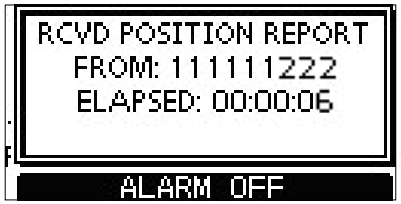
◆ Transmit Position Report Reply Call

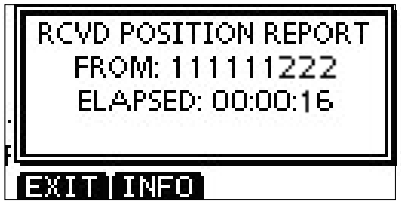
The radio will transmit a position report reply call while a position report call is received.

Quick ACK

1. While receiving individual call, a prompt sound emits and the screen is showed as below. Press [ALARM OFF] to turn OFF the prompt sound.

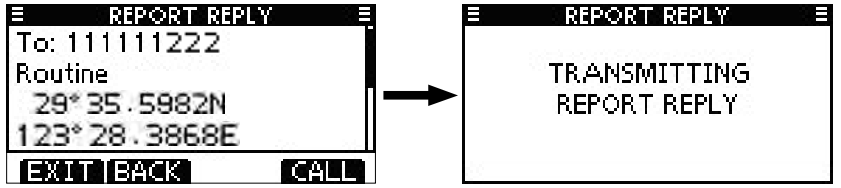


2. Press the softkey [ACK].



- Press [INFO] to show the received position request call information.
- Press [BACK] to return to last interface.

3. A position report reply confirmation interface appears. Press [CALL] to transmit reply call.
4. The screen shows as below after transmitting position reply call. Then return to normal operating mode.

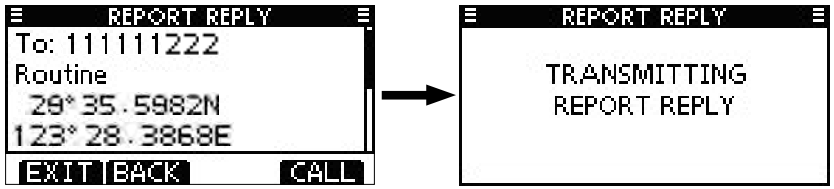


Manual Reply

1. Enter the "POSITION REPORT REPLY" in DSC CALLS menu.
   - The "POSITION REPORT REPLY" will not be shown if no position request call is received.

2. Press [▲]/[▼] to select desired position report call to reply and then press [OK].

3. The position report reply call confirmation interface is shown as below. Press [CALL] to transmit position reply call.
4. The screen is shown as below after a position report reply call is transmitted and then return to normal operating mode.

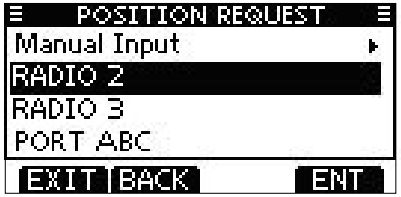


■ Polling Request Call

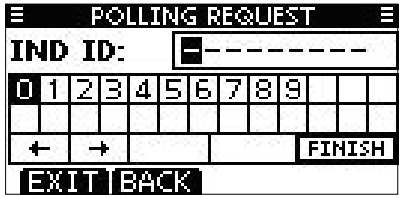
Transmit a polling report call while you want to know if a specific ship is in the communication area or not.

◆ Transmit Polling Request Call

1. Enter "POLLING REQUEST" in DSC CALLS menu.
2. Press [▲]/[▼] to select the desired preprogrammed individual address or select "Manual Input" and then press [OK].
   - The individual call ID code should be set first.
   - Set desired 9 digits MMSI code for individual code while selecting "Manual Input".

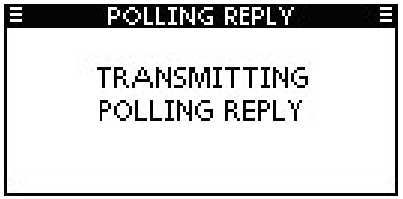


※ Manual Input
Input the desired individual call ID as the following way.
- Press [◄]/[►] to select desired number.
- Press [OK] to confirm.
- Move the cursor to select "←" or "→". Then press [OK].
- If the first digit is "0", it is regard as Group ID.
- If the first two digits is "0", it is regard as Coast Station ID.

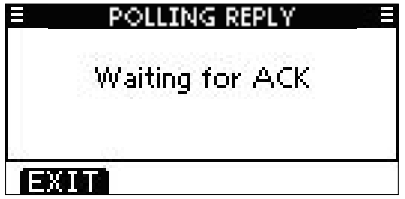


3. A confirmation interface appears to confirm the call contents.

4. Press [CALL] to transmit polling request call.
   - If Channel 70 is busy, the radio will standby until channel leisure.

