



INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER **IC-M1V**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Icom Inc.

FOREWORD

Thank you for purchasing this Icom product. The IC-M1V VHF MARINE TRANSCEIVER is designed and built with Icom's superior technology and craftsmanship. With proper care this product should provide you with years of trouble-free operation.

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-M1V.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ WARNING!	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	It desired, inconvenience only. No risk of personal injury, fire or electric shock.

CAUTIONS

⚠ WARNING! NEVER connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

⚠ 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 5 to 10 cm (2 to 4 in) away from the lips and the transceiver is vertical.

NEVER connect the transceiver to a power source other than the BP-215. Such a connection will ruin the transceiver.

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

AVOID using or placing the transceiver in areas with temperatures below -20°C (-4°F) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

AVOID the use of chemical agents such as benzine or alcohol when cleaning, as they may damage the transceiver surfaces. After exposure to saltwater, clean the transceiver thoroughly with fresh water to avoid corrosion.

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

BE CAREFUL! The IC-M1V employs waterproof construction, which corresponds to JIS waterproof specification, grade 7 (1 m/30 min.). However, once the transceiver has been dropped, it is not guaranteed due to the transceiver may be cracked, or waterproof seal damaged, etc.

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.

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

KEEP the transceiver out of the reach of children.

For U.S.A. only

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

IN CASE OF EMERGENCY

If your vessel requires assistance, contact other vessels and the Coast Guard by sending a distress call on channel 16;

○ **USING CHANNEL 16**

DISTRESS CALL PROCEDURE

1. "MAYDAY MAYDAY MAYDAY."
2. "THIS IS" (name of vessel)
3. Your call sign or other indication of the vessel.
4. "LOCATED AT" (your position)
5. The nature of the distress and assistance required.
6. Any other information which might facilitate the rescue.

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◆ 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.

2

PANEL DESCRIPTION

■ Panel description

① ANTENNA CONNECTOR

Connects the supplied antenna. (p. 00)

② PTT SWITCH [PTT]

Transmits during push and hold; receives during release. (p. 00)

③ MONITOR SWITCH [MONI]

- Opens the squelch and monitors the operating channel while being pushed.
- While turning power ON, enters the SET mode and proceeds the SET mode contents when pushed. (p. 00)

④ BATTERY PACK RELEASE BUTTON

To remove the battery pack:

Slides the battery release button upwards, then lift up the battery pack.

To attach the battery pack:

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

5 CHANNEL UP/DOWN SWITCHES [▲]/[▼]

- ➔ Push either switch to change the operating channel. (p. 00)
- ➔ Push either switch to change the setting during set mode. (p. 00)
- ➔ Checks tag channels or changes scanning direction during scan. (p. 00)

6 CHANNEL 16 SWITCH [16•9]

- ➔ Selects channel 16 when pushed. (p. 00)
- ➔ Selects the call channel when pushed for 2 sec. (p. 00)
- ➔ Enters call channel write mode when the call channel is selected and this switch is pushed for 5 sec. (p. 00)

7 VOLUME CONTROL [VOL]

Turns power ON and adjusts the audio level. (p. 00)

8 SQUELCH CONTROL [SQL]

Sets the squelch threshold level. (p. 00)

9 CHANNEL/WEATHER CHANNEL SWITCH [CH/WX•U//C]

- ➔ Selects and toggles the regular channels and weather channel when pushed momentarily. (pgs. 00, 00)
- ➔ Selects one of 3 regular channels in sequence when pushed for 2 sec. (p. 00)
 - International, U.S.A. and Canadian channels are available for regular channels.

10 DUALWATCH/TRI-WATCH SWITCH [DW•TRI] (p. 00)

- ➔ Starts dualwatch when pushed momentarily.
- ➔ Starts tri-watch when pushed for 2 sec.
- ➔ Stops dualwatch/tri-watch when either is activated.
- ➔ Enters comment writing condition while pushing [MONI]. (p. 00)

11 SCAN SWITCH [SCAN•TAG]

- ➔ Starts and stops normal or priority scan when tag channels are programmed. (p. 12)
- ➔ Sets the displayed channel as a tag (scanned) channel or when pushed for 2 sec. (p. 12)
- ➔ Activates an optional voice scrambler function while pushing [MONI]. (p. 8)
- ➔ Clears all tag channels in the selected regular channel when pushed and tuning power ON. (p. 12)

12 TRANSMIT POWER/LOCK SWITCH [H/L•LOCK]

- ➔ Toggles high and low power (1 W) when pushed. (p. 7)
 - Some channels are set to low power only.
- ➔ While pushing [MONI], push this key to select extra low power (500 mW). (p. 7)
- ➔ Toggles the lock function ON and OFF when pushed for 2 sec. (p. 6)

