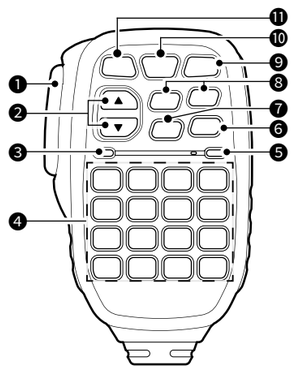
⓲ **FOGHORN ICON**
Displayed when the Foghorn function is ON.

⓳ **LOCK ICON**
Displayed when the Lock function is ON.

■ Microphone

NOTE: The supplied microphone is different, depending on the transceiver version.

◇ HM-133V



❶ **PTT SWITCH**
- Hold down to transmit, release to receive.
- Push to switch between transmission and reception when the One-Touch PTT function is ON.

❷ **UP/DOWN KEYS [▲] or [▼]**
- Push to select the operating frequency, Memory channel, mode setting, and so on.
- Hold down either key for 1 second to start scanning.
  ⓘ The scanning direction follows the direction of the key's arrow.

❸ **ACTIVITY INDICATOR**
- Lights red when any key other than [FUNC] or [DTMF-S] is pushed, or while transmitting.
- Lights orange when the Microphone Keypad Lock function is ON.
- Lights green when the One-Touch PTT function is ON.

❹ **KEYPAD**
Push the keys to activate various functions.

❺ **FUNCTION INDICATOR**
- Lights orange when [FUNC] is activated—indicating the secondary function of keys can be used.
- Lights green when [DTMF-S] is activated—DTMF signals can be transmitted using the keypad.

❻ **FUNCTION KEY [FUNC]**
Push this key and then push the keypad to turn the secondary function ON or OFF.

❼ **DTMF MEMORY SELECT KEY [DTMF-S]**
Push to turn ON the DTMF direct selection.
ⓘ See the table below for details.

❽ **FUNCTION KEYS [F-1] and [F-2]**
Push to activate the assigned settings.

❾ **BANK/OPTION KEY [BANK/OPTION]**
- In the Memory mode, push to select the memory bank option.
- In the Marine Channel mode, hold down for 1 second to select the Marine Set mode.
- In the Marine Set mode, push to select the next item.
- Hold down for 1 second to select the Option Set mode.
  ⓘ When the Emergency Call function or the Temporary Volume function is assigned, each function is turned ON.

❿ **MEMORY/CALL KEY [MR/CALL]**
- Push to select the Memory mode.
- Hold down for 1 second to select the Call channel.
- In the Marine Set mode, push to select the previous item.

⓫ **VFO/LOCK KEY [VFO/LOCK]**
- Push to select the VFO mode.
- Hold down for 1 second to turn the Lock function ON or OFF.

