

**ONWA<sup>®</sup>**

**ONWA MARINE ELECTRONICS CO., LTD.**

**ONWA<sup>®</sup>**

**INSTRUCTION MANUAL**

**KV-28**

**VHF MARINE TRANSCEIVER**



**Float and Flash**  
IP-67 Waterproof

## Foreword

Thank you for purchasing this company marine transceiver, you will find the professional and human oriented design of the transceiver during use. Read all instructions carefully and completely before using the transceiver.

It is a powerful marine radio, it is designed on IMO (International Maritime Organization) resolution.

As adopting advance waterproof technology, the transceiver is with good waterproof, floating and flash functions.

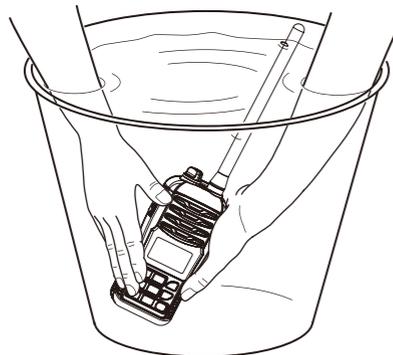
## CAUTION

- NEVER connect the transceiver to an AC outlet, this may pose a fire hazard or result in an electric shock.
- DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below  $-15^{\circ}\text{C}$  or above  $+55^{\circ}\text{C}$ .
- KEEP the transceiver at least 1 meter away from your vessel's magnetic navigation compass.
- BE CAREFUL, the transceiver meets IP-67 requirements for waterproof protection. However, once the transceiver has been dropped, waterproof protection cannot be guaranteed because of possible damage to the transceiver's case or the waterproof seal.
- Ⓞ MAKE SURE the flexible antenna and battery cover are securely attached to the transceiver, and that antenna and battery cover are dry before attachment. Exposing the inside of the transceiver to water will result in serious damage to the transceiver.

## ■ Recommendation

Clean the transceiver thoroughly with fresh water after exposure to saltwater, and dry it before operating. Otherwise, the transceiver's key, switches and controllers may become unusable due to salt crystallization.

NOTE:DO NOT submerge the transceiver in water if there is any reason to suspect the waterproof protection may not be effective. For example, in cases where the battery cover or DC Jack cap rubber seal is damaged,the transceiver/battery cover/DC Jack cap is cracked or broken , or the transceiver has been dropped, or when the battery cover, antenna or DC Jack cap are detached from the transceiver.



## ■ Features

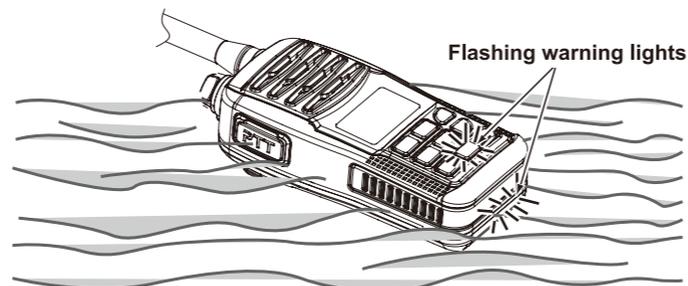
### ◆ Floats on Water

The transceiver floats in fresh or salt water even when the supplied accessories are attached.

When a third-party battery pack, strap, antenna, etc. is used , it may sink.

### ◆ Floats and Flashes

An LED sends out intermittent light from a transparent section on the bottom of the radios, while floating in the water. As the LED light stands out in the dark ( like a flashing fishing float), the radio can be easily retrieved from the water. This function works even when the radios is turned OFF.



## CONTENTS

### PREPARATION

Preparation .....	1
Supplied Accessories .....	1
Charging the Battery Pack .....	1
Battery Pack .....	2
Flexible antenna .....	2
Belt clip .....	2

### PANEL DESCRIPTION

Pannel Description .....	3
Display .....	4
Turn ON/OFF .....	5
Adjusting the Volume Level .....	5
Adjusting the Squelch Level .....	5
Receiving and Transmitting .....	5
Receiving .....	5
Transmitting .....	5
Channel Group Selective .....	5
Channel Selection .....	6
Channel 16 .....	6
Call Channel .....	6
Weather Channels .....	6
Call Channel Programming .....	6
Monitor Function .....	7
Volume Loud Function .....	7
Volume Mute Function .....	7
Automatic Backlight .....	7
Lock Function .....	7
Vibration Water Draining Function .....	7