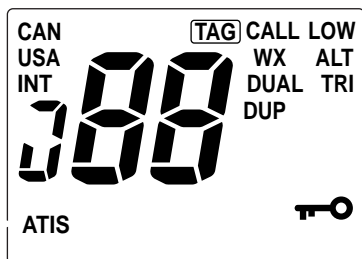
13 SPEAKER-MICROPHONE CONNECTOR [SP MIC]

Connects the optional speaker-microphone. (p. 00)

2 PANEL DESCRIPTION

■ Function display

- 1
- 2
- 3
- 4
- 5
- 6



- 16
- 15
- 14
- 13
- 12
- 11
- 9
- 8
- 7

1 BUSY INDICATOR (p. 00)

Appears while receiving a signal or while the squelch opens.

2 TRANSMIT INDICATOR (p. 00)

Appears while transmitting.

3 CHANNEL GROUP INDICATORS (p. 00)

Appears "USA" when U.S.A.; "INT" when international; "CAN" when Canadian channel group is selected.

4 CHANNEL NUMBER READOUT

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

5 ATIS INDICATOR





Appears while ATIS function is activated. (Uses German version only)

6 COMMENT INDICATOR

- Indicates or scrolls operating channel comment. (pgs. 5, 6)
- In SET mode, indicates or scrolls the selected item. (pgs. 13, 14)

7 BATTERY INDICATOR

Indicates remaining battery power.

Indication				
Battery level	Enough	Middle	Charging required	Exhausts soon

8 LOCK INDICATOR (p. 00)

Appears while the lock function is activated.

9 SUB CHANNEL READOUT

- Indicates channel 16 during priority scan. (p. 00)
- Indicates channel 16 during dualwatch or tri-watch. (p. 00)

10 DUPLEX INDICATOR

Appears when a duplex channel is selected.

11 SCRAMBLER INDICATOR

Appears when the optional voice scrambler is activated. (p. 00)

12 DUALWATCH/TRI-WATCH INDICATORS (p. 00)

- “DUAL” blinks during dualwatch.
- “TRI” blinks during tri-watch.

13 WEATHER CHANNEL/WEATHER ALERT INDICATOR

- “WX” appears when weather channel group is selected.
- “ALT” appears while the weather alert function is activated; blinks when alert tone is received.

14 LOW POWER INDICATOR (p. 00)

- Appears when low power is selected.
- Blinks when extra low power is selected.

15 CALL CHANNEL INDICATOR (p. 00)

Appears when a call channel is selected.

16 TAG CHANNEL INDICATOR (p. 00)

Appears when a tag channel is selected.

3

SUPPLIED ACCESSORY AND ATTACHMENT

◆ Supplied accessories

The following accessories are supplied: Qty.

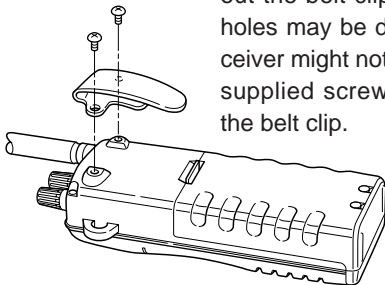
- ① Flexible antenna (FA-S57V)1
- ② Battery pack (BP-215)1
- ③ Battery charger (AD-95)1
- ④ AC adapter* (BC-122A/E/V*)1
- ⑤ Handstrap1
- ⑥ Belt clip1
- ⑦ Screws for the belt clip (M3 × 4)2
- ⑧ Screws for the AD-95 (M3.5 × 30)..... 2

*Depending on version

◆ Belt clip attachment

Attach the belt clip with the supplied 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.

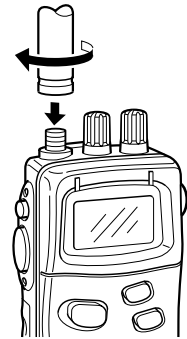


◆ Flexible antenna attachment

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

CAUTION: Attach the supplied antenna securely for waterproofing.

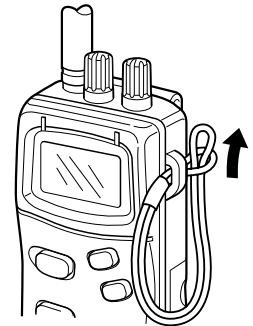
CAUTION: Transmitting without an antenna may damage the transceiver.



◆ Handstrap attachment

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

Facilitates carrying.



