ICOM

INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER

IC-M1

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

Icom Inc.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains important operating instructions for the **IC-M1**.

CAUTIONS

⚠**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. The transceiver will perform best if the microphone is 2 to 4 in (5 to 10 cm) away from the lips and the transceiver is vertical.

MAKE SURE the flexible antenna and battery pack are securely attached to the transceiver and that the antenna and battery pack are dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.

NEVER allow children to touch the transceiver.

NEVER charge battery packs except in the methods described in this manual.

KEEP the transceiver at least 3.3 ft (1 m) away from the ship's navigation compass.

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

AVOID the use of chemical agents such as benzine or alcohol when cleaning, as they may damage the transceiver surfaces.

BE CAREFUL! The transceiver rear panel will become hot when operating continuously for long periods.

After exposure to saltwater, clean the transceiver thoroughly with fresh water to avoid corrosion.

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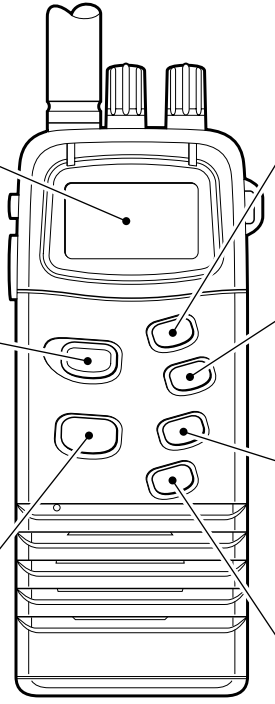
1 PANEL DESCRIPTION

■ Front panel



FUNCTION DISPLAY (p. 3)

CHANNEL 16 SWITCH [16•9]
- Selects channel 16 when pushed. (p. 5)
- Selects the call channel when pushed for 1 sec. (p. 5)
- Enters call channel write mode when the call channel is selected and this switch is pushed for 3 sec. (p. 9)

CHANNEL/WEATHER CHANNEL SWITCH [CH/WX•U/I/C]
- Selects and toggles the regular channels and weather channel when pushed momentarily. (pgs. 5, 6)
- Selects one of 3 regular channels in sequence when pushed for 1 sec. (p. 5)
  - International, U.S.A. and Canadian channels are available for regular channels.

DUALWATCH/TRI-WATCH SWITCH [DW•TRI] (p. 10)
- Starts dualwatch when pushed momentarily.
- Starts tri-watch when pushed for 1 sec.
- Stops dualwatch/tri-watch when either is activated.

SCAN SWITCH [SCN•SCRM]
- Starts and stops normal or priority scan when tag channels are programmed. (p. 12)
- Activates an optional voice scrambler function when pushed for 1 sec. (p. 8)

TAG SWITCH [TAG•ALL CLR]
- Sets the displayed channel as a tag (scanned) channel when pushed. (p. 12)
- Clears all tag channels in the selected regular channel when pushed for 3 sec. (p. 12)

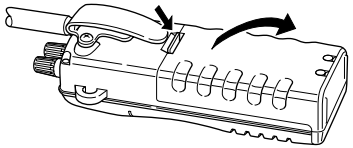
TRANSMIT POWER/LOCK SWITCH [H/L•LOCK]
- Toggles high power and low power (1 W) when pushed. (p. 7)
- While pushing [SQL], push this key to select extra low power (150 mW). (p. 7)
- Toggles the lock function ON and OFF when pushed for 1 sec. (p. 6)

■ Top and side panels

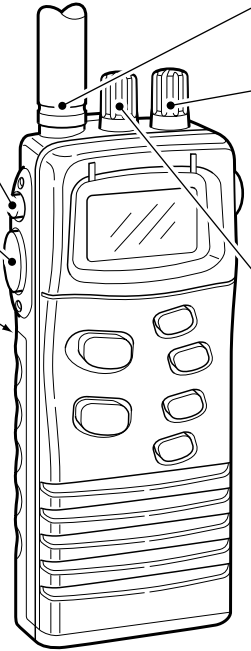
SQUELCH/MONITOR SWITCH [SQL]
- Opens the squelch and monitors the operating channel while being pushed.
- Sets the squelch level with the channel selector. (p. 6)

PTT SWITCH [PTT]
Push and hold to transmit; release to receive. (p. 7)

BATTERY PACK RELEASE BUTTON
To remove the battery pack:
Push and hold the battery release button downwards, then open the battery pack as shown below.



To attach the battery pack:
Mate the notched ends of the transceiver and the battery pack, and click the battery pack into place.



ANTENNA CONNECTOR (p. 17)
Connects the supplied antenna.

VOLUME CONTROL [OFF/VOL]
Turns power ON and adjusts the audio level. (p. 7)

CHANNEL SELECTOR [CH]
- Sets an operating channel during normal operation. (pgs. 5, 6)
- Sets a squelch threshold level while pushing [SQL]. (p. 6)
- Checks tag channels or changes scanning direction during scan. (p. 12)
- Selects the set mode contents in SET mode. (pgs. 13, 14)
- Selects the optional scrambler code when [SCN•SCRM] is pushed and held. (p. 8)

■ Function display

LOW POWER INDICATOR (p. 7)
- Appears when low power is selected.
- Blinks when extra low power is selected.