◇ HM-133V Keypad

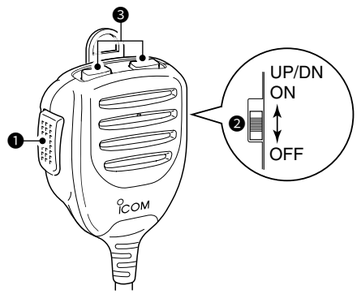
KEY	FUNCTION	SECONDARY FUNCTION ([FUNC]+key)
ANM MONI 1 [MONI 1 ANM]	Opens or closes the squelch.	In the Memory mode, turns the channel names or number display ON or OFF.
T-SCAN SCAN 2 [SCAN 2 T-SCAN]	Starts or stops scanning.	Starts and stops a Tone scan.
PTT-M PRIO 3 [PRIO 3 PTT-M]	Starts or stops a Priority Watch.	Turns the One-Touch PTT function ON or OFF. ⓘ See the Advanced manual for details.
DTCS HIGH 4 [HIGH 4 DTCS]	Selects the high output power.	Turns ON the DTCS Squelch function.
DTCS((•)) MID 5 [MID 5 DTCS((•))]	Selects the middle output power.	Turns ON the DTCS Pocket Beep function.
DTMF LOW 6 [LOW 6 DTMF]	Selects the low output power.	Turns ON the DTMF Memory encoder.
TONE DUP- 7 [DUP- 7 TONE]	Selects the minus Duplex mode.	Turns ON the subaudible tone encoder.
TSQL((•)) DUP+ 8 [DUP+ 8 TSQL((•))]	Selects the plus Duplex mode.	Turns ON the CTCSS Pocket Beep function.
TSQL SIMP 9 [SIMP 9 TSQL]	Selects the Simplex mode.	Turns ON the Tone Squelch function.
TONE-2 VOL▲ 0 [VOL▲ 0 TONE-2]	Turns up the audio level.	Sends a 1750 Hz tone while holding down.
MW CLR A [CLR A MW]	• Cancels frequency entry. • Cancels a scan or a Priority Watch. • Exits the Set mode.	• Selects the Memory Channel Programming mode. • Advances the Memory channel number when continuously pushed after programming is completed.
D-OFF SET B [SET B D-OFF]	• Enters the Set mode. • Selects the next item in the Set mode.	Turns OFF the DTMF Memory mode.
T-OFF ENT C [ENT C T-OFF]	• Sets the keypad for numeral input. • Selects the previous item in the Set mode.	Turns OFF the DTCS/Tone squelch function, DTCS/CTCSS pocket beep function, or subaudible tone encoder.
MUTE SQL▲ D [SQL▲ D MUTE]	Turns up the squelch level.	Turn the Audio Mute function ON or OFF. ⓘ When the function is ON, "**MUTE**" is displayed. ⓘ If any operation is performed, the function is turned OFF.
TONE-1 VOL▼ ✳ [VOL▼ ✳ TONE-1]	Turns down the audio level.	Sends a 1750 Hz tone for 1 second.
16KEY-L SQL▼ # [SQL▼ # 16KEY-L]	Turns down the squelch level.	Turn the Microphone Keypad Lock function ON or OFF. ⓘ When the function is ON, the activity indicator lights orange and the digit keys on the keypad (including the [A] to [D], [✳], and [#] keys) are locked. Other keys and all keys on the transceiver can be used. ⓘ If the transceiver is turned OFF with this function ON, the function will remain ON even after the transceiver is turned ON again.

NOTE: After pushing [DTMF-S], transmits the appropriate DTMF code. When the DTMF Memory encoder is turned ON, push [A] to [D], [✳], [#], or [0] to [9] to transmit the appropriate DTMF Memory contents.

ⓘ When the audio level or the squelch level is changed from the HM-133V, the level will be displayed in the Memory channel number readout and the S/RF indicator. See the Advanced manual for details.
ⓘ The output level cannot be changed from the HM-133V while transmitting.

■ Microphone

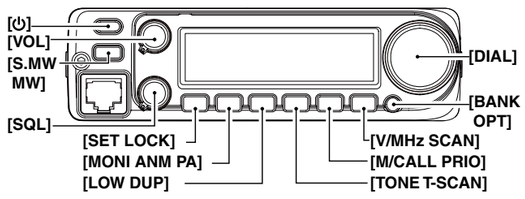
◇ HM-154



❶ PTT SWITCH
Hold down to transmit, release to receive.
❷ UP/DOWN LOCK SWITCH
Slide to lock or unlock the UP/DOWN keys.
❸ UP/DOWN KEYS [UP]/[DN]
- Push to change the operating frequency, Memory channel, Set mode setting, and so on.
- Hold down either key for 1 second to start scanning.
  ⓘ The scanning direction follows the name of the key ([UP]: Channel up, [DN]: Channel down).

■ Basic operation

IMPORTANT: Transmission is inhibited in the Marine Channel mode.



◇ Turning the transceiver ON/OFF

- Hold down [⏻] for 1 second to turn the transceiver ON or OFF.

◇ VFO mode selection

The IC-V3500 has two basic operating modes, the VFO mode and the Memory mode.

- Push [V/MHz SCAN] to select the VFO mode.
  ⓘ Push [M/CALL PRIO] several times to select the Memory, Call, Marine, or Weather Channel mode.

◇ Setting a frequency

1. Push [V/MHz SCAN] to select the VFO mode.
2. Rotate [DIAL] to set the frequency.
   • The frequency changes according to the selected tuning step.
   ⓘ Push [V/MHz SCAN] several times to change the frequency step between 10 MHz and 1 MHz.

◇ Tuning step selection

The selected tuning step is applied to the scan.
Option (kHz):
5.0, 6.25, 10.0, 12.5, 15.0, 20.0, 25.0, 30.0, 50.0

NOTE: For convenience, select the tuning step that matches the frequency intervals of the repeaters in your area.