■ 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 automatically monitored during both dualwatch and tri-watch. While standing-by you have to monitor channel 16.

Channel 16 is instantly re-called when [16] is pushed.



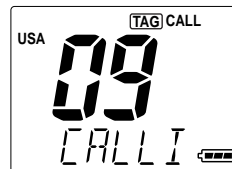
CALLING

◇ 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. ??) and are used to store your most often used channels in each group for quick recall.

➔ Push [16•9] for 2 sec. to select the call channel; of the selected channel group.

- "CALL" indicator and call channel number appear.
- Each channel group may have an independent call channel after changing a call channel.



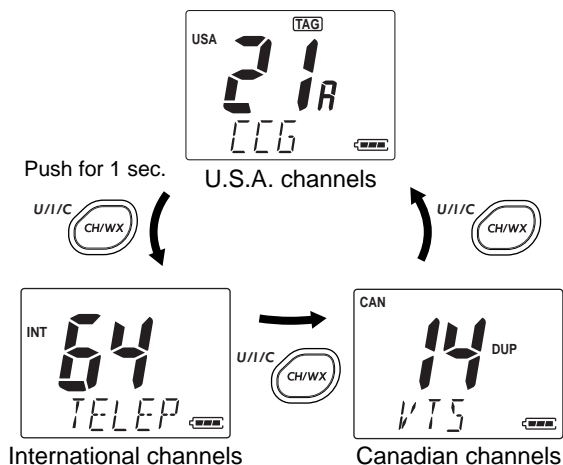
A channel comment
"CALLING" is scrolled.

4 BASIC OPERATION

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

There are 57 international, 61 U.S.A. and 57 Canadian 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 Push [▲]/[▼] to select a channel.
 - “DUP” appears for duplex channels.
- ③ To change the channel group, push [CH/WX•U/I/C] for 2 sec.
 - U.S.A., Canadian and international channels can be selected in sequence.

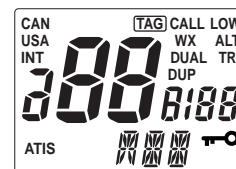
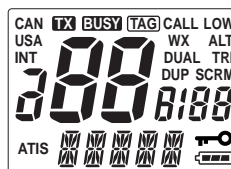


◇ Weather channels


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

The IC-M1V 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.




■ Receiving and transmitting

 **CAUTION:** Transmitting without an antenna may damage the transceiver.

- ① Rotate [VOL] clockwise to turn power ON, then set to the 10 o'clock position.
 - Turn [SQL] clockwise to mute any audio noise if necessary. Refer to the previous page for details.
- ② Push [▲]/[▼] to select the desired channel.
 - When receiving a signal, "BUSY" appears and audio is emitted from the speaker.
 - Further adjustment of [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, Low 2, is available for short distance communications. Push [H/L] while pushing [MONI] 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 (voice), pause a few sec. after pushing [PTT], hold the microphone 10 to 15 cm (4 to 6 inches) from your mouth and speak at a normal voice level.

 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.

4 BASIC OPERATION

■ Lock function

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

➡ Push [H/L•LOCK] for 2 sec. to turn the lock function ON and OFF.

- Only [PTT], [H/L] and [MONI] are functional.



Appears when the lock function is in use.

■ 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.

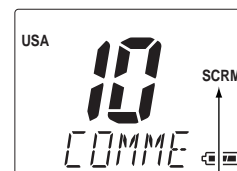
- The backlighting is automatically turned OFF 5 sec. after operation.
- Push [MONI] to turn the backlighting ON without changing the operating condition.

■ 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, either an optional UT-98 or UT-122 is necessary. Ask your dealer for details.

- ① Select an operating channel except channel 16 or weather channels.
- ② Push [SCN] while pushing and holding [MONI].
 - "SCRM" appears.
- ③ To turn the scrambler function OFF, repeat step ②.
 - "SCRM" disappears.



Appears when the voice scrambler function is in use.

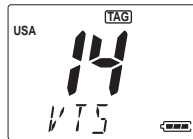
◆ Programming scramble codes

There are 128 codes (00 to 127) available with UT-98 or 32 codes (00 to 31) available with UT-122 for programming. In order to understand one another, all transceivers in your group must have the same scramble code, as well as the same unit. See page ?? for scrambling code setting for details

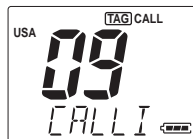
■ Call channel programming

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 2 sec. several times to select the desired channel group (USA, INT, CAN) to be programmed.