CALL CHANNEL INDICATOR (p. 5)
Appears when a call channel is selected.

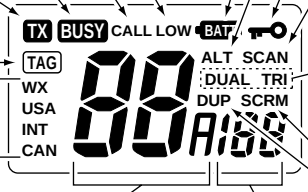
BUSY INDICATOR (p. 7)
Appears when receiving a signal or when the squelch opens.

TRANSMIT INDICATOR (p. 7)
Appears while transmitting.

TAG CHANNEL INDICATOR (p. 12)
Appears when a tag channel is selected.

CHANNEL INDICATORS (pgs. 5, 6)
Indicate whether a U.S.A., international, Canadian or weather channel is selected.

CHANNEL NUMBER READOUT
- Indicates the selected operating channel number. (pgs. 5, 6)
- In SET mode, indicates the selected condition. (pgs. 13, 14)



LOW BATTERY INDICATOR (p. 15)
Blinks when the battery voltage drops to approx. 6 V or below. The attached battery pack requires charging in this case.

WEATHER ALERT INDICATOR (p. 14)
Appears while the weather alert function is activated; blinks when alert tone is received.

LOCK INDICATOR (p. 6)
Appears while the lock function is activated.

SCAN INDICATOR (pgs. 12, 14)
Blinks while scanning; appears when the auto scan function is in standby.

DUALWATCH/TRI-WATCH INDICATORS
"DUAL" appears during dualwatch; "TRI" appears during tri-watch. (p. 10)

SCRAMBLER INDICATOR (p. 8)
Appears when the optional voice scrambler is activated.

DUPLEX INDICATOR
Appears when a duplex channel is selected.

SCRAMBLE CODE READOUT (p. 8)
Shows the scrambler code while setting.

■ Operating rules

• PRIORITIES

① Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.

② You must monitor channel 16 when you are not operating on another channel.

③ False or fraudulent distress signals are prohibited and punishable by law.

• PRIVACY

① Information overheard but not intended for you cannot lawfully be used in any way.

② Indecent or profane language is prohibited.

• RADIO LICENSES

(1) SHIP STATION LICENSE

You must have a current radio station license before using the transceiver. It is unlawful to operate a ship station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship-Radiotelephone license application. This government-issued license states the call sign which is your craft's identification for radio purposes.

(2) OPERATOR'S LICENSE

A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes.

The Restricted Radiotelephone Operator Permit must be posted or kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, ends the call and makes the necessary log entries.

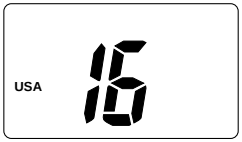
Keep a copy of the current government rules and regulations handy.

■ Channel selection

◇ Channel 16

Channel 16 is the distress channel. It is used for establishing initial contact with another station and for emergency communications. Channel 16 is monitored during dualwatch/tri-watch. While standing by you are required to monitor channel 16.

Push 



◇ Channel 9 (Call channels)

Channel 9 is the pleasure call channel. Each regular channel group has separate call channels. In addition, each call channel is monitored during tri-watch. The call channels can be programmed (p. 9) and are used to store your most often-used channels in each channel group for quick recall.

- Push [16•9] for 1 sec. to select the call channel of the selected channel group.
  - "CALL" and call channel number appear.
  - Each channel group may have an independent call channel after changing a call channel.

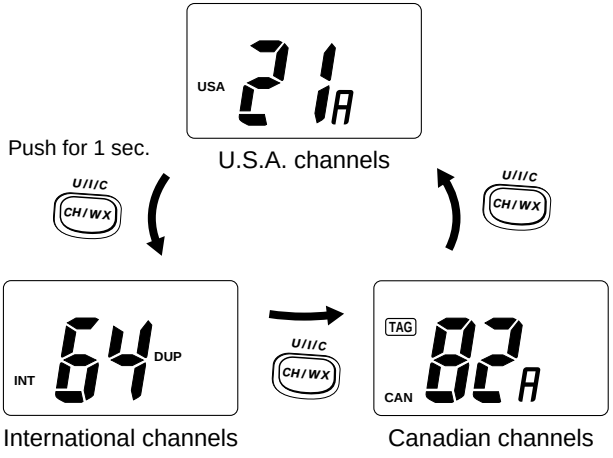
◇ U.S.A., Canadian and international channels

There are 61 U.S.A., 57 Canadian and 57 international channels. These channel groups may be specified for the operating area.

① Push [CH/WX] to select a regular channel.
  - If a weather channel appears, push [CH/WX] again.

② Rotate the channel selector to select a channel.
  - "DUP" appears for duplex channels.

③ To change the channel group, push [CH/WX•U/I/C] for 1 sec.
  - U.S.A., Canadian and international channels can be selected in sequence.



◇ Weather channels

There are 10 weather channels. Used for monitoring weather channels from the NOAA (National Oceanographic and Atmospheric Administration) broadcasts.