1. Push [V/MHz SCAN] to select the VFO mode.
2. Push [SET LOCK] to enter the Set mode.
3. Push [SET LOCK] or [MONI ANM PA] several times, until “TS” is displayed.
4. Rotate [DIAL] to select the tuning step.
5. Push any key other than [SET LOCK] or [MONI ANM PA] to save the entry and exit the Set mode.

◇ Call channel selection

- Push [M/CALL PRIO] several times to select the Call channel.
  • A “C” is displayed instead of a Memory channel number.
  ⓘ Push [M/CALL PRIO] more to select the Memory, Call, Marine, or Weather Channel mode, or push [V/MHz SCAN] to select the VFO mode.

◇ Receiving

1. Hold down [⏻] for 1 second to turn ON the transceiver.
2. Rotate [VOL] to adjust the audio level.
   ⓘ Push [MONI ANM PA] to open the squelch, and then rotate [VOL] to adjust the audio level.
3. Adjust the squelch level, as described below.
   ⓘ First, rotate [SQL] fully counterclockwise, and then rotate [SQL] clockwise until the noise just disappears.
4. Set the operating frequency.
5. When receiving a signal, the squelch opens, and audio can be heard.
   ⓘ “**BUSY**” is displayed, and the S/RF indicator shows the relative strength of the received signal.

◇ Transmitting

CAUTION: DO NOT transmit without an antenna.

NOTE: To prevent interference, listen to the channel before transmitting by opening the squelch. To open the squelch, rotate [DIAL] counterclockwise or push [SQL▼] on the microphone.

1. Set the operating frequency.
   • Adjust the output power if desired. See the Selecting output power section of this sheet.
2. Hold down [PTT] to transmit.
   • “TX” is displayed while transmitting.
   ⓘ The S/RF indicator shows the output power level.
   ⓘ The One-Touch PTT function can be used.
3. Speak into the microphone at your normal voice level.
   ⓘ **DO NOT** hold the microphone too close to your mouth, or speak too loudly. This may distort the signal.
4. Release [PTT] to receive.

NOTE: When the TX Inhibit is set to “Inhibit,” you cannot transmit. (Set in the CS-V3500 PROGRAMMING SOFTWARE.)

IMPORTANT for 65 W transmission:
The IC-V3500 has a built-in current detector circuit that protects the power amplifier from excessive current flow. When excessive current flow is detected, the circuit automatically reduces the transmit output power to approximately 25 Watts.
The IC-V3500 has a thermal detector circuit too, which protects the power amplifier from excessive heat. The circuit automatically reduces the transmit output power to approximately 10 to 20 Watts as the temperature increases.

◇ Lock function

Activate to prevent accidental channel changes and unnecessary function access.

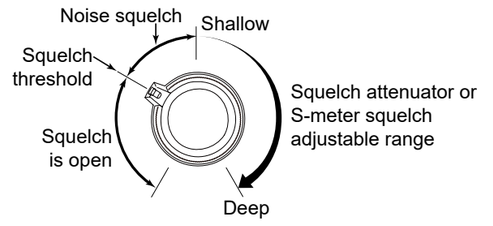
- Hold down [SET LOCK] for 1 second to turn the Lock function ON or OFF.
  ⓘ When the function is ON, “🔒” is displayed.
  ⓘ [PTT], [MONI ANM PA], [VOL], and [SQL] can be used, even when the function is ON.
  ⓘ 1750 Hz tone, DTMF, Tones or DTMF Memory contents can be transmitted from the HM-133V.

◇ Monitor function

This function is used to listen to weak signals, or to manually open the squelch. You can use it without disturbing the squelch setting, even when the Mute functions such as the Tone squelch are in use.

- Push [MONI ANM PA] to turn the Monitor function ON or OFF.
  ⓘ When the function is ON, “**BUSY**” blinks.

◇ Squelch attenuator



The transceiver has an RF attenuator related to the squelch level setting. Approximately 20 dB of attenuation is obtained at the maximum setting.