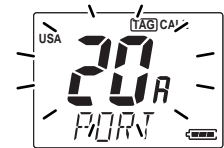
- ② Push [16•9] for 2 sec. to select the call channel of the selected channel group.
•“CALL” and call channel number appear.



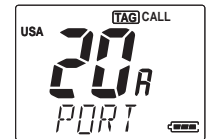
- ③ Push [16•9] again for 5 sec. (until long beep changes to 2 short beeps) to enter call channel programming condition.
•Call channel number and channel group to be programmed flashes.



- ④ Push [▲]/[▼] 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.



5

SCAN OPERATIONS

■ Scan types

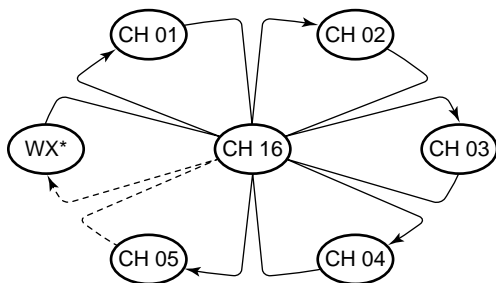
Scanning is an efficient way to locate signals quickly over a wide frequency range. The transceiver has priority scan and normal scan.

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.

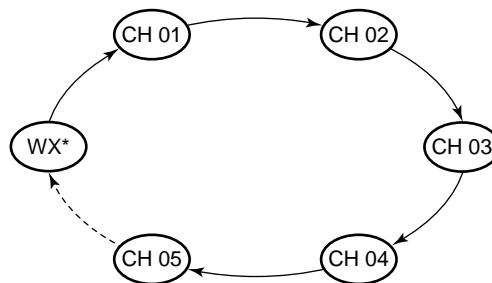
/// Choose priority or normal scan in SET mode. (p. 14)

PRIORITY SCAN



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, INT, CAN) independently.

- ① Select the desired channel group (USA, INT, CAN) by pushing [CH/WX•U/I/C] for 2 sec., if desired.
- ② Select the desired channel to set as a tag channel.
- ③ Push [SCN•TAG] for 2 sec., to set the displayed channel as a tag channel.
 - “TAG” appears in the function display.
- ④ To cancel the tag channel setting, push [SCN•TAG] for 2 sec.
 - “TAG” disappears.

•Clearing all tag channels in the selected channel group

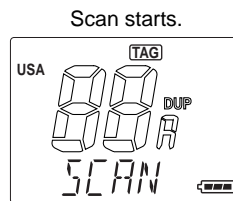
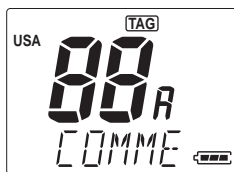
➤ Turn power ON while pushing and holding [SCN•TAG] to clear all tag channels in the channel group.

■ 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 2 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.
 - The comment indicator indicates “SCAN”.
 - The sub channel readout indicates “16” during priority scan.
 - When a signal is received, 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.)
 - Push [▲]/[▼] 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.



Scan pauses when receiving a signal and audio is emitted.



Push to stop the scan.



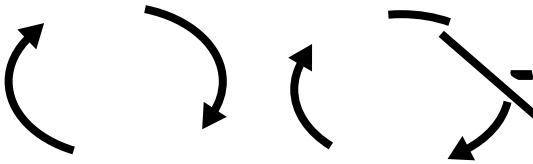
6

DUAL WATCH/TRI-WATCH

■ 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 2 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.

CHANNEL COMMENT PROGRAMMING

7

■ About the channel comment

The IC-M1V has a capability to assign up to 10-characters channel comment for each operating channel, includes weather channel. This provides easy recognition of channel usage, or station names, etc.

When shipped from the factory, the IC-M1V is programmed with default comment for each VHF marine channel (refer to the *CHANNEL LIST* on pgs. ??, ??). These defaults can be overwritten if desired.

◇ Available characters

-- (=)	+ (+)	-- (-)	* (=)	/ (/)	, (,) (space)	0 (0)	1 (1)	2 (2)	
3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	A (A)	B (B)	C (C)
D (D)	E (E)	F (F)	G (G)	H (H)	I (I)	J (J)	K (K)	L (L)	M (M)
N (N)	O (O)	P (P)	Q (Q)	R (R)	S (S)	T (T)	U (U)	V (V)	W (W)
X (X)	Y (Y)	Z (Z)	a (a)	b (b)	c (c)	d (d)	e (e)	f (f)	g (g)
h (h)	i (i)	j (j)	k (k)	l (l)	m (m)	n (n)	o (o)	p (p)	q (q)
r (r)	s (s)	t (t)	u (u)	v (v)	w (w)	x (x)	y (y)	z (z)	

■ Channel comment programming

- Push [▲]/[▼] to select a channel to program.
 - Push [CH/WX•U/I/C] for 2 sec. to select a channel group, if necessary.
- While pushing [MONI], push [DW].
 - The 1st character of the currently programmed comment flashes.
- Push [▲]/[▼] to select a character.
- Push [SCN] to move to the right; then push [▲]/[▼] to select a character.
 - Pushing [H/L], moves to left
- Continue until the desired characters have been selected, then push [DW] to return to normal operation.



