ICOM

BASIC MANUAL

VHF TRANSCEIVER

IC-G86

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

■ Important

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains basic operating instructions for the IC-G86. For advanced operating instructions, see the **ADVANCED MANUAL** on the Icom website.

■ 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.

■ Precautions

⚠ **WARNING! NEVER** use or charge Icom battery packs with non-Icom transceivers or non-Icom chargers. Only Icom battery packs are tested and approved for use with Icom transceivers or charged with Icom chargers. Using third-party or counterfeit battery packs or chargers may cause smoke, fire, or cause the battery to burst.

⚠ **WARNING! NEVER** hold the transceiver so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting.

⚠ **WARNING! NEVER** operate the transceiver with a headset or other audio accessories at high volume levels. The continuous high volume operation may cause a ringing in your ears. If you experience the ringing, reduce the volume level or discontinue use.

CAUTION: DO NOT short the terminals of the battery pack. Shorting may occur if the terminals touch metal objects such as a key, so be careful when placing the battery packs (or the transceiver) in bags, and so on. Carry them so that shorting cannot occur with metal objects. Shorting may damage not only the battery pack, but also 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 place or leave the transceiver in excessively dusty environments. This could damage the transceiver.

NOTE: DO NOT operate or leave the transceiver in areas with temperatures below –20°C (–4°F) or above +60°C (+140°F), or in areas subject to direct sunlight, such as the dashboard.

KEEP the transceiver away from heavy rain, and never immerse it in the water. The transceiver meets IP54* requirements (Dust protection and splash resistance). However, once the transceiver has been dropped, dust protection and splash resistance cannot be guaranteed due to the fact that the transceiver may be cracked, or the waterproof seal damaged, and so on.

* Only when the battery pack or case, antenna, and jack cover or optional HM-168LWP, HM-222HLWP, HS-94LWP or HS-95LWP are attached.

◇ Battery caution (For the Ni-MH BATTERY)

⚠ **DANGER! NEVER** incinerate used battery packs. Internal battery gas may cause an explosion.

CAUTION: DO NOT immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry **BEFORE** attaching it to the transceiver.

NOTE: Always use the battery within the specified temperature range, –5˚C ~ +60˚C (23˚F ~ 140˚F). Using the battery out of its specified temperature range will reduce the battery's performance and battery life.

NOTE: Shorter battery life could occur if the battery is left completely discharged, or in an excessive temperature environment (above 55˚C: 131˚F) for an extended period of time. If the battery must be left unused for a long time, it must be detached from the transceiver after charging. Keep it safely in a cool dry place at the following temperature range:
–20˚C ~ +45˚C (–4˚F ~ +113˚F) (up to a month)
–20˚C ~ +35˚C (–4˚F ~ +95˚F) (up to six months)
–20˚C ~ +25˚C (–4˚F ~ +77˚F) (up to a year*)
* We recommend charging the battery pack every 6 months.

Clean the battery terminals to avoid rust or misscontact.

Keep the battery terminals clean. It's a good idea to occasionally clean them.

If your Ni-MH battery pack seems to have no capacity, even after being charged, completely discharge it by leaving the power ON overnight. Then, fully charge the battery pack again. If the battery pack still does not retain a charge (or only very little charge), a new battery pack must be purchased.
Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation.
- Recommended temperature range for charging:
  10°C (50˚F) ~ 40°C (104˚F) (rapid charge with BC-191), or
  0°C (32˚F) ~ 45°C (113˚F) (regular charge with BC-192).
- Use the supplied charger or optional charger only. **NEVER** use other manufacturers' chargers.

The battery pack contains a rechargeable battery.
Charge the battery pack before first operating the transceiver, or when the battery pack becomes exhausted.
If you want to prolong the battery life, the following points should be observed:
- Avoid overcharging. The charging time by the BC-192 should be less than 48 hours.
- Use the battery pack until it becomes almost completely exhausted, under normal conditions. We recommend battery charging after transmitting becomes impossible.

◇ Battery caution (For the Li-ion BATTERY)

Misuse of Li-ion batteries may result in the following hazards: smoke, fire, or the battery may rupture. Misuse can also cause damage to the battery or degradation of battery performance.

⚠ **DANGER! NEVER** incinerate used battery packs. Internal battery gas may cause an explosion.

⚠ **DANGER! NEVER** solder the battery terminals, or **NEVER** modify the battery pack. This may cause heat generation, and the battery may burst, emit smoke or catch fire.