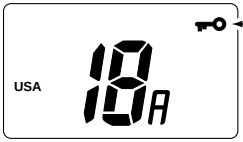
The IC-M1 can detect a weather alert tone on the selected weather channel while receiving the channel, during standby on a regular channel or while scanning. See the “SET mode items” on p. 14.

• Push [CH/WX] once or twice to select weather channels.

■ Lock function

This function electronically locks all keys and switches to prevent accidental frequency changes and function access.

• Push [H/L•LOCK] for 1 sec. to turn the lock function ON and OFF.
- Only [PTT], [H/L] and [SQL] are functional.



Appears when the lock function is in use.

■ Adjusting the squelch level

The IC-M1 has a squelch even though there is no control knob for it. In order to receive signals properly, as well as for scan to function, the squelch must be adjusted to a suitable level.

Level 4: Max. squelch level

① While pushing [SQL], rotate the channel selector.
- The first click of the channel selector indicates the current squelch level.
- There are 5 squelch levels to choose from: 0 is completely open; 4 is the maximum squelch level.

② Release [SQL] when the desired squelch level is indicated in the function display.

NOTE: The squelch level 1 is designed for receiving weak signals so that the squelch delays to close. If you want to cut the squelch noise, set the level to 2 or more.

■ Receiving and transmitting

CAUTION: Transmitting without an antenna may damage the transceiver.

① Rotate [OFF/VOL] clockwise to turn power ON, then set to the 10 o'clock position.
- Use the squelch function to mute any audio noise if necessary. Refer to the previous page for details.

② Rotate the channel selector to select the desired channel.
- When receiving a signal, BUSY appears and audio is emitted from the speaker.
- Further adjustment of [OFF/VOL] may be necessary at this point.
- Use the optional voice scrambler function for privacy. (p. 8)

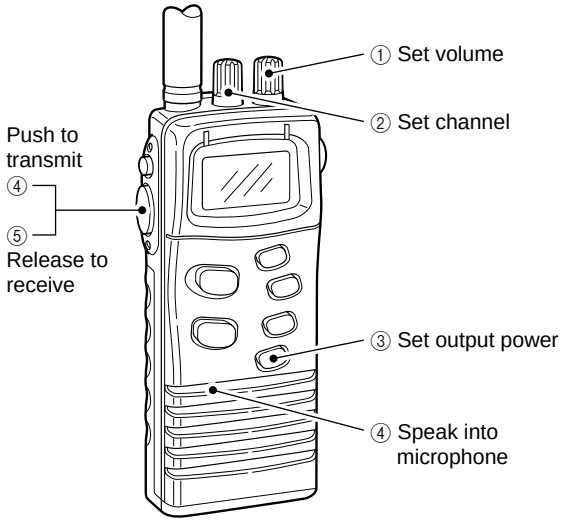
③ Push [H/L] to select the output power if necessary.
- "LOW" appears when low power is selected.
- Choose low power to conserve battery power, choose high power for longer distance communications.
- Some channels are for low power only.
- An extra low power is available for short distance communications. Push [H/L] while pushing [SQL] in such case.

④ Push and hold [PTT] to transmit, then speak into the microphone.
- TX appears.
- Channel 70 cannot be used for transmission (for GMDSS use).

⑤ Release [PTT] to receive.

IMPORTANT: To maximize the readability of your transmitted signal, pause a few sec. after pushing [PTT], hold the microphone 4 to 6 inches (10 to 15 cm) from your mouth and speak at a normal voice level.

NOTE: The transceiver has power save function to conserve the battery power and cannot be turned OFF. The power save function activates automatically when no signal is received for 5 sec.



■ Optional voice scrambler operation

◇ Activating the scrambler

The optional voice scrambler provides private communications. In order to receive or send scrambled transmissions you must first activate the scrambler function. To activate the function, an optional UT-98 is necessary. Ask your dealer for details.

① Select an operating channel except channel 16 or weather channels.
② Push [SCN•SCRM] for 1 sec.
- "SCRM" appears.

③ To turn the scrambler function OFF, repeat step ②.
- "SCRM" disappears.

◇ Programming scramble codes

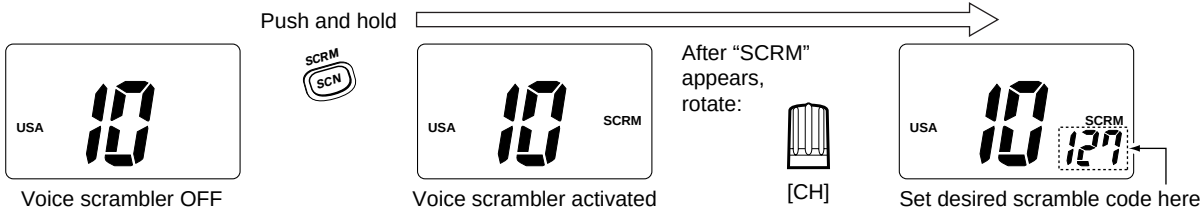
There are 128 codes (00 to 127) available for programming. In order to understand one another, all transceivers in your group must have the same scramble code.

① Select an operating channel except channel 16 or weather channels.
② Make sure the scramble function is OFF, then push and hold [SCN•SCRM] until step ④.
- "SCRM" appears.