8

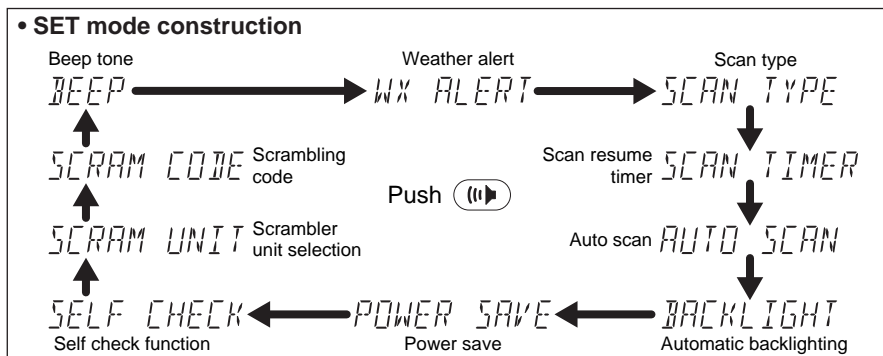
SET MODE

■ SET mode programming

SET mode is used to change the conditions of 10 transceiver functions: beep tone function, weather alert function, scan type (normal/priority), scan resume timer, auto scan function, auto watch, automatic backlighting, power saver function, self check function, voice scrambler type and scrambling code.

When no optional voice scrambler unit is installed, voice scrambler type and scrambling code setting are not

- ① Turn power OFF.
- ② While pushing [MONI], turn power ON and continue pushing [MONI] until emits beep.
 - After beep emission, release [MONI].
 - Set mode item at comment indicator and condition at channel number readout are displayed.
- ④ Push [MONI] to select the desired item, if necessary.
- ⑤ Push [▲]/[▼] to select the desired condition of the item.
 - Turning power OFF, then ON again also exits SET mode.



■ SET mode items

◆ Beep tone “BEEP”

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 [VOL].



Beep ON
(default)



Beep OFF



◇ Weather alert function

“WX ALERT”

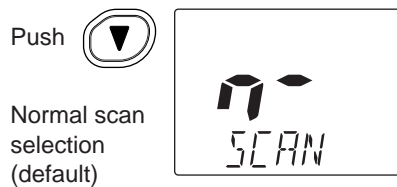
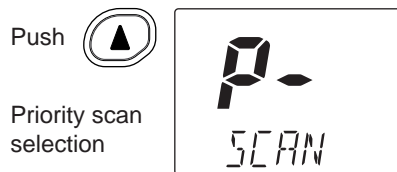
An NOAA broadcast station transmits an weather alert tone before an important weather information. When the weather alert function is turned ON, the transceiver detects the alert, then flashes the “ALT” indicator until the transceiver is operated. The previously selected (used) weather channel is checked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

•“ALT” appears when the function is set ON.

◇ Scan type selection

“SCAN TYPE”

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.



SCAN E

◇ Scan resume timer

“SCAN TIMER”

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.

8 SET MODE

◆ Auto scan function “AUTO SCAN”

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

- “SCAN” appears when the function is turned ON.

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

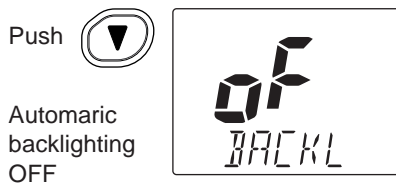
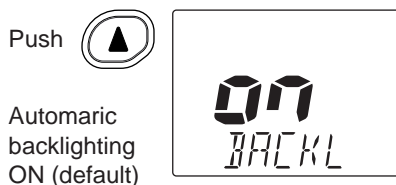


Scrolls the channel
comment, “AUTO SCAN”.

◆ Automatic backlighting “BACKLIGHT”

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

- The backlighting automatically turns OFF 5 sec. after operation.
- Push [MONI] to turn the backlighting ON without changing the operating condition.
- The backlighting ON when entering SET mode, regardless of this setting.



Scrolls the channel
comment, “BACKLIGHT”.