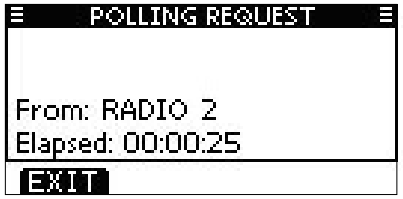


5. The screen is shown as below after a polling request call is transmitted.
   - The radio waits in Channel 70 for 10 seconds and then alternately monitors Channel 70 and the operating channel.



6. When the acknowledgement call is received, a prompt sound emits and the screen is showed as below.

7. Press [ALARM OFF] to turn OFF the prompt sound. The screen is shown as below.



8. Press [BACK] to return to normal operating mode.

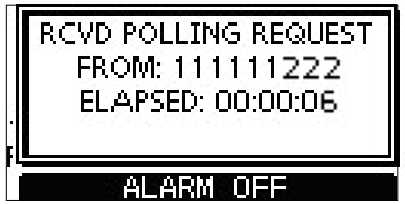
◆ Receive Polling Request Call

While receiving polling request call:

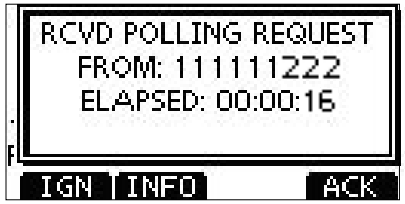
→ The emergency alarm emits for 2 minutes.

→ "RCVD POLLING REQUEST" appears. The backlight may flash for 2 minutes according to the received category.

1. Press [ALARM OFF] to stop alarm and backlight flash.
   - The next interface will appear according to received category if no press [ALARM OFF] in 2 minutes.



2. Press softkey to select desired operation.



※ Press [IGN] to ignore and return to normal operating mode.
   - The radio exits DSC mode.
   - " ✉ " continues to flash and the call is stored in the received call record.

※ Press [INFO] to show the received call information.

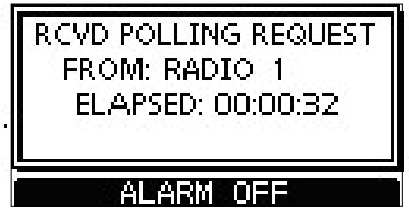
※ Press [ACK] to show "POLLING REPLY" and send reply call.
   - When the "POSITION ACK" is set as "Auto TX", the radio will reply call automatically. In this situation, the transmit and receive call will be stored in call record.

◆ Transmit Polling Reply Call

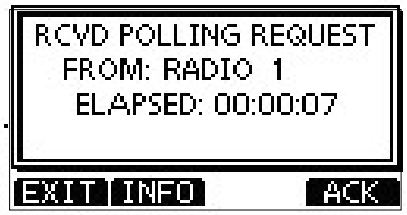
The radio will transmit a polling reply call while a polling request reply call is received. When the "POSITION ACK" in DSC Settings is set as "Auto TX", the radio will transmit polling reply call automatically after polling request call is received.

Quick ACK

1. While receiving polling request call, a prompt sound emits and the screen is showed as below.
   - Press [ALARM OFF] to turn OFF the prompt sound.

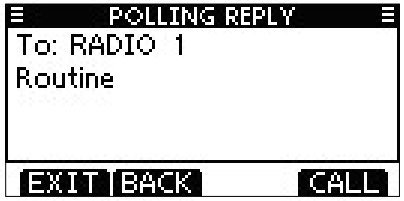


2. Press the softkey [ACK].

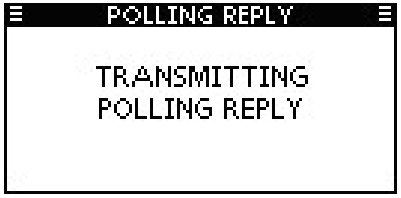


- Press [INFO] to show the received polling request call information.
- Press [BACK] to return to last interface.

3. A polling reply confirmation interface appear. Press [CALL] to transmit polling reply call.



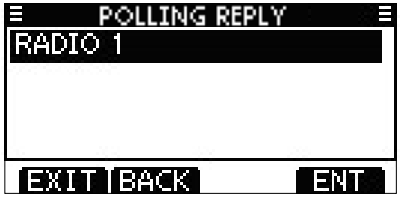
4. The screen shows as below after transmitting polling reply call. Then return to normal operating mode.



Manual Reply

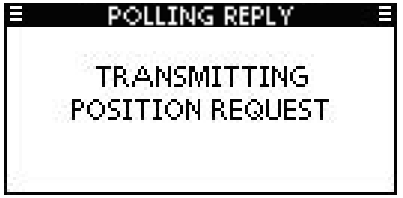
1. Enter the "POLLING REPLY" in DSC CALLS menu.
   - The "POLLING REPLY" will not be shown if no polling request call is received.