### SCAN OPERATION

Scan Types .....	8
Setting TAG Channels .....	8
Setting (or clearing) a TAG channel .....	8
Setting (or clearing) all tagged channels .....	8
Starting a Scan .....	8

### DUALWATCH/TRI-WATCH

Description .....	9
Operation .....	9

### SET MODE

Set Mode Programming .....	10
Set Mode Operation .....	10
Set Mode Items .....	10
Beep Tone Function .....	10
Weather Alert .....	10
Priority Scan Function .....	10
Scan Resume Time .....	10
Auto Scan Function .....	10
Dual/Tri-watch Function .....	11
Monitor Key Action .....	11
Automatic Backlighting .....	11
LCD Contrast Setting .....	11
Power Save Function .....	11
VHF Marine Channel List .....	12
Specification .....	13
Troubleshooting .....	14

## PREPARATION

### ■ Preparation

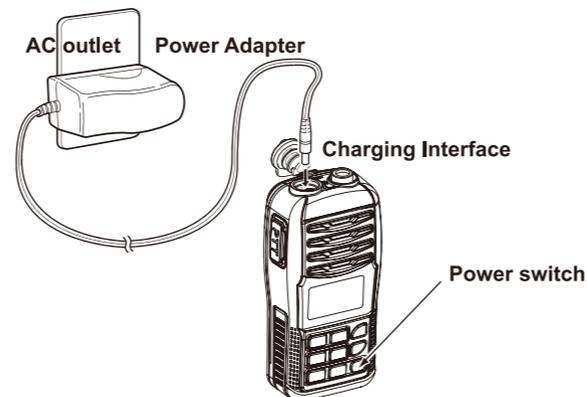
#### ◆ Supplied Accessories

Carefully unpack the transceiver. We recommend that you identify items listed in the following table before discarding the packing materials. If any item are missing or have been damaged, please contact dealer immediately.

Items	Qty
Antenna	1
Battery Pack	1
Adaptor	1
Belt Clip	1
Handstrap	1
User's Manual	1

#### ◆ Charging the Battery Pack

1. Connect the adaptor to the AC Power.
2. Rotate the jack in top of transceiver, connect it to the adaptor start to charge, LCD appears "CHG" and " [battery icon] " to indicate charging.

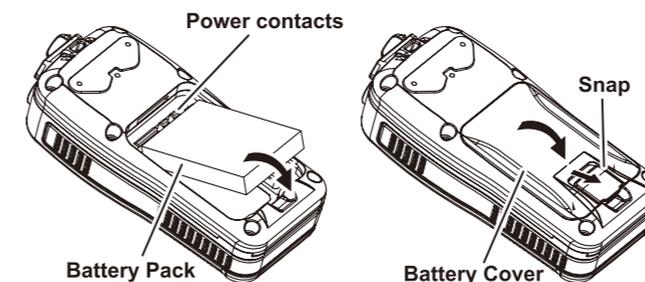


3. If battery charging is full , LCD appears "FL" , you should pull the adaptor out .
  - NOTE: if transceiver didn't insert battery pack, LCD will appears "Er" .

#### ◆ Battery Pack

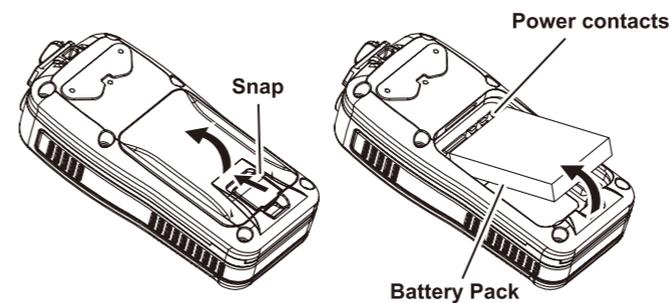
To insert the battery pack:

Place the battery into the transceiver so it fits flat, and then securely attach the battery cover, as shown. Push the cover until the latch comes back to the locked position.



To remove the battery pack

Slide the latch and then lift the battery cover to remove it , then remove the battery pack , as shown.