⚠ **DANGER! NEVER** place or leave battery packs in areas with temperatures above 60°C (140°F). High temperature buildup in the battery cells, such as could occur near fires or stoves, inside a sun-heated vehicle, or in direct sunlight for long periods of time may cause the battery cells to rupture or catch fire. Excessive temperatures may also degrade the battery pack's performance or shorten the battery cell's life.

⚠ **DANGER! NEVER** strike or otherwise impact the battery pack. Do not use the battery pack if it has been severely impacted or dropped, or if the pack has been subjected to heavy pressure. Battery pack damage may not be visible on the outside of the case. Even if the surface of the battery does not show cracks or any other damage, the cells inside the battery may rupture or catch fire.

⚠ **DANGER! NEVER** place battery packs near a fire. Fire or heat may cause them to rupture or explode. Dispose of used battery packs in accordance with local regulations.

⚠ **DANGER! NEVER** let fluid from inside the battery get in your eyes. This can cause blindness. Rinse your eyes with clean water, without rubbing them, and immediately go to a doctor.

⚠ **WARNING! NEVER** use deteriorated battery packs. They could cause a fire.

⚠ **WARNING! NEVER** put the battery pack in a microwave oven, high-pressure container, or in an induction heating cooker. This could cause a fire, overheating, or cause the battery cells to rupture.

⚠ **WARNING! NEVER** let fluid from inside the battery cells come in contact with your body. If it does, immediately wash with clean water.

CAUTION: DO NOT continue to use the battery pack if it emits an abnormal odor, heats up, or is discolored or deformed. If any of these conditions occur, contact your Icom dealer or distributor.

CAUTION: DO NOT expose the battery pack to rain, snow, saltwater, or any other liquids. Do not charge or use a wet pack. If the pack gets wet, be sure to wipe it with a clean dry cloth before using.

CAUTION: DO NOT use the battery pack out of the specified temperature range, –20°C ~ +60°C (–4°F ~ +140°F). Using the battery out of its specified temperature range will reduce its performance and battery cell's life.

CAUTION: DO NOT leave the pack fully charged, completely discharged, or in an excessive temperature environment (above 50°C, 122°F) for an extended period of time. If the battery pack must be left unused for a long time, it must be detached from the transceiver after discharging. You may use the battery pack until the remaining capacity is about half, then keep it safely in a cool and dry place at the following temperature range:
–20°C ~ +50°C (–4°F ~ +122°F) (within a month)
–20°C ~ +40°C (–4°F ~ +104°F) (within three months)
–20°C ~ +20°C (–4°F ~ +68°F) (within a year)

BE SURE to replace the battery pack with a new one approximately 5 years after manufacturing, even if it still holds a charge. The material inside the battery cells will become weak after a period of time, even with little use. The estimated number of times you can charge the pack is between 300 and 500. Even when the pack appears to be fully charged, the operating time of the transceiver may become short when:
- Approximately 5 years have passed since the pack was manufactured.
- The pack has been repeatedly charged.

ⓘ See "About the supplied battery charger" for the Extend Battery Life function.

◇ Charging caution

⚠ **DANGER! NEVER** charge the battery pack in areas with extremely high temperatures, such as near fires or stoves, inside a sun-heated vehicle, or in direct sunlight. In such environments, the safety/protection circuit in the battery will activate, causing the battery to stop charging.

⚠ **WARNING! NEVER** charge the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power adapter before a storm.

⚠ **WARNING! NEVER** charge or leave the battery in the battery charger beyond the specified time for charging. If the battery is not completely charged by the specified time, stop charging and remove the battery from the battery charger. Continuing to charge the battery beyond the specified time limit may cause a fire, overheating, or the battery may rupture.

⚠ **WARNING!** Occasionally observe the battery pack condition while charging. If any abnormal condition occurs, discontinue using the battery pack.

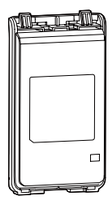
CAUTION: DO NOT insert the transceiver (battery attached to the transceiver) into the charger if it is wet or soiled. This could corrode the battery charger terminals or damage the charger. The charger is not waterproof.

NOTE: DO NOT charge the battery pack outside of the specified temperature range: 10˚C ~ 40˚C (50˚F ~ 104˚F). Otherwise, the charging time will be longer, but the battery will not reach a full charge. While charging, at a point after the temperature goes out of the specified range, the charging will automatically stop.