③ While continuing to push [SCN•SCRM], rotate the channel selector to select the desired scramble code.
- The first click when rotating the channel selector shows the currently selected code.

④ Release [SCN•SCRM].
- The scramble code disappears from the function display but remains in effect while the scramble function is activated.

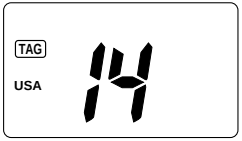
[Example]: Programming scramble code 127.



■ Call channel programming

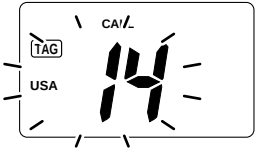
The call channel key is used to select channel 9, however, you can program your most often-used channels in each channel group for quick recall.

① Push [CH/WX•U/I/C] for 1 sec. several times to select the desired channel group (USA, INT, CAN) to be programmed.

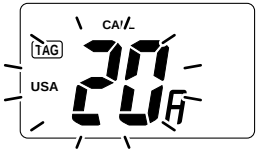


② Push [16•9] for 1 sec. to select the call channel of the selected channel group.
- "CALL" and call channel number appear.

③ Push [16•9] again for 3 sec. (until long beep changes to 2 short beeps) to enter call channel programming condition.
- Call channel number and channel group to be programmed flashes.



④ Rotate the channel selector to select the desired channel.



⑤ Push [16•9] to program the displayed channel as the call channel.
- The call channel number and channel group stop flashing.

■ Automatic backlighting

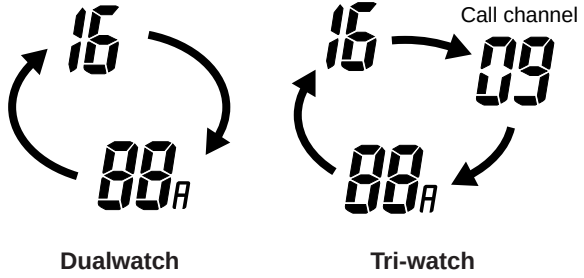
This function is convenient for nighttime operation. The automatic backlighting can be activated in SET mode. (p. 13)

• Push any key except for [PTT] to turn the backlighting ON.
- The backlighting is automatically turned OFF 5 sec. after operation.
- Push [SQL] to turn the backlighting ON without changing the operating condition.

■ Description

Dualwatch monitors channel 16 while you are receiving another channel; tri-watch monitors channel 16 and the call channel while receiving another channel.

DUALWATCH/TRI-WATCH SIMULATION



- If a signal is received on channel 16, dualwatch/tri-watch pauses on channel 16 until the signal disappears.
- If a signal is received on the call channel during tri-watch, tri-watch becomes dualwatch until the signal disappears.
- To transmit on the selected channel during dualwatch/tri-watch, push and hold [PTT].
- If no signal is received, the transceiver enters the power saving condition for 0.5 sec. after checking the operating channel every cycle.

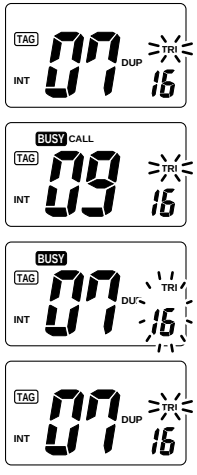
■ Operation

① Select the desired operating channel.
② Push [DW•TRI] momentarily to start dualwatch; push [DW•TRI] for 1 sec. to start tri-watch.
- "DUAL" flashes during dualwatch; "TRI" flashes during tri-watch.
- Beep tone sounds when a signal is received on channel 16.
- Tri-watch becomes dualwatch when receiving a signal on the call channel.

③ To cancel dualwatch/tri-watch, push [DW•TRI] again.

[Example]: Operating tri-watch on INT channel 07.

Push for 1 sec.



Tri-watch starts.

Signal is received on call channel.

Signal received on channel 16 takes priority.

Tri-watch resumes after the signal disappears.

4 SCAN OPERATION

■ Scan types

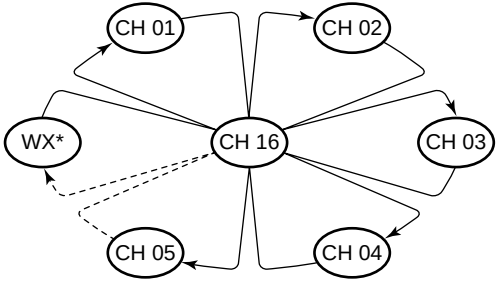
Scanning is an efficient way to locate signals quickly over a wide frequency range. The transceiver has priority scan and normal scan.

In addition, weather alert and automatic scan start function is available for standby convenience. (p. 14)

Set the tag channels (scanned channel) before scanning. Clear the tag channels which inconveniently stop scanning, such as digital communication use.