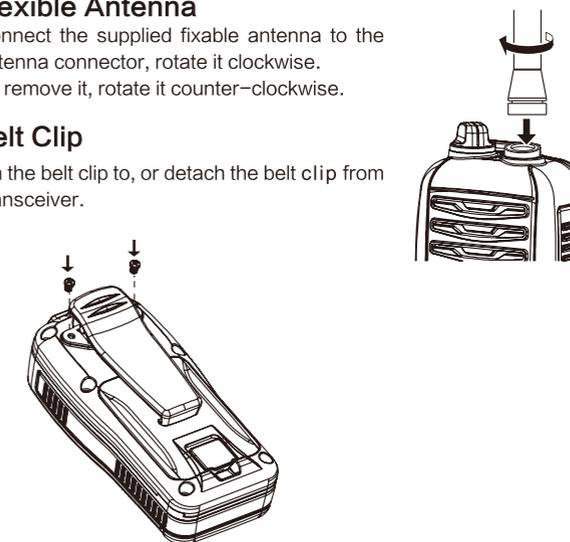


#### ◆ Flexible Antenna

1. Connect the supplied fixable antenna to the antenna connector, rotate it clockwise.
2. To remove it, rotate it counter-clockwise.

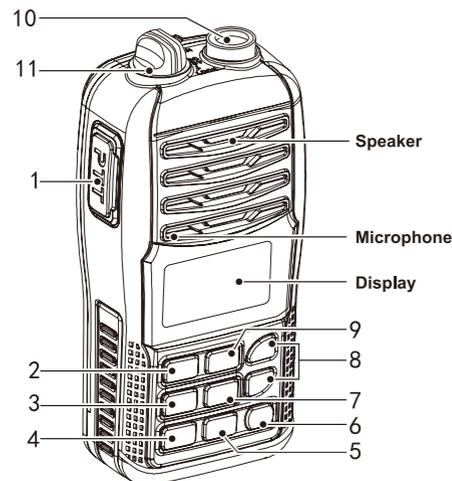
#### ◆ Belt Clip

Attach the belt clip to, or detach the belt clip from the transceiver.



## PANEL DESCRIPTION

### Panel Description



#### 1. PTT

- Hold down to transmit; release to receive.

#### 2. CH 16/Call CH

- Push to select channel 16.
- Hold for 1 second to select the call channel.(factory default: channel 9 )
- When the call channel is selected, hold for 3 seconds to enter the call channel programming mode.
- While in the set mode, push to return to the normal operation mode.

#### 3. FAV/TAG

- PUSH to sequentially select to the favorite channels, while ignoring un-

tagged channel, in a channel group.

- Hold for 1 second to set or clear the TAG for the display channel.
- While hold , turn ON the power to clear or set all TAG channels in the setected channel group.

#### 4. SCAN/DUAL

- Push to start or stop a normal or priority scan.
- Hold for 1 second to enter the Dual/Tri-watch mode.
- Push to exit the watch mode
- Hold this key and HI/LO key for 1 second, to activate the AquaQuake Function.

#### 5. [HI/LO]/[ ]

- Push to select the high or low output power.
- Hold for 1 second to turn the Lock function ON or OFF.

#### 6. POWER[ ]

- Hold to turn power ON or OFF.

#### 7. VOL./SQL/MONI

- Push to enter the volume adjustment mode or the squelch adjustment mode.
- Hold for 1 second to active the Monitor function.
- While hold this key , hold [ ] key to turn ON the power and enter the set mode.
- While in the Set mode, push to select an item,
- While holding this key , push[ ] to turn ON the Volume Mute function . Do the same steps again to turn OFF the function.
- While hold down this key, push[ ] to turn ON the Volume Loud function. Do the same steps again to turn OFF the function.

#### 8. [ ]/[ ]UP/DOWN

- Push to select an operation channel.

- While in the Set mode, push to select the setting or value of an item.
- Push to check TAG channels or change scanning direction during a scan.

#### 9. [CH]

- Hold for 1 second, one or more times, to select a channel group from USA, International, and Canada.
- Push to return to the previous channel before selecting Channel 16 or the Calling channel.

#### 10.ANTENA CONNECTOR

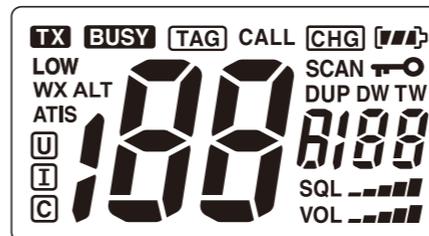
- Connect the supplied antenna here.

#### 11.[DC 6V]

- Connect the adaptor or optional cable here.

NOTE: Attached the [DC] jack cap when the adaptor is not connect-  
ed. Otherwise , water will get into the transceiver.