2. Press [▲]/[▼] to select desired polling request call to reply and then press [OK].



3. The polling reply call confirmation interface is shown as below. Press [CALL] to transmit polling reply call.

4. The screen is shown as below after a polling reply call is transmitted and then return to normal operating mode.

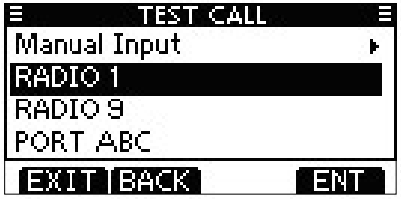


■ Test Call

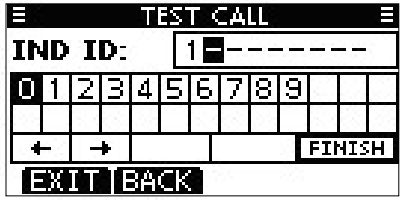
Avoid testing in the exclusive DSC distress and safety calling channels. If testing in the distress/safety channel, you should indicate these calls are for testing. Normally, the test call no need further communications between the two stations.

◆ Transmit Test Call

1. Enter "TEST CALL" in DSC CALLS menu.
2. Press [▲]/[▼] to select the desired preprogrammed individual address or select "Manual Input" and then press [OK].
   - The individual call ID code should be set first.
   - Set desired 9 digits MMSI code for individual code while selecting "Manual Input".



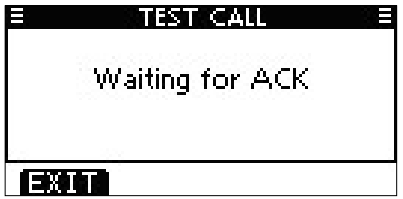
※ Manual Input
Input the desired individual call ID as the following ways.
- Press [◄]/[►] to select desired number.
- Press [OK] to confirm.
- Move the cursor to select "←" or "→". Then press [OK].
- If the first digit is "0", it is regard as Group ID.
- If the first two digits is "0", it is regard as Coast Station ID.



3. A confirmation interface appears to confirm the call contents.

4. Press [CALL] to transmit test call.
   - If Channel 70 is busy, the radio will standby until channel leisure.

5. The screen is shown as below after a test call is transmitted.
   - The radio waits in Channel 70 for 10 seconds and then alternately monitors Channel 70 and the operating channel.



6. When the acknowledgement call is received, a prompt sound emits and the screen is showed as below.

7. Press [ALARM OFF] to turn OFF the prompt sound. The screen is shown as below.

8. Press [BACK] to return to normal operating mode.

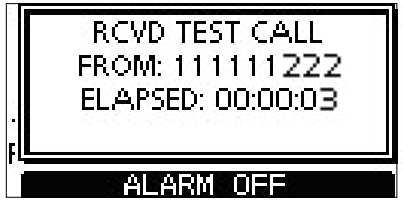
◆ Receive Test Call

While receiving test call:

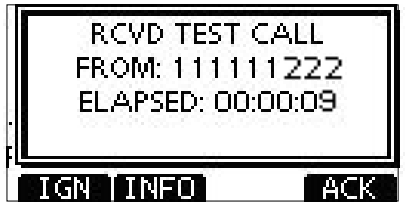
→ The emergency alarm emits for 2 minutes.

→ "RCVD TEST CALL" appears. The backlight may flash for 2 minutes according to the received category.

1. Press [ALARM OFF] to stop alarm and backlight flash.
   - The next interface will appear according to received category if no press [ALARM OFF] in 2 minutes.



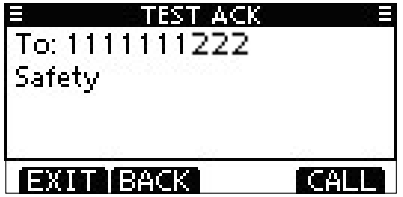
2. Press softkey to select desired operation.



※ Press [IGN] to ignore and return to normal operating mode.
   - The radio exits DSC mode.
   - "✉" continues to flash and the call is stored in the received call record.

※ Press [INFO] to show the received call information.

※ Press [ACK] to show "TEST ACK" and send reply call.
   - When the "TEST ACK" is set as "Auto TX", the radio will reply call automatically. In this situation, the transmit and receive call will be stored in call record.



◆ Transmit Test Acknowledgement Call

When the "TEST ACK" in DSC Settings is set as "Auto TX", the radio will transmit test reply call automatically after test call is received.

Quick ACK

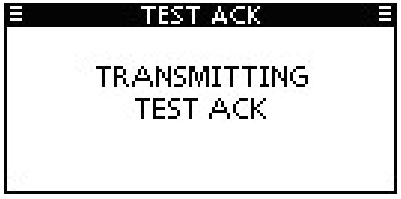
1. While receiving test call, a prompt sound emits and the screen is showed as below.
   - Press [ALARM OFF] to turn OFF the prompt sound.

2. Press the softkey [ACK].

- Press [INFO] to show the received test call information.
- Press [BACK] to return to last interface.

3. A test ACK confirmation interface appears. Press [CALL] to transmit test acknowledgement call.

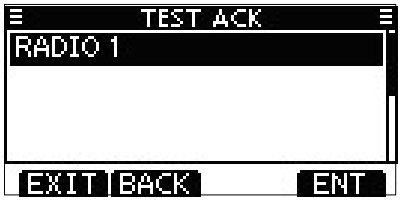
4. The screen shows as below after transmitting test acknowledgement call. Then return to normal operating mode.