NOTE: Choose priority or normal scan in SET mode. (p. 14)

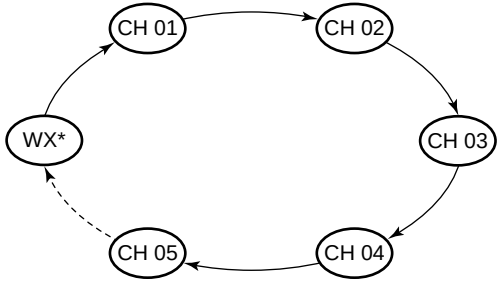
PRIORITY SCAN



*Previously selected weather channel when weather alert function is ON.

Priority scan searches through all tag channels in sequence while monitoring channel 16. When a signal is detected on channel 16, scan pauses until the signal disappears; when a signal is detected on a channel other than channel 16, scan becomes dualwatch until the signal disappears.

NORMAL SCAN



*Previously selected weather channel when weather alert function is ON.

Normal scan, like priority scan, searches through all tag channels in sequence. However, unlike priority scan, channel 16 is not checked unless channel 16 is set as a tag channel.

■ Setting tag channels

For more efficient scanning, add desired channels as tag channels or clear tag channels for unwanted channels. Channels set as non-tag channels will be skipped during scanning. Tag channels can be assigned to each channel group (USA, CAN, INT) independently.

① Select the desired channel group (USA, CAN, INT) by pushing [CH/WX•U/I/C] for 1 sec., if desired.
② Select the desired channel to set as a tag channel.
③ Push [TAG] to set the displayed channel as a tag channel.
- TAG appears in the function display.

④ To cancel the tag channel setting, push [TAG].
- TAG disappears.

•Clearing all tag channels in the selected channel group
- Push [TAG•ALL CLR] for 3 sec. to clear all tag channels in the channel group.

■ Starting a scan

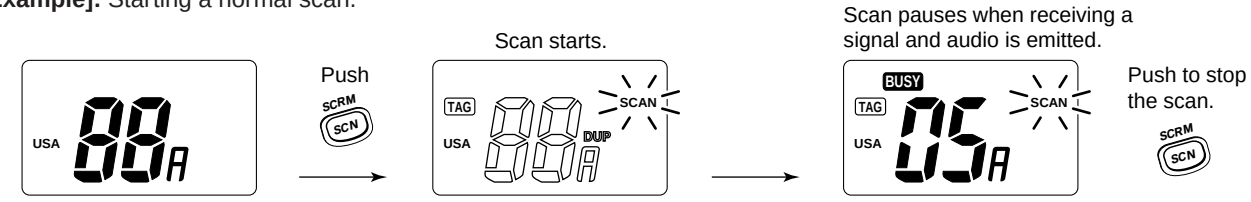
Set scan type, weather alert function, scan resume timer and auto scan function in advance using SET mode. (p. 14)

① Select the desired channel group (USA, CAN, INT) by pushing [CH/WX•U/I/C] for 1 sec., if desired.
- When the weather alert function is in use, select the desired weather channel with [CH/WX] and the channel selector.

② Push [SCN] to start priority or normal scan.
- "SCAN" appears and flashes in the function display.
- "16" appears during priority scan.
- When a signal is detected, scan pauses until the signal disappears or resumes after pausing 5 sec. according to SET mode setting. (Channel 16 is still monitored during priority scan.)
- Rotate the channel selector to check the scanning tag channels, to change the scanning direction or resume the scan manually.

③ To stop the scan, push [SCN].
- "SCAN" disappears.
- Pushing [PTT], [16•9], [CH/WX] or [DW•TRI] also stops the scan.

[Example]: Starting a normal scan.

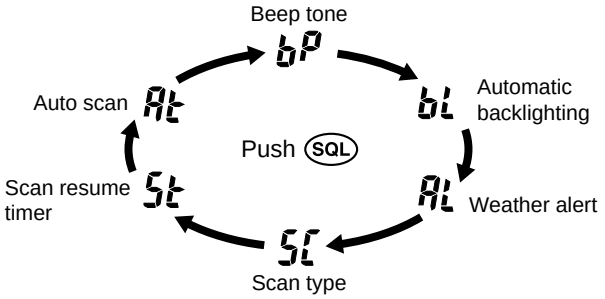


■SET mode programming

SET mode is used to change the conditions of 6 transceiver functions: the beep tone function, the automatic backlighting, weather alert function, normal/priority scan, scan resume timer and auto scan function.

① Turn power OFF.
② While pushing [SQL], turn power ON and continue pushing [SQL] until “bP” appears.
③ After the display appears, release [SQL].
④ Push [SQL] to select the desired item, if necessary.
⑤ Rotate the channel selector to select the desired condition of the item.
⑥ To exit SET mode, push [16].
- Turning power OFF, then ON again also exits SET mode.

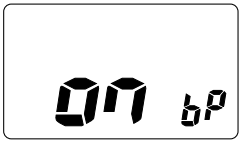
•SET MODE CONSTRUCTION



■SET mode items

◇Beep tone “bP”

You can select silent operation by turning beep tones OFF or you can have confirmation beeps sound at the push of a switch by turning beep tones ON. The beep tone volume is linked with [OFF/VOL].

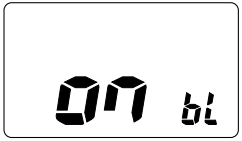


Beep tone ON (default)

◇Automatic backlighting “bL”

This function is convenient for nighttime operation. The automatic backlighting turns the backlighting ON when pushing any key except for [PTT].