### Display



Icon	Description
	Transmit Indicator , Appears while transmitting
<b>LOW</b>	Low Power indicator 1) "LOW" appears when low power is selected 2) "LOW" blinks when switching forced low power mode because of a high temperature arrow or low voltage
<b>ATIS</b>	Appears while working in ATIS Channel
	Appears when U.S.A
	Appears when international
	Appears when Canadian channel group is selected
<b>BUSY</b>	Appears when receiving a signal or when the squelch opens Blinks while monitoring
	Appears when a TAG channel is selected
<b>CALL</b>	Appears when the call channel is selected
	Appears when the radio is charging
	Battery Indicator, remaining battery power
<b>SCAN</b>	Blinks while scanning
	Appears while the lock function is activated
<b>DUP</b>	Appears when a duplex channel is selected
<b>DW</b>	Appears when dual watch
<b>TW</b>	Appears when tri-band watch
	Channel number readout Indicates the selected operating channel number In set mode, indicates the selected condition
	In dual watch/tri-watch,appears CH16 during priority scan Appears while volume selecting Appears while SQL selecting Appears while mode selecting
	Show the squelch level
	Show the volume level Blinks when the volume mute is activated

## BASIC OPERATION

### Turn ON/OFF

1. Press [POWER] for 1 second to turn ON.
2. Press again [POWER] for 1 second to turn OFF.

### Adjusting the Volume Level

The volume level can be adjusted using [VOL/SQL] and [▼] or [▲].

1. Push [VOL/SQL] once to enter the volume adjustment mode. Then press [▼] or [▲] to adjust the volume level.
  - The "VOL" icon starts blinking.
  - The transceiver has 31 volume levels and OFF.
  - When no key operation is performed for 5 seconds, then transceiver returns to the normal mode.
2. Push [VOL/SQL] twice to exit the volume adjustment mode.

### Adjusting the Squelch Level

The squelch level can be adjusted using [VOL/SQL] and [▼] or [▲] . in the order to properly receive signals. As well as for the scan to effectively function, the squelch must be adjusted to the proper level.

1. Push [VOL/SQL] twice to enter the squelch adjustment mode, then push [▼] or [▲] to adjust the squelch level.
  - The "SQL" icon starts blinking.
  - The transceiver has 11 squelch levels: OP is completely open; 10 is tight squelch; 1 is loose squelch
  - When no key operation is performed for 5 seconds, the transceiver returns to the normal mode.
2. push [VOL/SQL] again to exit the squelch adjustment mode.

### Receiving and Transmitting

#### Receiving

1. set the volume levels by push [VOL/SQL] , [▼] or [▲].
2. set the squelch levels by [▼] or [▲].
  - when receiving a signal, " **BUSY** " appears and audio is heard from the speaker.
  - The conserve battery power, the transceiver's power save function automatically activates when no signal is received for 5 seconds.

#### Transmitting

1. Push [Hi/Low] to select output power.
  - "LOW" appears when low power is selected.
  - Choose low power for short range communications; choose high power for longer distance communications.
  - Some channels are for only low power communication.
2. Hold down [PTT] to transmit, then speak into the microphone.
  - "TX" appears.
  - Channel 70 cannot be used for transmission
3. Release [PTT] to receive.

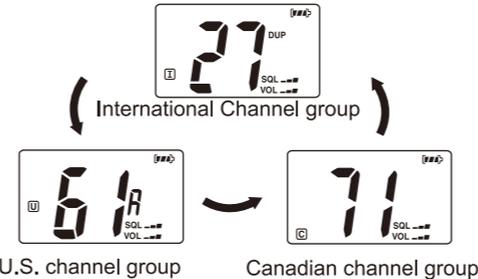
#### NOTE:

- Transmitting without an antenna can damage the transceiver.
- To maximize the readability of your transmitted signal, pause for a second after pushing [PTT] hold the microphone 5-10cm from your mouth and speak into the microphone at a normal voice level.

### Channel Group Selective

This transceiver is pre-programmed with USA, International, Canadian channels. Choose the appropriate channel groups for your operating area.

1. Push [CH] to select a regular channel.
2. Hold down [CH] for 1 second, one or more times, to select the desired channel group.
  - The selectable channel groups are different, depending on the version.
3. Push [▲] or [▼] to select a channel.
  - "A" appears when a simplex channel is selected.



### Channel Selection

Important: Prior to using the transceiver for the first time, the battery pack must be fully charged for optimum life and operation. To avoid damage to the transceiver, turn the power OFF while charging.

#### Channel 16

Channel 16 is the distress and safety channel, It used for establishing initial contact with a station and for emergency communications. Channel 16 is monitored during both dual watch and Tri-watch while standing by, you must monitor Channel 16.