Turn ON the Squelch Attenuator function:

1. Hold down [⏻] for 1 second to turn OFF the transceiver.
2. While holding down [SET LOCK], hold down [⏻] for 1 second to turn ON the transceiver and enter the Initial Set mode.
3. Push [SET LOCK] or [MONI ANM PA] several times to select the “SQL” item.
4. Rotate [DIAL] to select “AT” (Attenuator).
5. Push [⏻] to save and exit the Initial Set mode.
6. Rotate [SQL] clockwise past the 12 o’clock position to turn ON the Squelch Attenuator function.
   ⓘ The attenuation level can be adjusted to approximately 20 dB between the 12 o’clock and fully clockwise positions.
   ⓘ When setting the squelch from the microphone, a level greater than ‘17’ activates the attenuator.

NOTE: When using the Monitor function
The Squelch Attenuator function works even when the Monitor function is ON. It is recommended to set [SQL] between 10 and 12 o’clock (7 to 17 level when set using the HM-133V).

◇ S-meter Squelch

The S-meter Squelch function disables the audio output from the speaker or headphones when the received signal is weaker than the specified S-meter squelch level.

Turn ON the S-meter Squelch function:

1. Hold down [⏻] for 1 second to turn OFF the transceiver.
2. While holding down [SET LOCK], hold down [⏻] for 1 second to turn ON the transceiver and enter the Initial Set mode.
3. Push [SET LOCK] or [MONI ANM PA] several times to select the “SQL” item.
4. Rotate [DIAL] to select “SS” (S-meter squelch).
5. Push [⏻] to exit the Initial Set mode.
6. Rotate [SQL] clockwise past the 12 o’clock position to turn ON the S-meter Squelch function.

◇ Selecting output power

Set the output power level to suit your operating requirements. Lower output power during short-distance communications may reduce the possibility of interference to other stations and reduce the current consumption.

- Push [LOW DUP].
  • The output power level is changed and the selected level is displayed.
  ⓘ If no output power icon is displayed, the level is set to “High.”
  ⓘ The level can be changed even while transmitting.

■ Scan

◇ Preparation

Set the scan resume option, enter the scan edges, enter 2 or more Memory channels, set the Skip channels.

◇ Operation

1. Select the mode or bank.
   For Full/Programmed scan:
   Push [V/MHz SCAN] to select the VFO mode.
   For Memory scan:
   Push [M/CALL PRIO] to select the Memory mode.
   For Bank scan:
   Push [BANK], and then rotate [DIAL] to select the bank.
2. Set the squelch to the point where the noise disappears.
3. Hold down [V/MHz SCAN] for 1 second to start scanning.

Information

- Rotate [DIAL] to change the scanning direction.
- The scan type blinks in the Memory channel readout.
- Push [SET LOCK] to switch between a full scan and a Programmed scan (P1, P2, and P3).
- Push [V/MHz SCAN] to cancel the scan.
- You can also use the full scan in the Marine Channel mode.

■ Memory channel

The IC-V3500 has a total of 207 Memory channels for saving often used operating frequencies, repeater settings, and so on. Memories include 6 scan edges and 1 Call channel.

◇ Programming the Memory channel

1. Push [V/MHz SCAN] to select the VFO mode.
2. Set the desired frequency.
   • If desired, set other data (Example: frequency offset, duplex direction, tone squelch, and so on).
3. Push [S.MW MW], and then rotate [DIAL] to select the Memory channel.
   • “M” and the Memory channel number blink.
4. Hold down [S.MW MW] for 1 second to write.
   • 3 beeps sound.
   • The Memory channel number automatically increases when holding down [S.MW MW] after writing.

◇ Selecting the Memory channel

1. Push [M/CALL PRIO] several times to select the Memory mode.
   • “M” is displayed.
2. Rotate [DIAL] to select a desired Memory channel.
   ⓘ Only programmed Memory channels can be selected.

■ Repeater operation

1. Hold down [LOW DUP] for 1 second once or twice to select the minus or plus Duplex mode.
2. If accessing the repeater requires a subaudible tone, push [TONE T-SCAN] several times, until “♪” is displayed.

■ Set modes

◇ Using the Set mode

1. Push [SET LOCK] to enter the Set mode.
2. Push [SET LOCK] or [MONI ANM PA] to select a desired item.
3. Rotate [DIAL] to set an option or value.
4. Push any key other than [SET LOCK] or [MONI ANM PA] to exit the Set mode.

◇ Set mode items

NOTE: The Set mode items contained in the transceiver may differ, depending on the transceiver’s version or presetting. Ask your dealer for details.