Manual Reply

1. Enter the "TEST ACK" in DSC CALLS menu.
   - The "TEST ACK" will not be shown if no test call is received.

2. Press[▲]/[▼]to select desired test call to reply and then press [OK].



3. The test ACK confirmation interface is shown as below. Press [CALL] to transmit test acknowledgement call.

4. The screen is shown as below after a test acknowledgement call is transmitted and then return to normal operating mode.

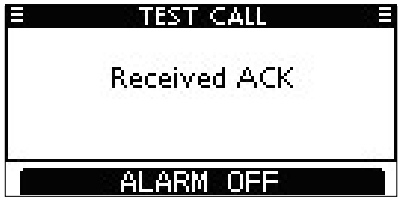
◆ Receive Test Acknowledgement Call

While receiving test acknowledgement call:

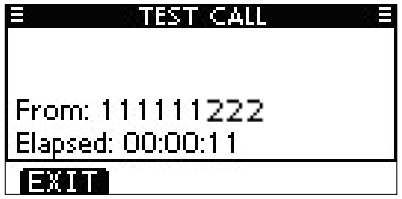
→ The emergency alarm emits for 2 minutes.

→ "RCVD TEST ACK" appears. The backlight may flash for 2 minutes.

1. Press [ALARM OFF] to stop alarm and backlight flash.
   - The next interface will appears according to received category if no press [ALARM OFF] in 2 minutes.



2. Press softkey to select desired operation.



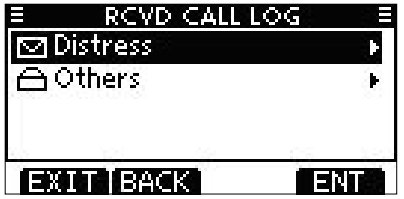
※ Press [EXIT] to return to normal operating mode.
- The radio exits DSC mode.
- "✉" continues to flash and the call is stored in the received call record.

■ Received Call Log

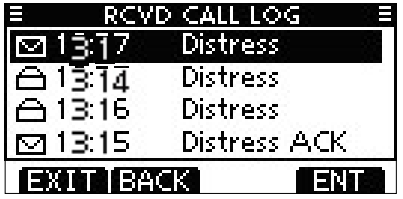
The radio can store up to 50 distress messages and 50 other massages. They can be used as supplement.
In normal operating mode, if there are unread massages, "✉" flashes on the screen right side.

◆ Distress Message

1. Press [LOG] to enter "RCVD CALL LOG" in DSC CALLS menu.
2. Press [▲]/[▼] to select "DISTRESS" and then press [OK].
   - The distress messages are stored in "Distress".
   - "✉" appears if there are unread messages.
   - "🖂" appears if there are no unread messages.
   - Nothing appears if there are no messages.



3. Press [▲]/[▼] to select desired item and then press [OK].
   - The message in the unopened file has not been read.

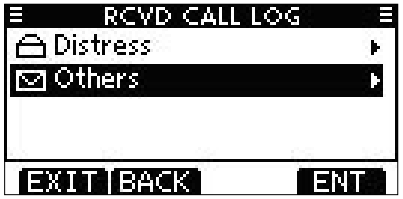


4. Press [▲]/[▼] to scroll the massage contents.
   - Press [WP] to store received position.

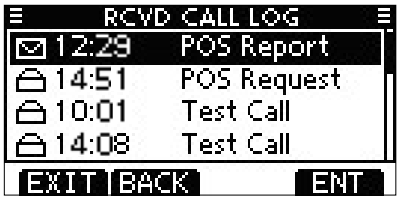
5. Press [DEL] to delete displayed information.
   - The confirmation screen appears and then press [OK] to delete.
6. Press [EXIT] to return to the normal operating mode.

◆ Other Messages

1. Press [LOG] to enter "RCVD CALL LOG" in DSC CALLS menu.
2. Press [▲]/[▼] to select "Others" and then press [OK].
   - The messages except distress are stored in "Other".
   - "✉" appears if there are unread messages.
   - "🖂" appears if there are no unread messages.
   - Nothing appears if there are no messages.



3. Press [▲]/[▼] to select desired item and then press [OK].
   - The message in the unopened file has not been read.



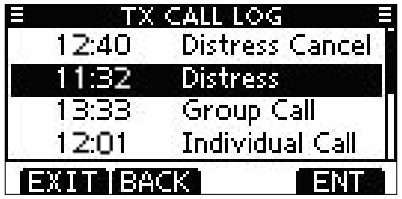
4. Press [▲]/[▼] to scroll the massage contents.
   - The stored message has various information, depending on the DSC call type.
   - Press [WP] to store received position.

5. Press [DEL] to delete displayed information.
   - The confirmation screen appears and then press [OK] to delete.
6. Press [EXIT] to return to the normal operating mode.

■ Transmitted Call Log

The radio can store up to 50 transmitted calls and they can be used as log supplement.