1. Push [16/C] momentarily to select Channel 16.
2. Push [CH] to return to the channel used before Channel 16, or push [▼] or [▲] to select a channel.



#### Call Channel

Each regular channel group has separate leisure-use call channels. The call channel is monitored during Tri-watch. The call channels can be programmed and are used to store your most often used channel in each channel group for quick recall.

1. Push and hold [16/c] for 1.5 second to select the call channel of the selected channel group. "CALL" and call channel number appears.
2. Push [CH] to return to the channel used before call channel, or push [▼] or [▲] to select a channel.



#### Weather Channels

This transceiver has 10 pre-programmed weather channels. They are used for monitoring broadcasts.

1. Push [CH] to select weather channel or normal channel.
  - Appears "WX" when weather channel selected.
  - Appears "WX ALT" when turn on weather alert function.
2. Push [▼] or [▲] to select channel.



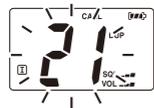
#### Call Channel Programming

Call channel is used to access Channel 16 (default : Channel 9), You can program the call channel with you most often-used channel in each channel group for quick recall.

1. Push [CH] to select a desired channel group to be programmed
2. Push [16/C] for 1sec. to select a call channel.
3. Push [16/C] for 3sec. till it sounds "BEEP" tone and "DUDU" tone to enter call channel programming mode.
  - Channel number blinks.



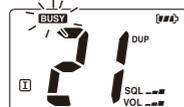
4. Push [▼] or [▲] to select desired call channel
5. Push [16/C] to confirm and save it , Push [CH] to cancel and exit.



## ■ Monitor Function

The monitor function opens the squelch.

- Push [MONI] to active monitor function.
- "BUSY" will blinks and sound while monitor function actives.



## ■ Volume Loud Function

The volume loud function temporarily maximizes the volume loud level , it has no effect when the volume level is 31.

1. Push [VOL/SQL] and [▲] to turn ON the function
2. Push [VOL/SQL] and [▲] to turn it OFF.

## ■ Volume Mute Function

The volume mute function can be activated temporarily.

1. Push [VOL/SQL] and [▲] to active .
  - The audio is muted
  - The volume level indicator start blinking
2. Push [VOL/SQL] and [▲] to turn the volume mute function off.

## ■ Automatic Backlight

This function is convenient for night time operation. The automatic backlighting can be activated in set mode.

- Push any key except for [PTT] to turn the backlighting ON.
- The backlighting is automatically turned OFF after 5 seconds.of inactivity.

## ■ Lock Function

This function electronically lock all keys (except for [PTT][▼][▲][VOL/SQL][])to prevent accidental changing of the channel and function access.

- Push and hold[]for 1 seconds.to turn the function ON and OFF.



## ■ Vibration Water Draining Function

This transceiver uses a new technology to clear water away from the speaker grill: Vibration. Vibration helps drain water away from the speaker housing (water that might otherwise muffle the sound coming from the speaker).

This transceiver emits a vibrating beep when this function is activated.

- Push and hold [SCAN]and [HI/LO]
- A low beep tone sounds for 9 seconds to drain water, regardless of volume level setting
- The transceiver does not perform key operations while the Vibration function is activated. The Vibration function can not be activated when an optional speaker-microphone is connected.

# 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.

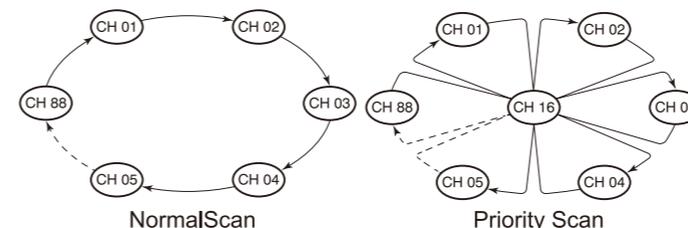
In addition, the weather alert and auto scan functions are available for stand-by convenience. These functions can be activated simultaneously, depending on the setting in set mode.

### NormalScan

It 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.

### Priority Scan

A priority scan sequentially searches through all TAG channels while monitoring Channel 16. when a signal is detected on Channel16, the scan pauses until the signal disappears; when a signal is detected on a channel other than Channel 16, the scan switches to Dualwatch, until the signal disappears.



## ■ Setting TAG Channels

For more efficient scanning, set the desired channels as TAG channels or clear the TAG setting from unwanted channels. Channels that are not tagged will be skipped during scanning.