Repeater Tone frequency
“88.5 ct”
Select the subaudible tone needed to access the repeater.

Tone Squelch frequency
“88.5 tt”
Select the CTCSS tone frequency for the tone squelch function.

DTCS code
“023 dt”
Set the DTCS code for DTCS squelch and DTCS encoder.

DTCS polarity
“DTP-NN”
Set the Transmit and Receive DTCS polarity.

Frequency offset
“0.600”
Set the duplex frequency offset.

Reverse mode
“REV-OF”
Turn the Reversed Duplex function ON or OFF.

Tuning step
“TS 5”
Set the VFO tuning step.

Scan Stop timer
“SCP-10”
Select the scan pause timer option.

Scan Resume timer
“SCT-2”
Select the resume options of a scan pause.

Display dimmer
“DIM-4”
Set the backlight brightness level.

Auto dimmer
“ATD-OF”
Set the Auto Dimmer brightness level.

Display contrast
“CON-2”
Adjust the LCD display contrast.

Transmit permission
“TX -ON”
Turn the TX inhibit function ON or OFF. (Select “OFF” to inhibit transmitting.)

Channel Skip setting*
“CHS-OF 0”
Turn the Skip function ON or OFF.

Bank setting*
“BAK---- 0”
Assign the memory and Scan edge channels.

Bank Link function*
“BLK-OF”
Assign the banks for a Continuous Banks scan.

Wide/Narrow
“W/N W”
Set both the transmit and receive passband.

Weather alert (for only the USA version)
“ALT-OF”
Turn the Weather Alert function ON or OFF.

MIC gain
“MIC-HI”
Set the microphone sensitivity.

* Displayed only when accessing the Set mode from the Memory mode.

◇ Using the Initial Set mode

The initial Set mode can be accessed when the transceiver is turned ON, and allows you to set seldom-changed settings. In this way, you can “customize” the transceiver to suit your preference and operating style.

1. While holding down [SET LOCK], hold down [⏻] for 1 second to enter the Initial Set mode.
2. Push [SET LOCK] or [MONI ANM PA] to select a desired item.
3. Rotate [DIAL] to select an option or value.
4. Push [⏻] to save and exit the Initial Set mode.

◇ Initial Set mode items

Key-touch beep
“BEP-ON”
Turn the key-touch beep ON or OFF.

Time-out timer
“TOT-OF”
Inhibits continuous transmissions longer than the selected time period.

Auto Repeater (for only the USA version)
“RPT-OF”
Select the Auto Repeater function setting from “OF” (The function is OFF), “R1” (Activates the duplex setting only), or “R2” (Activates the duplex settings and the Tone Encoder function).

Auto Power OFF
“POF-OF”
Automatically turns OFF the transceiver.

Repeater Lockout
“RLO-OF”
Set the transmission lockout capability.

Squelch delay
“SQT-5”
Set the squelch delay to “S” (Short) or “L” (Long).

Squelch type
“SQL-OF”
Set the squelch type from “OFF” (Noise squelch), “SS” (S-meter Squelch), or “AT” (Squelch Attenuator).

Tone burst
“SQB-OF”
Turn the Tone Burst function ON or OFF.

DTMF speed
“DTD-1”
Set the DTMF sending rate to 1 to 3 or 5.

Display type
“DSP-FR”
Set the display type for Memory mode operation.

Voltage display
“VLT-ON”
Select whether or not to display the battery voltage when turning ON the transceiver.

[BANK OPT] key
“OK-BAK”
Assign the function to [BANK OPT] from “BAK” (Bank/Option), “EMR” (Emergency), or “TVo” (Temporary Volume/Option).

Emergency channel
“EM-VFO”
Select a channel used for an emergency purpose from “VFO” (VFO frequency), “MR 0 to 199*” (Memory channels), “MR 1A to 3B*” (Scan edge channels), or “CAL” (Call channels).
* Only the programmed channels are displayed.

Emergency Alert volume
“EV-MAX”
Selects whether or not to sound the beeps, the alert, and the received signal when using the Emergency Call function.

Temporary volume
“TV- 0”
Set the volume level when the Temporary Volume function is turned ON.
(Set “0” to use it as the One-Touch Mute function)

■ Resetting

◇ Partial reset

If you want to reset the VFO frequency, VFO settings and Set mode items to their default values, without clearing the memory contents, you can do a partial reset.