◆ Power save function “POWER SAVE”

The power saver function reduces current drain by deactivating the receiver circuit for present intervals.

▨ The power save function does not function when the auto scan function is in use.



Scrolls the channel
comment, “POWER SAVE”.

◇ Self check function

“SELF CHECK”

The self check function checks transceiver conditions by itself and informs you in case of problem is found. Following contents are checked after power ON, then turning into operation mode when no problem is found.

- PLL lock (both transmit and receive)
- Temperature
- Connected battery voltage
- Water intrusion

Push 

Self check
function ON



Push 


Self check
function OFF
(default)



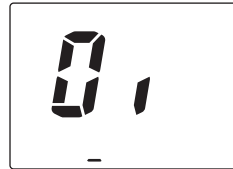
Scrolls the channel
comment, “SELF CHECK”.

◇ Scrambler unit selection

“SCRAM UNIT”

 This item appears only when voice
scrambler unit is installed.

Selects installed voice scrambler unit,
otherwise the voice scrambler function
not performed properly.



◇ Scrambler code

“SCRAM CODE”

There are 128 codes (00 to 127) available with UT-98 or 32 codes (00 to 31) available with UT-122 for programming. In order to understand one another, all transceivers in your group must have the same unit* and scramble code.

*Different scrambling system is used between UT-98 and UT-122, therefore, the same unit must be used in your group .

9

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.

AVOID leave the battery pack with fully charged or completely discharged condition for long time. It makes shorter battery life. In case of leaving the battery pack for long time, must be in safekeeping after discharge or use the battery until the battery indicator shows middle level, then release from the transceiver.


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.

■ 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:
+10°C to +40°C (+50°F to +104°F)
- Use the supplied charger (AD-95) 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.

 **CAUTION:** DO NOT leave the battery pack in the charger more than 1 hour after the charging indicator lights OFF. It will make shorter battery life, due to over charging.

◆ Attaching the AD-95 to a desktop

Eyelet:

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

◆ Charging

- ① Connect the AC adapter (BC-122) or optional cable (CP-17L or OPC-515L) as shown below.
- ② Insert the battery pack only or with the transceiver into the charger.
 - The charge indicator lights green.
- ③ Charge the battery pack for approx. 8 hours.

◆ Attaching the AD-95 to a wall

AVOID overcharging!
The AD-95 is **NOT** a transceiver hanger. Take out the battery within 1 hour after charged.

10 SPEAKER-MICROPHONE

■ Speaker-microphone descriptions

/// **IMPORTANT: KEEP** the [SP MIC] jack cover attached (transceiver) when speaker-microphone is not in use. Water will not coming into the transceiver even the cover is not attached, however, the terminals (pins) become rusty when the connector has wet.

NEVER immerse the connector in water. If the connector becomes wet, be sure to dry **BEFORE** attaching it to the transceiver.

■ Attachment

Insert the connector of the speaker-microphone into the [SP MIC] connector on the transceiver and rotates (screws) the connector cover as shown in the diagram below.

/// **NOTE:** The microphone element is located at the top of the speaker-microphone. To maximize the readability of your transmitted signal (voice), hold the microphone approx. 2.5 cm (1 inch) from your mouth, and speak at a normal voice level.

TROUBLESHOOTING 11

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
No power comes ON.	<ul style="list-style-type: none"> •The battery is exhausted. •Bad connection to the battery pack. 	<ul style="list-style-type: none"> •Recharge the battery pack. •Check the connection to the transceiver. 	p. 15 p. 2
No sound comes from the speaker	<ul style="list-style-type: none"> •Squelch level is too deep. •[OFF/VOL] level is too low. 	<ul style="list-style-type: none"> •Set squelch to the threshold point. •Set [OFF/VOL] to a suitable level. 	p. 6 p. 7
Transmitting is impossible, or high power cannot be selected.	<ul style="list-style-type: none"> •Some channels are for low power or receive only. •The battery is exhausted. •The output power is set to low or extra low. 	<ul style="list-style-type: none"> •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.	<ul style="list-style-type: none"> •Lock function is activated. 	<ul style="list-style-type: none"> •Push [H/L•LOCK] for 2 sec. to cancel the function. 	p. 6
Scan does not start.	<ul style="list-style-type: none"> •“TAG” channel is not programmed. 	<ul style="list-style-type: none"> •Set the desired channels as “TAG” channels. 	p. 12
Scan starts automatically.	<ul style="list-style-type: none"> •Auto scan function is activated. 	<ul style="list-style-type: none"> •Cancel the auto scan function in SET mode. 	p. 14
No beep sounds.	<ul style="list-style-type: none"> •Beep tone is turned OFF. 	<ul style="list-style-type: none"> •Turn the beep tone ON in SET mode. 	p. 13
Receive signal cannot be understood.	<ul style="list-style-type: none"> •Optional voice scrambler is turned OFF. •Scramble code is not set correctly. 	<ul style="list-style-type: none"> •Turn the optional voice scrambler ON. •Reset the scramble code. 	p. 8 p. 8