### ◆ Setting (or clearing) a TAG channel

1. Push [CH] to select desired channel group.
2. Push [▼] or [▲] to select the desired channels to be set as a TAG Channel.
3. Push and hold " [TAG] " for 1 second. to set the displayed channel as a TAG Channel.
  - " [TAG] " appears in the function display.
4. To cancel the TAG channel setting, push and hold " [TAG] " for 1sec.
  - " [TAG] " disappears.

### ◆ Setting (or clearing) all tagged channels

1. While pushing and holding [TAG], turn power [ ] ON to clear all TAG channels in the selected channel group.
2. Repeat above procedure to set all channels as TAG channels.

## ■ Starting a Scan

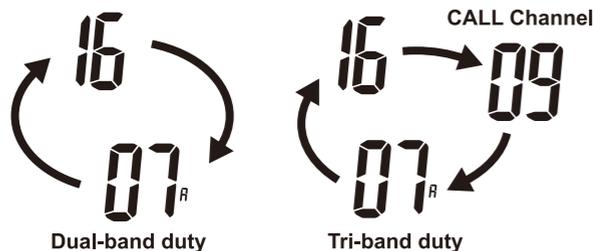
Set the priority scan function, scan resume timer and auto scan function is advance, in the set mode.

1. Push [SCAN] to start normal scan or priority scan.
  - "SCAN" Blinks.
  - "16" appears on the sub channelreadout during a priority scan.
  - When a signal is received, the scan pauses until the signal disappears, or resumes after pausing 5 seconds, dependeding on the set mode setting.
  - Push [▼]or[▲] to sequentially select TAG channels, change the scanning direction or manually resume the scan.
2. Pus[SCAN]to stop the scan, or push [PTT],[16/C], [CH]or[FAV]also can stop the scan.

## DUALWATCH/TRI-WATCH

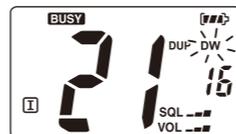
### ■ Description

Dualwatch monitors Channel 16 while you are receiving on another channel; Tri-watch monitors Channel 16 and the call channel while receiving another channel. Dualwatch/Tri-watch is convenient for monitoring channel 16 when you are operating on another channel.

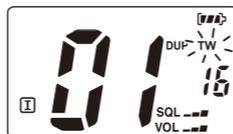


### ■ Operation

- Push [SCAN/DUAL] for 1 second to start dual watch or tri-watch.
  - "DW" blinks during dual watch;" TW" blinks during Tri-watch.
  - A beep tone sounds when a signal is received on Channel 16.
  - Tri-watch switches to dualwatch when receiving a signal on the call channel.
- Push [SCAN/DUAL] to cancel dualwatch/tri-watch.



Dual-band duty



Tri-band duty

## SET MODE

### ■ Set Mode Programming

The set mode is used to channel the settings of transceiver's functions: beep tone function, priority scan function, scan resume timer, auto scan function, dual/tri-watch function, monitor key action, automatic backlighting, LCD contrast setting and power save function.

#### ◆ Set Mode Operation

- Turn OFF the power.
- While holding down [VOL/SQL], turn ON the power to enter the set mode
- Release [VOL/SQL], appears "Bp"
- Push [VOL/SQL] to select a desired option of the item.
- Push [▲][▼] to select a desired option of the item.
- To exit the set mode, push [16/C]

No.	Show	Set Project	Set parameter options	The default value
1	bP	Beep	of / on	on
2	AL	Weather Warning	of / on	of
3	Pr	Priority Scan	of / on	of
4	St	Scan Resume Timer	of / on	of
5	AS	Automatic Scanning	of / on	of
6	dt	Dual-band / Tri-band Duty	d-/t-	d-
7	Sq	Monitor key Functions	Pu / Ho	Pu
8	bL	Automatic Backlight	of / on	on
9	LC	LCD Contrast	Hi / Lo	Hi
10	PS	Automatic Power	of / on	on

### ■ Set Mode Items

#### ◆ Beep Tone Function

Turn the key touch beep sound ON or OFF.

#### ◆ Weather Alert

When there are significant weather information, the U.S. NOAA broadcast stations will transmit an alarm weather. When the weather alert function is turned on, walkie-talkies will sound the alarm at the same time "WXALT" symbol flashes. During the scan, the current weather channel in use will be scanned.

- With this function enabled, when you select the Weather Channel, the screen displays "WX ALT" symbol.