- The backlighting is automatically turned OFF 5 sec. after operation.
- Push [SQL] to turn the backlighting ON without changing the operating condition.



Automatic backlighting ON (default)

◇ Weather alert function "AL"

An NOAA broadcast station transmits an weather alert tone before an important weather information. When the weather alert function is turned ON, the transceiver detects the alert, then flashes the "ALT" indicator until the transceiver is operated. The previously selected (used) weather channel is checked in any time during standby or while scanning.

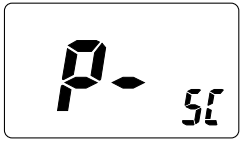
• "ALT" appears when the function is set ON.

Weather alert function OFF (default)

◇ Scan type selection "SC"

The transceiver has 2 scan types: normal scan and priority scan. Normal scan searches all tag channels in the selected channel group. Priority scan searches all tag channels in sequence while monitoring channel 16.

Normal scan (default)



Priority scan

◇ Scan resume timer "St"

The scan resume timer can be selected as a pause (OFF) or timer scan (ON). When OFF is selected, the scan pauses until the signal disappears. When ON is selected, the scan pauses 5 sec. and resumes even if a signal is being received on channels except for channel 16.

Scan timer OFF (default)

◇ Auto scan function "At"

While in standby, this function automatically starts the selected scan (normal or priority scan) 30 sec. after operation.

• "SCAN" appears when the function is turned ON.

NOTE: The transceiver has a power save function but the power save function does not function when the auto scan function is in use.

Auto scan OFF (default)

6 BATTERY CHARGING

■ Battery cautions

NEVER incinerate used battery packs. Internal battery gas may cause an explosion.

NEVER immerse the battery pack in water. If the battery pack becomes wet, be sure to wipe it dry BEFORE attaching it to the transceiver.

NEVER short terminals of the battery pack. Also, current may flow into nearby metal objects so be careful when placing battery packs in handbags, etc.

If your 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 very little), a new battery pack must be purchased.

◇ Recycling information

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Call 1-800-8-BATTERY for battery recycling options in your area or contact your dealer.

■ Battery charging

Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation.

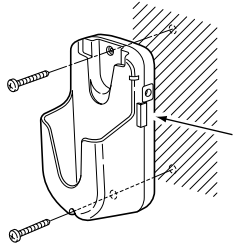
CAUTION: To avoid damage to the transceiver, turn it OFF while charging.

- Recommended temperature range for charging: +50°F to +104°F (+10°C to +40°C)
- Use the supplied charger (AD-58) or optional charger (BC-119 for rapid charging) only. **NEVER** use other manufactures' charger.
- An optional cable OPC-515L (for 13.8 V power source) or CP-17L (for 12 V cigarette lighter socket) can be used instead of the AC adapters of above chargers.

When using AD-58: If the charge indicator lights red, the vehicle battery voltage is low and charging may not be performed. Check the vehicle battery voltage in this case.

When using BC-119: If the charge indicator flashes orange, the vehicle battery voltage is low and charging may not be performed. Check the vehicle battery voltage in this case. If the charge indicator flashes red, there may be a problem with the battery pack (or charger). Re-insert the battery pack or contact your dealer.

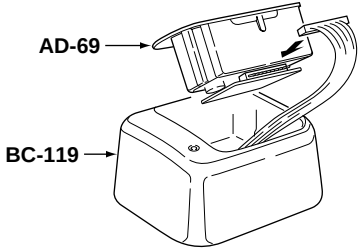
◇ Attaching the AD-58 to a wall



Eyelet:
USE a rubber band to secure the transceiver, if desired.

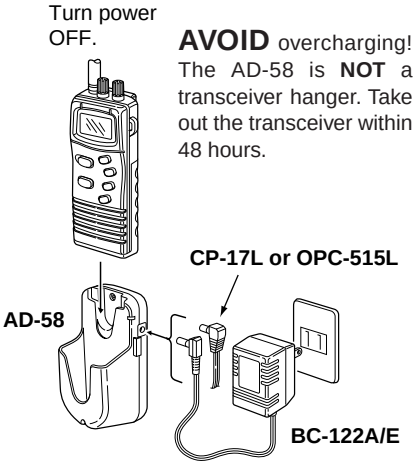
◇ Installing the AD-69 to the BC-119

① Connect the cable as shown below.
② Attach the AD-69 with the 2 supplied screws.



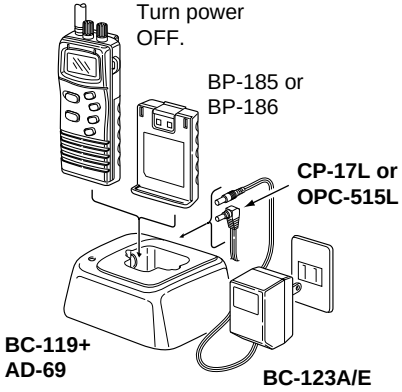
◇ Charging with the AD-58

① Connect the AC adapter (BC-122) or optional cable (CP-17L or OPC-515L) as shown below.
② Insert the transceiver with attached battery pack into the charger.
• The charge indicator lights orange.
③ Charge the battery pack for 15 hours.