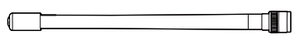
■ Accessories

◇ Supplied Accessories

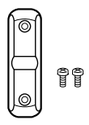
Battery pack



Antenna



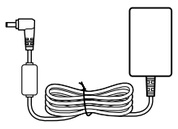
Jack cover (with screws)



Belt clip

Battery charger

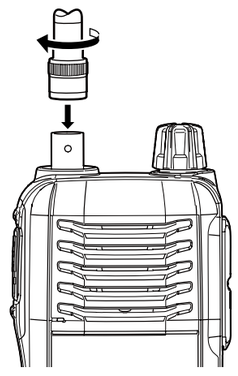
Power adapter



NOTE: Some accessories are not supplied, or the shape is different, depending on the transceiver version.

◇ Antenna

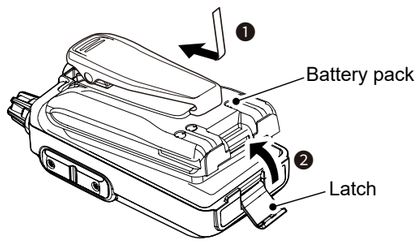
Insert the antenna into the antenna connector and rotate the antenna base to lock it in place.



CAUTION:
- **DO NOT** carry the transceiver by holding only the antenna.
- **DO NOT** transmit without an antenna.

◇ Battery pack

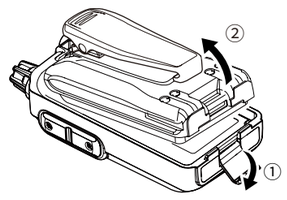
To insert:
1. Insert the battery pack in the direction of the arrow (❶), then close.
2. Hook the latch until it makes a 'click' sound (❷).



To remove:

⚠ **WARNING!** The latch is tightly locked, so use caution when releasing it. **DO NOT** use your fingernail. Use the edge of a coin or screwdriver tip to carefully release it.

- Unhook the latch (①), and then lift up the battery pack in the direction of the arrow (②).

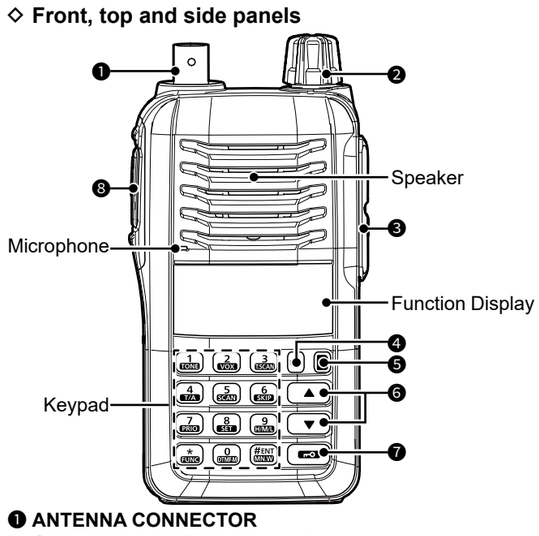


CAUTION: NEVER remove or insert the battery pack when the transceiver is wet or soiled. This may result in water or dust getting into the transceiver or the battery pack, and may result in them being damaged.

NOTE: Keep battery terminals clean. It's a good idea to occasionally clean them.

■ Panel description

◇ Front, top and side panels



❶ ANTENNA CONNECTOR
Connect the supplied or optional antenna here.

❷ CONTROL DIAL [VOL]
- Rotate to adjust the volume level.
- While in the Set mode or Initial Set mode, rotate to select a desired option or value.

❸ SPEAKER-MICROPHONE JACK [SP MIC]
Connects an optional speaker-microphone or programming cable.

CAUTION:
- **DO NOT** use the transceiver without the battery pack or case, antenna, and jack cover or optional equipment are attached. The transceiver meets IP54 requirements for dust protection and splash resistance only when the battery pack or case, antenna, and jack cover or optional HM-168LWP, HM-222HLWP, HS-94LWP, or HS-95LWP are attached.
- **BE SURE** to turn OFF the power before connecting or disconnecting optional equipment to or from the [SP MIC] jack.

❹ MONITOR KEY [MONI]
- Hold down to temporarily open the squelch to monitor the operating channel.
- While holding down this key, push [▲] or [▼] to adjust the squelch level.
- Push to enter or send the DTMF code 'A.'

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

❻ UP/DOWN KEYS [▲]/[▼]
- Push to change the operating channel.
- While scanning, push to change the scanning direction.
- While holding down [MONI], push to adjust the squelch level.
- While in the Set mode, or Initial Set mode, push to select a setting item.
- In the DTMF Memory mode, push to select a DTMF memory channel.
- [▲]: Push to enter or send the DTMF code 'B.'
- [▼]: Push to enter or send the DTMF code 'C.'