1. Enter "RX CALL LOG" in DSC CALLS menu.
2. Press [▲]/[▼] to select desired item and then press [OK].



3. Press [▲]/[▼] to scroll the massage contents.

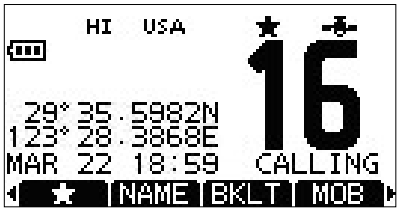
4. Press [DEL] to delete displayed information.
   - The confirmation screen appears and then press [OK] to delete.
5. Press [EXIT] to return to the normal operating mode.

■ MOB (Man OverBoard)

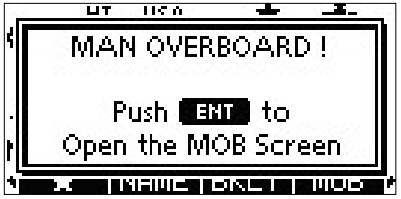
The radio can register an MOB (Man OverBoard) point with its position data while a person has fallen into water and need rescue.

◆ Store a MOB point

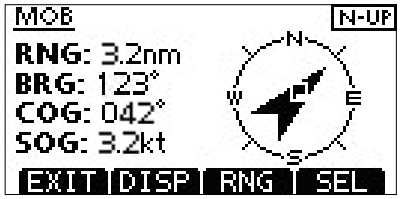
1. Press [MOB] for 1 second to store MOB point.
   - Two prompt sound emits.
   - "MAN OVERBOARD" appears after memorizing MOB point.
   - The MOB point cannot be stored if the GPS receiver has not yet calculated the position.
   - Only one MOB point can be memorized. The previous stored point will be overwritten while a new MOB point is stored.



2. After the information screen appears, press [ENT] to open the MOB interface and then the navigation will start from stored point.
   - If no key operation is performed in 10 seconds, the radio will return to last interface; Or press any key to return manually.

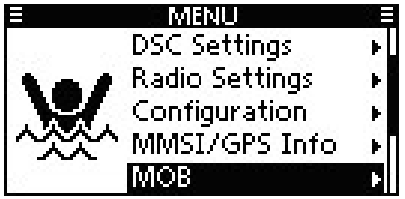


3. Press [EXIT] to exit the navigation screen and return to the normal operating mode.

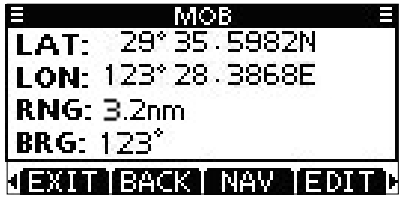


◆ Check the Stored MOB point

1. Press [MENU] to enter menu interface.
2. Press [◄]/[►] to select "MOB" and enter MOB interface.
   - MOB interface appears.
   - Press [MOB] also opens the interface.
   - A blank screen appears if the MOB point has not been stored or has been deleted.



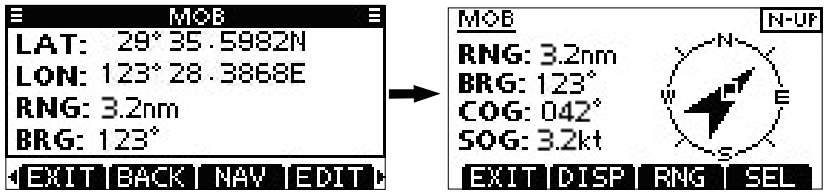
3. Press softkey to select desired operation.



   - Press [EXIT] to return to normal operating mode.
   - Press [BACK] to return to menu interface.

◆ Start Navigation to MOB point

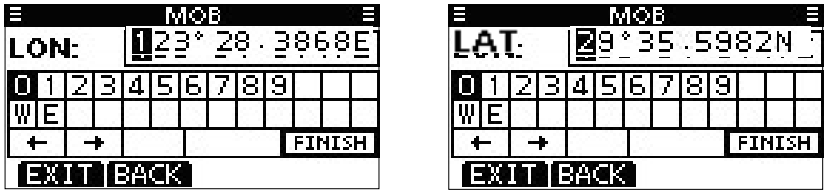
- Press [NAV] to navigate to MOB point.



◆ Edit MOB point

Press [EDIT] to change the stored MOB position.

1. Press [EDIT] to enter position data editing interface.
2. Edit specified latitude and longitude data as the following ways.
   - Press [▲]/[▼]/[◄]/[►] to select desired number.
   - Press [OK] to set digit.
   - Select N (North Latitude) or S (South Latitude) when the cursor is on the "N" or "S" position.
   - Select W (West Longitude) or E (East Longitude) when the cursor is on the "W" or "E" position.
   - Move the cursor to select "←" or "→". Then press [OK].
   - Select "FINISH" to set interface data and then press [OK].