12 CHANNEL LIST

Channel Number			Frequency (MHz)		Channel comment
USA	INT	CAN	Transmit	Receive	
	01	01	156.050	160.650	TELEPHONE
01A			156.050	156.050	VTS
	02	02	156.100	160.700	TELEPHONE
02A			156.100	156.100	
	03	03	156.150	160.750	TELEPHONE
03A			156.150	156.150	
	04		156.200	160.800	INTL
04A		04A	156.200	156.200	CCG
	05		156.250	160.850	INTL
05A		05A	156.250	156.250	VTS
06	06	06	156.300	156.300	SAFETY
	07		156.350	160.950	INTL
07A		07A	156.350	156.350	COMMERCIAL
08	08	08	156.400	156.400	COMMERCIAL
09	09	09	156.450	156.450	CALLING
10	10	10	156.500	156.500	COMMERCIAL
11	11	11	156.550	156.550	VTS
12	12	12	156.600	156.600	VTS
13*1	13	13*1	156.650	156.650	BRG/BRG
14	14	14	156.700	156.700	VTS
15*1	15*1	15*1	156.750	156.750	COMMERCIAL
16	16	16	156.800	156.800	CALLING
17*1	17	17*1	156.850	156.850	SAR
	18		156.900	161.500	INTL
18A		18A	156.900	156.900	COMMERCIAL
	19		156.950	161.550	INTL

Channel Number			Frequency (MHz)		Channel comment
USA	INT	CAN	Transmit	Receive	
19A		19A	156.950	156.950	COMMERCIAL
20	20	20*1	157.000	161.600	PORT OPR
20A			157.000	157.000	PORT OPR
	21	21	157.050	161.650	INTL
21A		21A	157.050	157.050	CCG
		21b	157.050	157.050	CMBS
	22		157.100	161.700	INTL
22A		22A	157.100	157.100	USCG
	23	23	157.150	161.750	INTL
23A			157.150	157.150	USCG
24	24	24	157.200	161.800	TELEPHONE
25	25	25	157.250	161.850	TELEPHONE
		25b	157.250	161.850	CMBS
26	26	26	157.300	161.900	TELEPHONE
27	27	27	157.350	161.950	TELEPHONE
28	28	28	157.400	162.000	TELEPHONE
		28b	157.400	162.000	CMBS
	60	60	156.025	160.625	TELEPHONE
60A			156.025	156.025	
	61		156.075	160.675	INTL
61A		61A	156.075	156.075	CCG
	62		156.125	160.725	INTL
62A		62A	156.125	156.125	CCG
	63		156.175	160.775	INTL
63A			156.175	156.175	VTS
	64	64	156.225	160.825	TELEPHONE

*1Low power only.

*2Receive only.

CHANNEL LIST 12

64A	64A	156.225	156.225	COMMERCIAL	
Channel Number	Frequency (MHz)	Channel comment			
USA	INT	CAN	Transmit	Receive	
	65		156.275	160.875	INTL
65A	65A	65A	156.275	156.275	PORT OPR
	66		156.325	160.925	INTL
66A	66A	66A*1	156.325	156.325	PORT OPR
67*1	67	67	156.375	156.375	BRG/BRG
68	68	68	156.425	156.425	SHIP-SHIP
69	69	69	156.475	156.475	PLEASURE
70*2	70*2	70*2	156.525	156.525	DSC
71	71	71	156.575	156.575	PLEASURE
72	72	72	156.625	156.625	SHIP-SHIP
73	73	73	156.675	156.675	PORT OPR
74	74	74	156.725	156.725	PORT OPR
75	75	75	Guard	Guard	
76	76	76	Guard	Guard	
77*1	77	77*1	156.875	156.875	PORT OPR
	78		156.925	161.525	INTL
78A		78A	156.925	156.925	SHIP-SHIP
	79		156.975	161.575	INTL
79A		79A	156.975	156.975	SHIP-SHIP
	80		157.025	161.625	INTL
80A		80A	157.025	157.025	SHIP-SHIP
	81		157.075	161.675	INTL
81A		81A	157.075	157.075	CCG
	82		157.125	161.725	INTL
82A		82A	157.125	157.125	CCG

*1Low power only.