❼ LOCK KEY [🔒]
- After pushing [FUNC], hold down for 1 second to turn the Key Lock function ON or OFF.
- Push to enter or send the DTMF code 'D.'
  ⓘ "🔒" is displayed while the Key Lock function is ON.
  ⓘ [⏻], [VOL], [MONI], [PTT] and [FUNC] + [🔒] are still operable while the Key Lock function is ON.

❽ PTT SWITCH [PTT]
Hold down to transmit, release to receive.

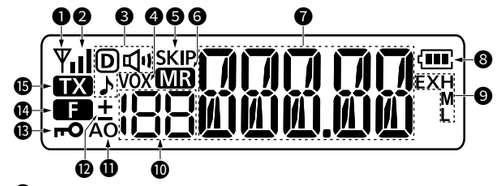
◇ Keypad

- Push to enter an operating channel number.
- Push to enter or send a DTMF code.
- To activate the second function of a key, first push [FUNC], and then push the key.

Key	Numeric input/ DTMF code	Second function
1 TONE	1	Selects the Tone function.
2 VOX	2	Turns the VOX function ON or OFF*1.
3 T-SCAN	3	Starts a Tone scan.
4 T/A	4	Turn the Talk Around function ON or OFF*2.
5 SCAN	5	Starts a scan.
6 SKIP	6	Sets or cancels the skip setting.
7 PRIO	7	Hold down 1 second to set the selected channel as a Priority channel. Starts a Priority Watch.
8 SET	8	Enters the Set mode.
9 H/M/L	9	Sets the output power to Extra High*3, High, Mid, or Low.
0 DTMF M	0	Enters the DTMF memory mode.
* FUNC	* (Indication: E)	–
# ENT M/W/V	# (Indication: F)	Hold down for 1 second to enter the channel name programming mode.

*1 Only when an optional headset and plug adapter are connected.
*2 Only when the transmit frequency and the receive frequency are different.
*3 When the "Extra High Power" is set to OFF in the Initial Set mode, Extra High (EXH) is not displayed.
ⓘ Push [FUNC] to access the second function of other keys.
ⓘ After entering a channel number (0 ~ 9), push [# ENT] to save it.
ⓘ Push [# ENT] to save and exit the Set mode or Initial Set mode.

◇ Function Display

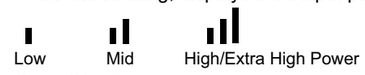


❶ BUSY ICON
- Displayed when a signal is being received, or the squelch is open.
- Blinks while the Monitor function is ON.

❷ SIGNAL ICONS
- Displays the strength of the received signal.

Weak ⇦ RX Signal level ⇨ Strong

- While transmitting, displays the output power level.



Low Mid High/Extra High Power

❸ TONE ICONS
Displayed when the Tone function is ON, and indicates which Tone function is in use.

Icon	Function
♪	Repeater tone encoder
🔇 and 🔊	CTCSS Pocket Beep function
🔇	CTCSS squelch function*
Ⓓ and ♪	DTCS encoder (Only TX)
Ⓓ and 🔊	DTCS Pocket Beep function
Ⓓ	DTCS squelch function*

* When the CTCSS or DTCS squelch function is ON, the tone encoder is activated while transmitting.

❹ VOX ICON
Displayed when the VOX function is ON.

❺ SKIP ICON
Displayed when the selected memory channel is set as a skip channel.

❻ MEMORY ICON
Blinks while scanning.

❼ ALPHANUMERIC DISPLAY
- Displays the operating channel, channel name, Set mode's contents, and a variety of other information.
  ⓘ The decimal point blinks during the scan.

❽ BATTERY ICONS
Displays the battery status.

Indication				
Battery status	Full	Mid	Charging required	Battery exhausted

❾ POWER ICONS
- "EXH*" is displayed when Extra High power is selected.
- "H" is displayed when High power is selected.
- "M" is displayed when Mid power is selected.
- "L" is displayed when Low power is selected.

* When the "Extra High Power" is set to OFF in the Initial Set mode, "EXH" is not displayed.

❿ DTMF MEMORY MODE DISPLAY
Displays the selected DTMF memory channel number.

⓫ AUTO POWER OFF ICON
Displayed when the Auto Power-OFF function is ON.