◇ Charging with the optional BC-119+AD-69

① Connect the AC adapter (BC-123) or optional cable (CP-17L or OPC-515L) as shown below.
② Insert the transceiver with attached battery pack (or the battery pack only) into the charger.
• The charge indicator lights orange.
③ Charge the battery pack until the charge indicator changes to green.
• Charging time: Approx. 1 to 1.5 hours



7 UNPACKING AND ACCESSORY ATTACHMENT

◇ Unpacking

The following accessories are supplied:

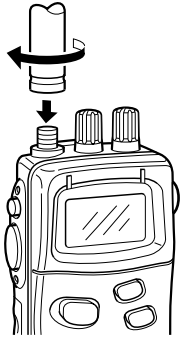
	Qty.
① Flexible antenna (FA-S57V)	1
② Handstrap	1
③ Belt clip	1
④ Screws for the belt clip (M3 × 4)	2
⑤ Battery charger (AD-58)	1
⑥ Screws for the AD-58 (M3.5 × 30)	2
⑦ AC adapter (BC-122A/E)	1
⑧ Battery pack (BP-185)	1

◇ Flexible antenna

CAUTION: Attach the supplied antenna securely for waterproofing.

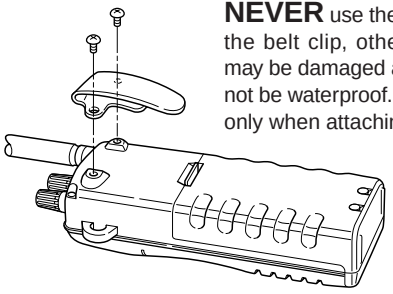
CAUTION: Transmitting without an antenna may damage the transceiver.

Insert the supplied antenna into the antenna connector and screw down the antenna as shown in the diagram at right.



◇ Belt clip

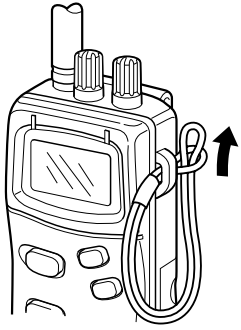
Attach the belt clip with the supplied metal screws. Conveniently attaches to your belt.



NEVER use the supplied screws without the belt clip, otherwise, the screw holes may be damaged and the transceiver might not be waterproof. Use the supplied screws only when attaching the belt clip.

◇ Handstrap

Slide the handstrap through the loop on the side of the transceiver as illustrated at right. Facilitates carrying.



PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
No power comes ON.	• The battery is exhausted. • Bad connection to the battery pack.	• Recharge the battery pack. • Check the connection to the transceiver.	p. 15 p. 2
No sound comes from the speaker.	• Squelch level is too deep. • Volume level is too low. • Speaker has been exposed to water.	• Set squelch to the threshold point. • Set [OFF/VOL] to a suitable level. • Drain water from the speaker.	p. 6 p. 7 —
Transmitting is impossible, or high power cannot be selected.	• Some channels are for low power or receive only. • The battery is exhausted. • The output power is set to low or extra low.	• Change channels. • Recharge the battery pack. • Push [H/L] to select high power.	pgs. 5, 7 p. 15 p. 7
The displayed channel cannot be changed.	• Lock function is activated.	• Push [H/L•LOCK] for 1 sec. to cancel the function.	p. 6
Scan does not start.	• “TAG” channel is not programmed.	• Set the desired channels as “TAG” channels.	p. 12
Scan starts automatically.	• Auto scan function is activated.	• Cancel the auto scan function in SET mode.	p. 14
No beep sounds.	• Beep tone is turned OFF.	• Turn the beep tone ON in SET mode.	p. 13
Receive signal cannot be understood.	• Optional voice scrambler is turned OFF. • Scramble code is not set correctly.	• Turn the optional voice scrambler ON. • Reset the scramble code.	p. 8 p. 8

CHANNEL LIST

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650
01A			156.050	156.050
	02	02	156.100	160.700
02A			156.100	156.100
	03	03	156.150	160.750
03A			156.150	156.150
	04		156.200	160.800
04A		04A	156.200	156.200
	05		156.250	160.850
05A		05A	156.250	156.250
06	06	06	156.300	156.300
	07		156.350	160.950
07A		07A	156.350	156.350
08	08	08	156.400	156.400
09	09	09	156.450	156.450
10	10	10	156.500	156.500
11	11	11	156.550	156.550
12	12	12	156.600	156.600
13†	13	13†	156.650	156.650
14	14	14	156.700	156.700
15†	15†	15†	156.750	156.750
16	16	16	156.800	156.800
17†	17	17†	156.850	156.850
	18		156.900	161.500
18A		18A	156.900	156.900