#### ◆ Priority Scan Function

The transceiver has 2 scan types—normal (OFF) and priority (ON) scan. A normal scan searches all TAG channels in the selected channel group. A priority scan sequentially searches all TAG channels while monitoring Channel 16.

#### ◆ Scan Resume Time

The scan resume timer can be set as a pause (OFF) or timer scan (ON).

- OFF:** when a signal is detected, the scan pauses on the channel until the signal disappears, and then resumes.
- ON:** When a signal is detected, the scan pauses on the channel for 5 seconds. and then resumes.

#### ◆ Auto Scan Function

The auto scan function automatically starts a normal or priority scan when

no signal is received, and no operation is performed for 30 seconds.

### ◆ Dual/Tri-watch Function

Set the watch type to Dualwatch or Tri-watch.

### ◆ Monitor Key Action

The monitor key temporarily opens the squelch. This item sets the key action.

- Pu(PUSH): The monitor function is activated by holding down [MONI]. The squelch open while holding down the key.
- Ho(Hold): The monitor function is activated by holding down [MONI] for 1 second, the squelch stays open until any key is pushed.

### ◆ Automatic Backlighting

This function is convenient for night-time operation. The backlight can be selected from ON and OFF.

- The backlighting is automatically turned OFF after 5 seconds. of in-activity.

### ◆ LCD Contrast Setting

Set the LCD contrast level to high contrast or Low contrast.

- The LCD contrast level has little effect during indoor use.

### ◆ Power Save Function

The power save function reduces current drain by turning OFF the receiver circuit for preset intervals.

- **OFF:** Function is turned OFF
- **ON:** Function is turned ON and will be activated when no signal is received, and no operation is preformed for 5seconds.

## ■ VHF Marine Channel List

Channel number		Frequency(MHz)			Channel number		Frequency(MHz)			Channel number		Frequency(MHz)			Channel number		Frequency(MHz)		
USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive	USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650		21	21	157.050	161.650	68	68	68	156.425	156.425	86A			157.325	157.325
01A			156.050	156.050	21A		21A	157.050	157.050	69	69	69	156.475	156.475	87	87	87	157.375	161.975
	02	02	156.100	160.700			21b	RX only	161.650	70	70	70	RX only	156.525	87A	87A	87A	157.375	157.375
	03	03	156.150	160.750			22		161.700	71	71	71	156.575	156.575	88	88	88	157.425	162.025
03A			156.150	156.150	22A		22A	157.100	157.100	72	72	72	156.625	156.625	88A	88A	88A	157.425	157.425
	04		156.200	160.800		23	23	157.150	161.750	73	73	73	156.675	156.675					
		04A	156.200	156.200	23A			157.150	157.150	74	74	74	156.725	156.725					
	05		156.250	160.850	24	24	24	157.200	161.800	75*1	75*1	75*1	156.775	156.775					
05A		05A	156.250	156.250	25	25	25	157.250	161.850	76*1	76*1	76*1	156.825	156.825					
06	06	06	156.300	156.300			25b	RX only	161.850	77*1	77	77*1	156.875	156.875					
	07		156.350	160.950	26	26	26	157.300	161.900		78		156.925	161.525					
07A		07A	156.350	156.350	27	27	27	157.350	161.950	78A		78A	156.925	156.925					
08	08	08	156.400	156.400	28	28	28	157.400	162.000		79		156.975	161.575					
09	09	09	156.450	156.450			28b	RX only	162.000	79A		79A	156.975	156.975					
10	10	10	156.500	156.500		60	60	156.025	160.625		80		157.025	161.625					
11	11	11	156.550	156.550		61		156.075	160.675	80A		80A	157.025	157.025					
12	12	12	156.600	156.600	61A		61A	156.075	156.075		81		157.075	161.675					
13*1	13	13*1	156.650	156.650		62		156.125	160.725	81A		81A	157.075	157.075	<b>Weather Channel!</b>	<b>Frequency(MHz)</b>			
14	14	14	156.700	156.700			62A	156.125	156.125		82		157.125	161.725	1		RX only	162.550	
15*1	15*1	15*1	156.750	156.750			63	156.175	160.775	82A		82A	157.125	157.125	2		RX only	162.400	
16	16	16	156.800	156.800	63A			156.175	156.175		83	83	157.175	161.775	3		RX only	162.475	
17*1	17	17*1	156.850	156.850		64	64	156.225	160.825	83A		83A	157.175	157.175	4		RX only	162.425	
	18		156.900	161.500	64A		64A	156.225	156.225			83b	RX only	161.775	5		RX only	162.450	
18A		18A	156.900	156.900		65		156.275	160.875	84	84	84	157.225	161.825	6		RX only	162.500	
	19		156.950	161.550	65A	65A	65A	156.275	156.275	84A			157.225	157.225	7		RX only	162.525	
19A		19A	156.950	156.950		66		156.325	160.925	85	85	85	157.275	161.875	8		RX only	161.650	
20	20	20*1	157.000	161.600	66A	66A	66A*1	156.325	156.325	85A			157.275	157.275	9		RX only	161.775	
20A			157.000	157.000	67*1	67	67	156.375	156.375	86	86	86	157.325	161.925	10		RX only	163.275	