*2Receive only.

Channel Number			Frequency (MHz)		Channel comment
USA	INT	CAN	Transmit	Receive	
	83	83	157.175	161.775	CCG
83A		83A	157.175	157.175	CCG
		83b	157.175	157.175	CMBS
84	84	84	157.225	161.825	TELEPHONE
84A			157.225	157.225	
85	85	85	157.275	161.875	TELEPHONE
85A			157.275	157.275	
86	86	86	157.325	161.925	TELEPHONE
86A			157.325	157.325	
87	87	87	157.375	161.975	TELEPHONE
87A			157.375	157.375	
88	88	88	157.425	162.025	TELEPHONE
88A			157.425	157.425	COMMERCIAL
WX channel	Frequency (MHz)		Channel comment		
	Transmit	Receive			
WX01	Rx only	162.550			
WX02	Rx only	162.400			
WX03	Rx only	162.475			
WX04	Rx only	162.425			
WX05	Rx only	162.450			
WX06	Rx only	162.500			
WX07	Rx only	162.525			
WX08	Rx only	161.650			
WX09	Rx only	161.775			
WX10	Rx only	163.275			

CHANNEL NAME KEY

TELEPHONE	:	public correspondence
PLEASURE	:	pleasure boat use
SAFETY	:	safety communications
PORT OPR	:	port operations
VTS	:	vessel traffic control
SHIP-SHIP	:	intership communications
CMBS	:	continuous marine broadcast system
COMMERCIAL	:	commercial use
USCG	:	United States Coast Guard
BRG/BRG	:	bridge to bridge communications
INTL	:	outside of the US or Canada
SAR	:	search and rescue
CCG	:	Canadian Coast Guard

13 SPECIFICATIONS AND OPTIONS

■ Specifications

•GENERAL

- Frequency coverage : Transmit 156–157.5 MHz
Receive 156–163 MHz
- Mode : FM (16K0G3E)
- Channel spacing : 25 kHz
- Current drain (at 7.4 V) : TX 5 W 1.5 A max.
Max.audio 200 mA max.
Power saved ?? mA typ.
- Power supply requirement : Icom battery pack, BP-215
- Frequency stability : ± 10 ppm (-20°C to $+60^{\circ}\text{C}$; -4°F to $+140^{\circ}\text{F}$)
- Dimensions (with BP-215) : $52.5(\text{W}) \times 129(\text{H}) \times 30(\text{D})$ mm
(Projection not included) $2\frac{1}{16}(\text{W}) \times 5\frac{3}{32}(\text{H}) \times 1\frac{3}{16}(\text{D})$ in
- Weight (with BP-215) : 280g (9.9 oz)

•TRANSMITTER

- Output power : 5 W, 1 W and 0.5 W
- Modulation system : Variable reactance frequency 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 $0.35 \mu\text{V}$
- Squelch sensitivity : Adjustable up to 23 dB SINAD
- Intermodulation rejection ratio : 70 dB typical
- Spurious response rejection ratio: 70 dB typical
- Adjacent channel selectivity : 70 dB typical
- Audio output power : 350 mW typical at 10% distortion
with an 8Ω load

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

■ Options

•AD-95 BATTERY CHARGER + BC-122A/E AC ADAPTER

Used for regular charging of battery pack. The same as supplied with the transceiver. Charging time: 8 hours

•BP-215 BATTERY PACK

Long life, Li-ion battery pack allowing 12–14 hrs.* operation. The same as supplied with the transceiver. 7.4 V/1600 mAh.

*Tx:Rx:Stand-by=5:5:90

•CP-17L CIGARETTE LIGHTER CABLE

Connects to a ship's or vehicle's cigarette lighter socket (12 V) for use with the AD-95.

•FA-S57V FLEXIBLE ANTENNA

Same as supplied with the transceiver.

•HM-125 SPEAKER-MICROPHONE

Full-sized waterproof (JIS grade 7; 1m/30 min.) speaker-microphone including alligator type clip to attach to your shirt or collar, etc.

•OPC-515L DC POWER CABLE

Used for charging a battery pack via an AD-95 with external power supply.

•UT-98 VOICE SCRAMBLER UNIT

Ensures private communications. 128 scrambling codes are available. The scrambling system is not compatible with UT-122. Not available in some countries.

•UT-122 VOICE SCRAMBLER UNIT

Ensures private communications. 32 scrambling codes are available. The scrambling system is not compatible with UT-98. Not available in some countries.

Count on us!

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