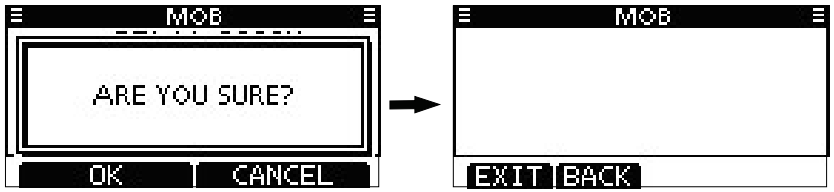


3. Press [OK] to save position data after the confirmation interface appears and return to the MOB interface.

◆ Delete MOB point

Press [DEL] to delete the stored MOB position.
NOTE: A deleted MOB point cannot be restored.

1. Press [DEL] to delete MOB point.
   - "ARE YOU SURE?" appears in the confirmation interface.
2. Edit specified latitude and longitude data as the following way.
   - Press [OK] to delete data and return to MOB interface.



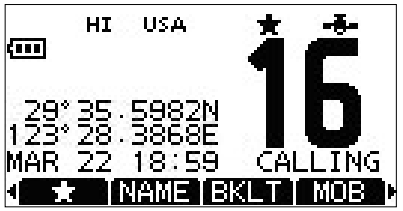
- A blank screen appears.
- Press [EXIT] to return to normal operation mode.
- Press [BACK] to return to menu interface.

■ Waypoint

The radio can store vessel's position at any time and also regard the received DSC call of vessel position information as a waypoint. The radio can store up to 50 waypoints. Each watpoint can be named by alphabet or numbers for easy recognition. The name can be maximum 10 characters.

◆ Store Position

- Press [WP] for 1 second to store waypoint.
- Two prompt sound emits.
- "WAYPOINT WAS STORED" appears after memorizing waypoint.
- The waypoint cannot be stored if the GPS receiver has not yet calculated the position.
- The new waypoint cannot be stored if already store 50 waypoints.



◆ Store Received Position

Register the received DSC call position as a waypoint.

1. Enter "RCVD CALL LOG" in DSC CALLS menu.

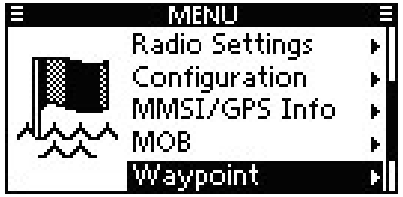
- Press [LOG] also to enter this interface.

2. Press [▲]/[▼] to select "Distress" or "Others" and then press [OK].
3. Press [▲]/[▼] to select desired item and then press [OK].
4. Press [WP] to store and "STORE WAYPOINT?" appears.

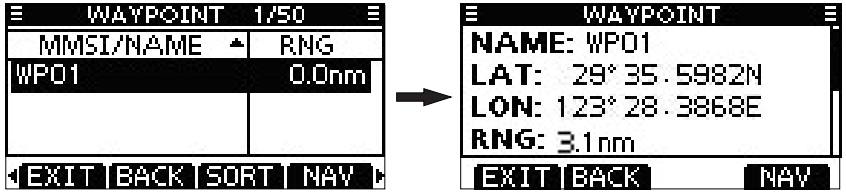
5. Press [OK] to register the received position as a waypoint.
   - The new waypoint cannot be stored if already store 50 waypoints.
   - The stored received position information include MMSI ID code and waypoint name. If the ID code has been programmed in individual address, the position name will replace the ID code.

◆ Check the Stored Waypoint

1. Press [MENU] to enter menu interface.
2. Press [▲]/[▼] to select "Waypoint" and enter waypoint list interface.
   - Press [WP] also enters the waypoint list interface.

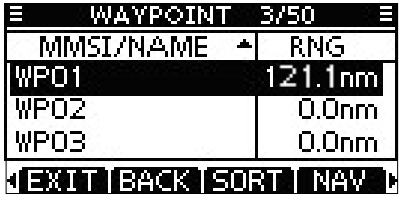


3. Press [▲]/[▼] to select desired waypoint and then press [OK] to open waypoint interface. Or press softkey to select the desired operation in the waypoint interface.



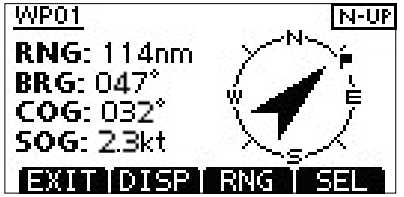
◆ Sort the Waypoint

- Press [SORT]. The radio can sort the waypoints in the waypoint list. Press [SORT] one time or more times to sort your desired waypoint order.



◆ Navigation to Waypoint

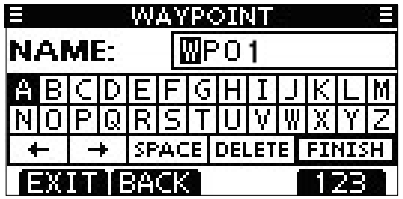
- Press [NAV] to start navigation to waypoint.