⓬ TALK AROUND ICON
Displayed when the Talk Around function is ON.

⓭ KEY LOCK ICON
Displayed when the Key Lock function is ON.

⓮ FUNCTION ICON
Displayed when the second function is accessed.

⓯ TRANSMIT ICON
Displayed while transmitting.

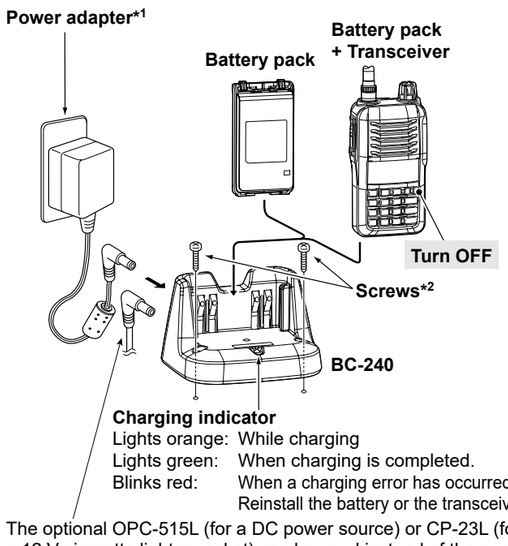
■ Battery charge

◇ Rapid charge with the BC-240

You can rapidly charge a Li-ion battery pack with the BC-240.

Charging time* for the BP-298: Approximately 3 hours
* When the Extend Battery Life function is turned OFF.

Additionally needed item (purchase separately):
A power adapter (not supplied with some transceiver versions) or the OPC-515L or CP-23L DC power cable.



The optional OPC-515L (for a DC power source) or CP-23L (for a 12 V cigarette lighter socket) can be used instead of the power adapter.

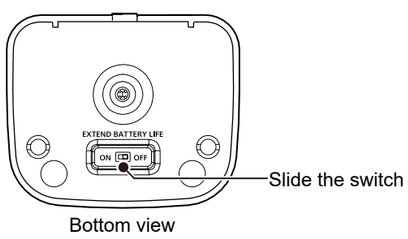
CAUTION: When using the OPC-515L DC POWER CABLE, **NEVER** connect the OPC-515L to a power source using reverse polarity. This will ruin the battery charger.
White line: ⊕, Black line: ⊖

*1 A different type, or no power adapter is supplied, depending on the transceiver version.
*2 Self tapping screw: M3.5 × at least 30 mm
Purchase separately. Using screws are recommended to secure the charger.

◇ About the supplied battery charger

Turn the Extend Battery Life function ON or OFF. The battery charger has a function switch on the bottom panel.
(Default: OFF)

- OFF: The battery is fully charged. The operating time of the transceiver is maximum.
- ON: The battery is not fully charged to not shorten the battery life cycle.
  ⓘ The battery life cycle is extended. But the operating time of the transceiver becomes shorter.



Bottom view

■ Basic operation

◇ Turning the power ON/OFF

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

◇ Setting an operating channel

Using [▲] or [▼]

- Push [▲] or [▼] to select a channel.

Using the keypad

- To set channel between 100 and 200, simply enter the channel number.
- To set a channel between 10 and 99, first enter a “0” and then enter the channel number.
- To set a channel between 1 and 9, first enter “00” and then enter the channel number.
  • Entering the channel number, and then pushing [#ENT], also sets the channel.

NOTE: When changing the operating channel, the original contents are overwrite by the current ones. To keep the original contents*, turn OFF the Memory CH Overwrite function.
* Including the Output power, Tone function, Subaudible tone frequency, Tone squelch frequency, DTCS code, DTCS polarity, and Mode.

◇ Receiving

1. Rotate [VOL]* to adjust the desired audio level.
   • The display shows the audio level while adjusting.
2. Adjust the squelch level, as described below.
   • The display shows the squelch level while adjusting.
3. Set the operating channel.
4. When you receive a signal, the squelch opens and audio can be heard.
   • The signal icon shows the relative signal strength of the received signal.

◇ Transmitting

CAUTION: DO NOT transmit without an antenna.

NOTE: To prevent interference, listen on the channel before transmitting by opening the squelch. To open the squelch, hold down [MONI].

1. Set the operating channel.
   • 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 signal icon shows the output power level.
3. Speak into the microphone at your normal voice level.
   ⓘ **DO NOT** hold the transceiver too close to your mouth, or speak too loudly. This may distort the signal.
4. Release [PTT] to receive.