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	19		156.950	161.550
19A		19A	156.950	156.950
20	20	20†	157.000	161.600
20A			157.000	157.000
	21	21	157.050	161.650
21A		21A	157.050	157.050
	22		157.100	161.700
22A		22A	157.100	157.100
	23	23	157.150	161.750
23A			157.150	157.150
24	24	24	157.200	161.800
25	25	25	157.250	161.850
26	26	26	157.300	161.900
27	27	27	157.350	161.950
28	28	28	157.400	162.000
	60	60	156.025	160.625
60A			156.025	156.025
	61		156.075	160.675
61A		61A	156.075	156.075
	62		156.125	160.725
62A		62A	156.125	156.125
	63		156.175	160.775
63A			156.175	156.175
	64	64	156.225	160.825
64A		64A	156.225	156.225

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	65		156.275	160.875
65A	65A	65A	156.275	156.275
	66		156.325	160.925
66A	66A	66A†	156.325	156.325
67†	67	67	156.375	156.375
68	68	68	156.425	156.425
69	69	69	156.475	156.475
70‡	70‡	70‡	156.525	156.525
71	71	71	156.575	156.575
72	72	72	156.625	156.625
73	73	73	156.675	156.675
74	74	74	156.725	156.725
75	75	75	Guard	Guard
76	76	76	Guard	Guard
77†	77	77†	156.875	156.875
	78		156.925	161.525
78A		78A	156.925	156.925
	79		156.975	161.575
79A		79A	156.975	156.975
	80		157.025	161.625
80A		80A	157.025	157.025
	81		157.075	161.675
81A		81A	157.075	157.075
	82		157.125	161.725
82A		82A	157.125	157.125

Channel number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	83	83	157.175	161.775
83A		83A	157.175	157.175
84	84	84	157.225	161.825
84A			157.225	157.225
85	85	85	157.275	161.875
85A			157.275	157.275
86	86	86	157.325	161.925
86A			157.325	157.325
87	87	87	157.375	161.975
87A			157.375	157.375
88	88	88	157.425	162.025
88A			157.425	157.425

WX channel	Frequency (MHz)	
	Transmit	Receive
01	RX only	162.550
02	RX only	162.400
03	RX only	162.475
04	RX only	162.425
05	RX only	162.450
06	RX only	162.500
07	RX only	162.525
08	RX only	161.650
09	RX only	161.775
10	RX only	163.275

† Low power only. ‡ Receive only.

■ Specifications

• GENERAL

Frequency coverage	: Transmit	156–157.5 MHz
	Receive	156–163 MHz
Mode	: FM (16K0G3E)	
Channel spacing	: 25 kHz	
Current drain (at 8.4 V)	: TX High	1.8 A max.
	Max. audio	300 mA max.
	Power saved	13 mA typ.
Power supply requirement	: Icom battery packs	
Frequency stability	: ±10 ppm (–20°C to +60°C)	
Useable temperature range	: –20°C to +60°C; –4°F to +140°F	
Dimensions (with BP-185)	: 52.5 (W) × 129 (H) × 30 (D) mm	
(Projection is not included)	2 1/16 (W) × 5 3/32 (H) × 1 3/16 (D) in	
Weight (with BP-185)	: 280 g (9.9 oz)	

• TRANSMITTER

Output power (at 8.4 V)	: 5 W, 1 W and 0.15 W
Modulation system	: Variable reactance phase modulation
Max. frequency deviation	: ±5.0 kHz
Spurious emissions	: Less than –65 dB

• RECEIVER

Receive system	: Double-conversion superheterodyne
Sensitivity (12 dB SINAD)	: Less than 0.35 µV
Squelch sensitivity	: Adjustable up to 23 dB SINAD
Intermodulation rejection ratio	: More than 70 dB
Spurious response rejection ratio	: More than 70 dB
Adjacent channel selectivity	: More than 70 dB
Audio output power	: 400 mW at 5% distortion with an 8 Ω load

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

■ Options

• AD-58 BATTERY CHARGER + BC-122A/E AC ADAPTER
Used for regular charging of battery packs. The same as supplied with the transceiver. Charging time: 15 hours.

• BC-119 DESKTOP CHARGER (or BC-121 MULTI-CHARGER) + AD-69 DESKTOP CHARGER ADAPTER
Used for rapid charging of battery packs. Charging time: 1 to 1.5 hours. An AC adapter is supplied with the chargers. BC-121 rapidly charges up to 6 battery packs at once.

• CP-17L CIGARETTE LIGHTER CABLE
Connects to a ship's or vehicle's cigarette lighter socket (12 V) for use with the AD-58 or BC-119.

• FA-S57V FLEXIBLE ANTENNA
Same as supplied with the transceiver.

• OPC-515L DC POWER CABLE
Used for charging with external power supply.

• UT-98 VOICE SCRAMBLER UNIT
Ensures private communications. 128 codes are available. Not available in some countries.

◇ Battery packs

Battery pack	Voltage/ capacity	Output power	Height	Approx. operating time*		
				High	Low	E Low
BP-185	8.4 V/ 400 mAh	5.0 W	129 mm; 5 3/32 in	4 h	8 h	13 h
BP-186	7.2 V/ 1050 mAh	4.5 W	159 mm; 6 1/4 in	10.5 h	21 h	34 h

***Condition:** Tx : Rx : Standby (Power saved) = 5 : 5 : 90

Count on us!

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