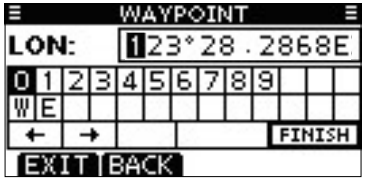
◆ Add Waypoint

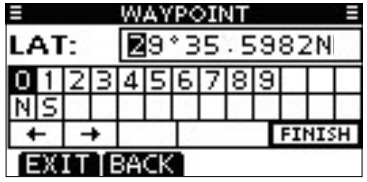
Press [ADD] to program the name and position data of the new waypoints manually.

1. Press [ADD] to enter the name programming interface. "WP01" appears as a default name.

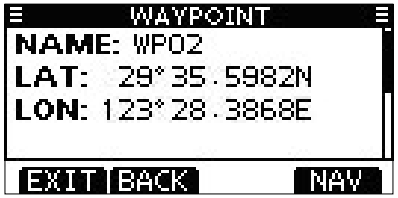


2. Input desired 10 digits ID as the following ways.
   - Press [▲]/[▼]/[◄]/[►] to select desired character.
   - Press [OK] to confirm.
   - Move the cursor, select "←" or "→". Then press [OK].
   - Press [123]/[!$?]/[ABC] to select character group.
3. After inputting name, press [▲]/[▼]/[◄]/[►] to select "FINISH". Press [OK] to confirm and enter position data programming interface.
   - The current position data appears on screen as the default.
   - Press [▲]/[▼]/[◄]/[►] to select desired number.
   - Select N (North Latitude) or S (South Latitude) when the cursor is on the "N" or "S" position.
   - Select W (West Longitude) or E (East Longitude) when the cursor is on the "W" or "E" position.
   - Move the cursor to select "←" or "→". Then press [OK].
   - Select "FINISH" to set interface data and then press [OK].





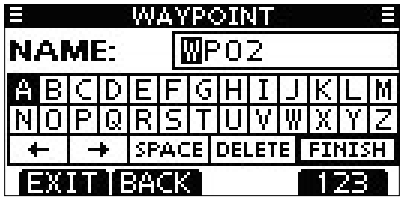
4. Press [OK] to save waypoint after the confirmation interface appears and return to the waypoint list interface.



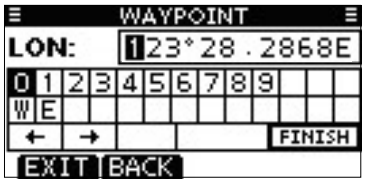
◆ Edit Waypoint

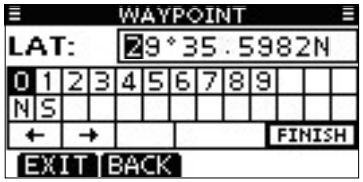
Press [EDIT] to change the stored waypoint name and position data.

1. Press [EDIT] to enter name programming interface. The preprogrammed name apppears.

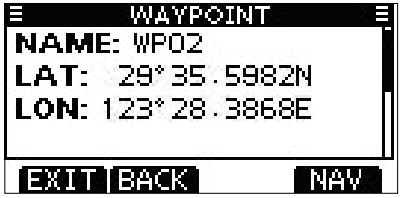


2. Edit the latitude and longitude data as the following way.
   - The preprogrammed position data apppears.
   - Press [▲]/[▼]/[◄]/[►] to select desired number.
   - Press [OK] to confirm digit setting.
   - Select N (North Latitude) or S (South Latitude) when the cursor is on the "N" or "S" position.
   - Select W (West Longitude) or E (East Longitude) when the cursor is on the "W" or "E" position.
   - Move the cursor to select "←" or "→". Then press [OK].
   - Select "FINISH" to set interface data and then press [OK].





4. Press [OK] to save waypoint after the confirmation interface appears and return to the waypoint list interface.



◆ Delete Waypoint

Press [DEL] to delete the stored waypoint.
NOTE: A deleted waypoint cannot be restored.

1. Press [DEL] to delete waypoint.
   - "ARE YOU SURE?" appears in the confirmation interface.

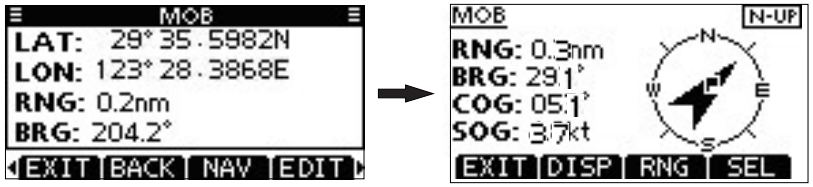
2. Press [OK] to delete data and return to waypoint list interface.

■ Navigation

The navigation function can navigate from your current position to the specified waypoint (including MOB point).
NOTE: The MOB point or waypoint has been registered first.