NOTE: When the TX permission is set to OFF, you cannot transmit. (Set in the CS-G86 PROGRAMMING SOFTWARE)

⚠ **WARNING!** When using the BP-263 BATTERY CASE, frequent or continuous transmissions can cause the batteries to overheat, and may cause a burn. Be careful of long transmissions when the Time-out Timer is turned OFF, or set to long time period.
ⓘ We recommend using the Mid or Low power setting.

◇ Adjusting the audio level

- Rotate [VOL]* to adjust the audio level.
  • The display shows the audio level while adjusting.
  ⓘ If the squelch is closed, hold down [MONI] while adjusting the audio level.

◇ Adjusting the squelch level

- While holding down [MONI], push [▲] or [▼]* several times to adjust the squelch level.
  • “SqL 1” is loose squelch (for weak signals) and “SqL10” is tight squelch (for strong signals).
  “SqL 0” is open squelch.

◇ 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 Mute functions such as the Tone squelch are in use.

- Hold down [MONI] to open the squelch.
  ⓘ Release [MONI] to cancel the function.

◇ Selecting output power

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

- Push [FUNC], and then push [H/M/L] several times to select the output power.
  • “EXH*,” “H,” “M,” or “L” are displayed, depending on the selected output power.
  * When the “Extra High Power” is set to OFF in the Initial Set mode, “EXH” is not displayed.

* Use [VOL] or [▲]/[▼], depending on the setting of the “Dial assignment” in the Initial Set mode.

■ Scan operation

◇ Memory Scan

Repeatedly scans memory channels, except those set as skip channels, described in the next scan topic.

1. Push [FUNC], and then push [SCAN] to start the scan.
   • “MR” blinks.
   ⓘ To change the scan direction, push [▲] or [▼].
2. To cancel the scan, push any key except [⏻], [▲]/[▼], [MONI] or [FUNC].

◇ Setting Skip channels

The Memory Skip function speeds up scanning by not scanning those memory channels set as Skip channels. Set the Skip channels as follows.

1. Push [▲] or [▼] to select the memory channel to be skipped.
2. Push [FUNC], and then push [SKIP] to set the channel as a Skip channel.
   • “SKIP” is displayed.

◇ Scan Resume setting

Various pause and timer options can be selected with the Scan Resume function. The selected resume option is also used for Priority Watch.

◇ Priority Watch

The priority watch checks for signals on the selected channel (Priority channel) every 5 seconds. A priority channel must be set first.

Setting the Priority channel

1. Push [▲] or [▼] to select the channel.
2. Push [FUNC], and then hold down [PRIO] for 1 second to set the selected channel as a Priority channel.
   • 2 beeps sound and “PRIO” is displayed for 1 second.

Starting Priority Watch

1. Push [FUNC], and then [PRIO] to start the Watch.
   • The decimal point “.”, on the alphanumeric display blinks.
   • When a signal is received on the channel, the Watch pauses, and resumes depending on the selected scan resume option.
2. To cancel the watch, push any key except [⏻], [▲]/[▼], [MONI], [FUNC], or [PTT].

■ Specifications

ⓘ All stated specifications are subject to change without notice or obligation.
ⓘ Measurements made without an antenna.

General		
Frequency coverage * Extra High power guaranteed range	RX: 136 ~ 174 MHz TX: 136 ~ 174 MHz 144 ~ 160 MHz*	
Operating temperature range	–20°C (–4ºF) ~ +60°C (+140ºF)	
Frequency stability	±2.5 ppm (–20°C ~ +60°C, –4ºF ~ +140ºF) at +25°C (+77ºF)	
Antenna Impedance	50 Ω	
Power supply	7.5 V DC nominal	
Number of Memory channels	200 channels	
Dimensions (projections not included)	58.6 (W) × 112 (H) × 30.5 (D) mm 2.3 (W) × 4.4 (H) × 1.2 (D) in (with BP-298/BP-299)	
	58.6 (W) × 112 (H) × 26 (D) mm 2.3 (W) × 4.4 (H) × 1 (D) in (with BP-264)	
Weight (approximate)	300 g, 10.6 oz (with BP-298/BP-299 and FA-B57V)	
	360 g, 12.7 oz (with BP-264 and FA-B57V)	