1. Hold down [⏻] for 1 second to turn OFF the transceiver.
2. While holding down [V/MHz SCAN], hold down [⏻] for 1 second to turn ON the transceiver.
   • The partial reset is completed.

■ Specification

ⓘ All stated specifications are subject to change without notice or obligation.

General	
Frequency coverage * Guaranteed: 144 ~ 148 MHz range only.	USA RX: 136 ~ 174* TX: 144 ~ 148 EXP: RX/TX 136 ~ 174* KOR, TPE: RX/TX 144 ~ 146 SAU: RX/TX 137.0625, 137.2000, 137.6375, 137.6625, 137.7375
Type of emission	FM
Number of Memory channels	USA, EXP, KOR, TPE: 207 (including 6 scan edges and 1 Call channel) SAU: 5
Scan types	USA, EXP, KOR, TPE: Full, Program, Priority, Memory channel, Bank, Skip, Tone scans SAU: Memory channel
Frequency resolution (Except for the SAU version)	5, 6.25, 10, 12.5, 15, 20, 25, 30, 50 kHz
Operating temperature range	–10°C to +60°C (+14˚F to +140˚F)
Frequency stability	±3 ppm
Power supply requirement	13.8 V DC ±15%
Current drain (at 13.8 V DC: approximate)	TX: 11 A at 65 W (11 A at 50 W for the KOR version, 9 A at 24 W for the TPE version, and 9 A at 23 W for the SAU version) RX: Standby 0.4 A Maximum audio 1.5 A
Antenna connector	SO-239 (50 Ω)
Dimensions (projections not included)	140.0 (W) × 40.0 (H) × 118.0 (D) mm 5.5 (W) × 1.6 (H) × 4.6 (D) in
Weight (approximate)	1.1 kg, 2.4 lb

Transmitter	
Modulation system	Variable reactance frequency modulation
Output power	See the table on the right.
Maximum frequency deviation * Except for the SAU version	±5.0 kHz (Wide)*/ ±2.5 kHz (Narrow)
Spurious emissions	USA, EXP, KOR, TPE: Less than –60 dBc SAU: Less than –50 dBc
Microphone connector	8-pin modular (600 Ω)

Output power (approximate)

Indicator	USA, EXP	KOR	TPE	SAU
High:	65 W	50 W	24 W	23 W
Mid:	25 W	25 W	10 W	10 W
Mid-Low:	10 W	10 W	–	–
Low:	5 W	5 W	5 W	5 W

Receiver	
Receive system	Double-conversion superheterodyne
Intermediate frequencies	1st: 46.35 MHz, 2nd: 450 kHz
Sensitivity (at 12 dB SINAD)	USA, EXP, KOR, TPE: Less than 0.18 µV SAU: Less than 0.25 µV
Squelch sensitivity	USA, EXP, KOR, TPE: Less than 0.13 µV (threshold) SAU: Less than 0.18 µV (threshold)
Selectivity * Except for the SAU version	Wide*: More than ±6 kHz/6 dB Less than ±14 kHz/60 dB Narrow: More than ±3 kHz/6 dB Less than ±9 kHz/55 dB
Spurious and image rejection	More than 60 dB
AF output power (at 13.8 V DC)	More than 3.5 W (4.5 W typical) (at 10% distortion with a 4 Ω load)
External speaker connector	3-conductor 3.5 (d) mm (1/8 inch) /4 Ω

■ Options

◇ Speakers

- **SP-35/SP-35L** EXTERNAL SPEAKER
  Input impedance: 4 Ω
  Rated input: 5 W
  Maximum input: 7 W

◇ DC cables

- **OPC-345/OPC-347/OPC-1132** DC POWER CABLE

◇ Microphone

- **HM-133V/HM-154/HM-209** MICROPHONE
  HM-133V: Ten-key type
  HM-154: Non Ten-key type
  HM-209: Active noise canceling type

◇ Others

- **OPC-440** MICROPHONE EXTENSION CABLE
- **OPC-589** MICROPHONE ADAPTER CABLE
- **OPC-474** PROGRAMMING CABLE
  For transceiver-to-transceiver programming.
- **CS-V3500** PROGRAMMING SOFTWARE
  +OPC-478UC/OPC-478UC-1 PROGRAMMING CABLE
  Provides quick and easy programming of such settings as Memory channels and Set modes contents.

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