\*Only a low power.

## SPECIFICATION

General	
Frequency Range	TX: 156.025 – 157.425MHz
	RX: 156.000 – 163.425MHz
Type of Emission	FM ( 16K0G3E )
Battery Pack	1500mAh Li-ion (DC 3.7V)
Frequency Stability	± 10 PPM
Operating Temperature Range	-15°C ~ +55°C
Antenna Impedance	50
Dimensions (H × W × D)	140mm × 65mm × 41mm
Weight	247g

Transmitter	
Output Power	5W/1W
Maximum Frequency Deviation	± 5kHz
Spurious Emissions	0.25uW
Adjacent Channel Power	≥ 70dB
Audio Harmonic Distortion	≤ 10%
Current Drain	≤ 1.5A(High power) ≤ 0.9A (Low power) ≤ 0.35A (Max audio output)

Receiver	
Receive Sensitivity	≤ 0.22 μ V
Squelch Sensitivity	≤ 0.22 μ V
HUM and Noise	≥ 40dB
Adjacent Channel Selectivity	≥ 70dB
Spurious Response	≥ 70dB
Intermodulation	≥ 68dB
Audio Output Power	≥ 0.6W (10%)

Issues described in the following table are some common operational failure .

## TROUBLESHOOTING

These types of errors are generally due to improperly connected , the operation caused by incorrect settings , or operator error caused due to incomplete programming . These problems are usually not caused by circuit failure . Before suspect intercom failure, please refer to the relevant section of this manual .

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
The transceiver does not turn ON.	<ul style="list-style-type: none"> <li>The battery is exhausted.</li> <li>The battery pack is not correctly inserted.</li> </ul>	<ul style="list-style-type: none"> <li>Recharge the battery pack.</li> <li>Correctly insert the battery pack.</li> </ul>	<ul style="list-style-type: none"> <li>1</li> <li>2</li> </ul>
No sound from speaker.	<ul style="list-style-type: none"> <li>The squelch level is too high.</li> <li>Volume level is too low.</li> <li>Speaker has been exposed to water.</li> </ul>	<ul style="list-style-type: none"> <li>Set the squelch level to the threshold level.</li> <li>Adjust the audio level to a suitable level.</li> <li>Remove water from the speaker grill.</li> </ul>	<ul style="list-style-type: none"> <li>5、 6</li> <li>1</li> <li>5</li> <li>6</li> </ul>
Transmitting is impossible, or high power can not be selected.	<ul style="list-style-type: none"> <li>Some channels are limited to low power</li> <li>or only receive.</li> <li>The output power is set to low.</li> <li>The battery is exhausted.</li> </ul>	<ul style="list-style-type: none"> <li>Change the channel.</li> <li>Push [Hi/Lo] to select high power.</li> <li>Recharge the battery pack.</li> </ul>	<ul style="list-style-type: none"> <li>7</li> </ul>
The displayed channel cannot be changed.	<ul style="list-style-type: none"> <li>The Lock function is activated.</li> </ul>	<ul style="list-style-type: none"> <li>Hold down [  ] (Hi/Lo) for 1 second to turn OFF the function.</li> </ul>	<ul style="list-style-type: none"> <li>9</li> </ul>
Scan does not start	<ul style="list-style-type: none"> <li>"TAG"channels are not programmed.</li> </ul>	<ul style="list-style-type: none"> <li>Set desired channels as "TAG" channels.</li> </ul>	<ul style="list-style-type: none"> <li>6</li> <li>6</li> </ul>
No beep sounds.	<ul style="list-style-type: none"> <li>Beep Tone function is turned OFF.</li> </ul>	<ul style="list-style-type: none"> <li>Turn ON the Beep Tone in the set mode.</li> </ul>	<ul style="list-style-type: none"> <li>11</li> </ul>