Transmitter		
Transmitting mode	F2D, F3E (FM, FM-N)	
Modulation system	Frequency shift keying modulation	
Maximum frequency deviation	FM (wide): ±5.0 kHz	
	FM (narrow): ±2.5 kHz	
Microphone Impedance	2.2 kΩ	
Spurious emissions	Less than –60 dB, –80 dB (typical)	
Output power (at 7.5 V DC)	Extra High: 7.0 W High: 5.5 W, Mid: 2.5 W, Low: 0.5 W	
Current drain (at 7.5 V DC) typical	Extra High: 1.6 A High: 1.4 A, Mid: 1.0 A, Low: 0.5 A	

Receiver		
Receive system	Direct Conversion	
Sensitivity	–124 dBm (at 12 dB SINAD) typical	
Squelch sensitivity	–126 dBm (threshold) typical	
Selectivity		
FM (wide)	75 dB typical	
FM (narrow)	70 dB typical	
Intermodulation	65 dB typical	
AF output impedance	8 Ω	

For the transceiver without a “U” mark on the serial number label		
Audio output power (8 Ω load)	Internal speaker: 1.5 W typical	
	External speaker: 0.55 W typical	
Current drain (at 7.5 V DC)	Internal speaker: 450 mA typical	
	External speaker: 200 mA typical	
For the transceiver with a “U” mark on the serial number label		
Audio output power (8 Ω load)	Internal speaker: 1.5 W typical	
	External speaker: 0.45 W typical 1.5 W typical*	
Current drain (at 7.5 V DC)	Internal speaker: 450 mA typical	
	External speaker: 190 mA typical 450 mA typical*	

* Only when the optional HM-222HLWP is connected.

■ Set mode

◇ Using the Set mode

1. Push [FUNC], and then push [SET] to enter the Set mode.
2. Push [▲] or [▼] to select a desired item.
3. Rotate [VOL] to select an option or value.
4. Push [# ENT] to save and exit the Set mode.

◇ Set mode items

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

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

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

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

DTCS polarity “dtPOLR”
Set the Transmit and Receive DTCS polarity.

Scan resume setting “SCn.rS”
Select the scan pause and resume setting.

Function key timer “FUNt”
Set the time between when the Function mode is entered, and how long it remains activated after you push the keypad key to activate the second function.

LCD backlight “LigHt”
Select the LCD Backlight function.

VOX gain “VOXG”
Set the VOX gain.
To turn OFF the VOX function, select “VOX.OF.”

MIC gain “MicG”
Set the microphone sensitivity.

VOX delay “VdLY”
Set the VOX Delay.

VOX time-out timer “VtoU”
Set the VOX time-out timer.
To turn OFF the function, select “Vto.OF.”

DTMF TX key “dmtK”
Select the method to transmit a DTMF code sequence.

Mode “Wn. W”
Set the Operating mode to FM or FM-N.

◇ Using the Initial Set mode

The Initial Set mode is accessed at power 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 [▲] and [▼], hold down [⏻] for 1 second to enter the Initial Set mode.
2. Push [▲] or [▼] to select a desired item.
3. Rotate [VOL] to select an option or value.
4. Push [# ENT] to save and exit the Initial Set mode.

◇ Initial Set mode items

Extra High Power “EXWnF”
Select whether or not to display and select EXH (Extra High) as the highest power of the transceiver.

Key-touch beep “bEP. 2”
Turn the key-touch beep ON (Set the beep level to between 1 and 3) or OFF.

Time-out timer “tOt. 5”
Inhibits continuous transmissions longer than the selected time period.

Auto power OFF “POFnF”
Automatically turns OFF the transceiver’s power.

Lockout “PLOnF”
Turn the Lockout function ON or OFF.

Squelch delay “SqL. 5”
Set the squelch delay to Short or Long.

DTMF speed “dtd. 1”
Set the DTMF sending rate.

Dial assignment “tUnEV0”
Select whether or not to use [VOL] as the channel selector instead of [▲] and [▼].

Simple Mode “SmPnF”
Inhibits the access to some functions.

LCD contrast “LCdAt”
Select the LCD contrast.

Power save “P-SAt”
Select the ratio of the power save time to the standby time.

Select speed “S-SAt”
Select whether or not to accelerate the step speed when rotating [VOL] rapidly.

Microphone simple mode “mS. n1”
Select the Microphone mode.

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

Battery protection function “bAtPn”
Select the protection option according to your battery type.

Auto low power “ALPnF”
Turn the Auto Low Power function ON or OFF.

CTCSS burst “SQbnF”
Turn the CTCSS Burst function ON or OFF.

Memory CH Overwrite “mUWn”
Select whether or not to overwrite the original memory contents when charging the operating channel content.

■ Options

◇ Battery case/Battery packs

- **BP-263** BATTERY CASE
- **BP-264** Ni-MH BATTERY PACK
- **BP-298/BP-299** Li-ion BATTERY PACK

Battery pack	Voltage	Capacity	Battery life*1	
BP-263	Battery case for AA (LR6) × 6 alkaline cells		—*2	
BP-264	7.2 V	1400 mAh (min.) 1420 mAh (typ.)	EXH	12.5 hours
			H	13 hours
BP-298	7.2 V	2100 mAh (min.) 2250 mAh (typ.)	EXH	19 hours
			H	20.5 hours
BP-299	7.2 V	3050 mAh (min.) 3150 mAh (typ.)	EXH	27 hours
			H	29 hours

*1 When the Power Save function is set to “P–S.16”, and the operating time is calculated under the following ratio:
TX : RX : standby = 5 : 5 : 90
(3 seconds : 3 seconds : 54 seconds)
*2 The average operating life depends on the alkaline cells that are used.

Even when the transceiver power is OFF, a small amount of current still flows in the transceiver. Remove the battery pack or case when it will not be used for a long time. Otherwise, the battery pack or the batteries in the case will become exhausted.

◇ Chargers

- **BC-191** DESKTOP CHARGER
  To rapidly charge the BP-264 Ni-MH BATTERY PACK.
- **BC-192** DESKTOP CHARGER
  To regularly charge the BP-264 Ni-MH BATTERY PACK.
- **BC-240** DESKTOP CHARGER
  To rapidly charge the BP-298/299 Li-ion BATTERY PACK.
- **BC-197** MULTI CHARGER
  To rapidly charge the BP-264 Ni-MH BATTERY PACKS.
  The AD-120 charger adapters are installed.
- **BC-214N** MULTI CHARGER
  To rapidly charge the BP-298/299 Li-ion BATTERY PACKS.
  The AD-139 charger adapters are installed.

ⓘ A power adapter may be supplied with the charger, depending on the charger version.

◇ DC cables

- **CP-23L** CIGALETTE LIGHTER CABLE
  Use when charging the battery pack from a 12 V cigarette lighter socket.
  (For the BC-191, BC-192, and BC-240)
- **OPC-515L/OPC-656** DC POWER CABLE
  Use when charging battery packs using a 13.8 V DC power source instead of the power adapter.
  OPC-515L: For the BC-191, BC-192, and BC-240
  OPC-656: For the BC-197 and BC-214N

◇ Antennas

- **FA-B45V/FA-B57V** VHF ANTENNA
  FA-B45V: 144 ~ 148 MHz
  FA-B57V: 160 MHz

◇ Others

- **MB-124** BELT CLIP
- **MB-130** CHAGER BRACKET
  Mounts the BC-191, BC-192 and BC-240 battery chargers on a variety of places in a vehicle.
- **HM-158LA/HM-159LA/ HM-168LWP/HM-222HLWP*** SPEAKER MICROPHONE
  Combination speaker microphone that provides convenient operation while the transceiver is hanging on your belt.
  ⓘ Adjust the microphone gain before use.
  * High audio output is only usable with transceivers that support the function. (With a “U” mark on the serial number label)
- **HM-153LA/HM-166LA** EARPHONE MICROPHONE
  Ideal for hands-free operation. Clip the HM-153LA or HM-166LA (with integrated PTT switch) to your lapel or breast pocket.
  ⓘ Adjust the microphone gain before use.
- **HS-94/HS-95/HS-97** HEADSET
  +VS-4LA PTT SWITCH CABLE/**OPC-2004LA** ADAPTER CABLE
  HS-94: Ear-hook type
  HS-95: Neck-arm type
  HS-97: Throat microphone
  VS-4LA: To connect to headsets
  OPC-2004LA: To connect to headsets for VOX operation.
  ⓘ Adjust both the microphone and VOX gain before use.
- **HS-94LWP/HS-95LWP** HEADSET
  HS-94LWP: Ear-hook type
  HS-95LWP: Neck-arm type
  ⓘ Adjust both the microphone and VOX gain before use.
- **CS-G86** PROGRAMMING SOFTWARE
  +OPC-478UC/OPC-478UC-1 PROGRAMMING CABLE
  Provides quick and easy programming of such settings as memory channels and Set modes contents.
- **OPC-474** PROGRAMMING CABLE
  For transceiver-to-transceiver programming.

Some options may not be available in some countries. Ask your dealer for details.

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Mar. 2022

A7531D-1EX-2
Printed in Japan