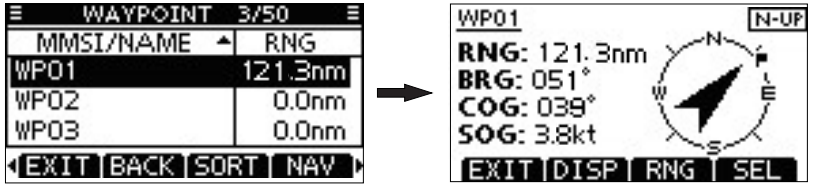
◆ Navigation to MOB Point

1. Press [MENU] to enter menu interface.
2. Press [▲]/[▼] to select "MOB" and enter MOB interface.
   - Press [MOB] also enters the MOB interface.
3. Press [NAV] to start navigation to MOB point.

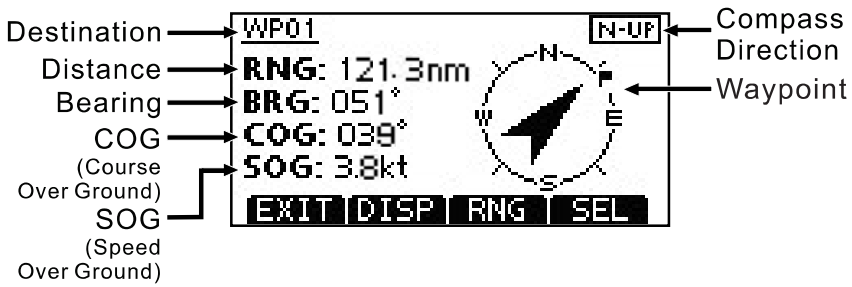


◆ Navigation to Waypoint

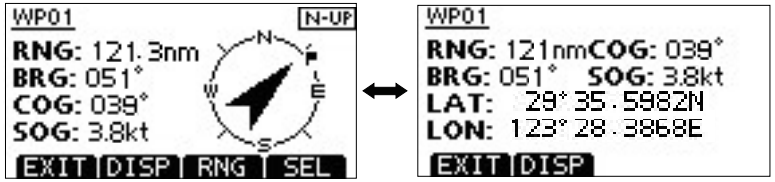
1. Press [MENU] to enter menu interface.
2. Press [▲]/[▼] to select "Waypoint" and enter waypoint list interface.
   - Press [WP] also enters the waypoint list interface.
3. Press [▲]/[▼] to select desired waypoint and then press [NAV] to start navigation to waypoint.



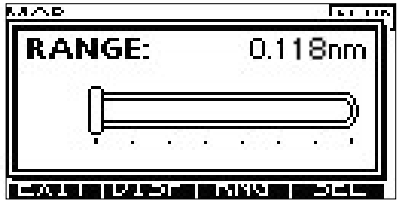
◆ Navigation Interface Description



1. Press [DISP] to switch display type. Two display types are selectable.



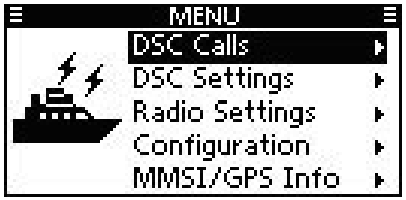
2. Press [RNG] to open the range setting window, then press [▲]/[▼]/[◄]/[►] to select desired range. Eight ranges are selectable. The range shows the radius of the compass circle.



3. Press [SEL] to select compass direction, N-UP, W-UP and AC-UP.
   - N-UP: The compass is always north.
   - W-UP: The compass is always the waypoint (destination).
   - AC-UP: The compass is always pointed to heading direction.
4. Press [EXIT] to return to normal operating mode.

■ Menu Interface Operation

The menu interface is used for programming infrequently changed values, function settings or sending DSC call.



◆ Enter Menu Interface Operation

1. Press [MENU] to enter menu interface.
2. Press [▲]/[▼] to select desired menu item and then press [OK] to confirm or enter the next level menu.
   - Repeat this operation to enter each menu item.
3. Press [CLEAR] or [BACK] to return to last level menu.
4. Press [EXIT] to exit menu interface.

■ Menu Items

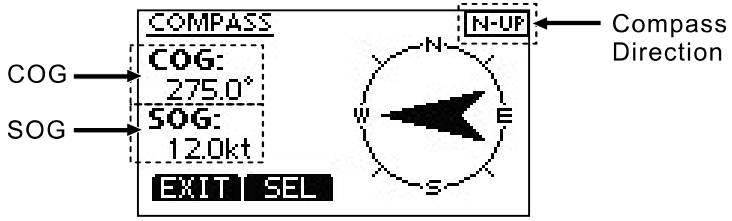
The menu screen contains the following items.

Main	Item	Ref.
DSC Call	Individual Call	22
	Individual ACK(NOTE 1)	24
	Group Call	25
	All Ships Call	26
	Distress Call	17
	Received Call Log	40
	Transmitted Call Log	41
	Position Request	28
	Position Report	31
	Polling Request	34
	Test Call	37
	Test ACK(NOTE 1)	38
DSC Setting	Position Input(NOTE 2)	13
	Individual ID	14、15
	Group ID	14、15
	Individual ACK	15、16
	Position ACK	15、16

■ Compass Interface

The compass interface shows the vessel's COG (Course Over Ground) and SOG (Speed Over Ground).

1. Press [COMP]. The screen is showed as below.

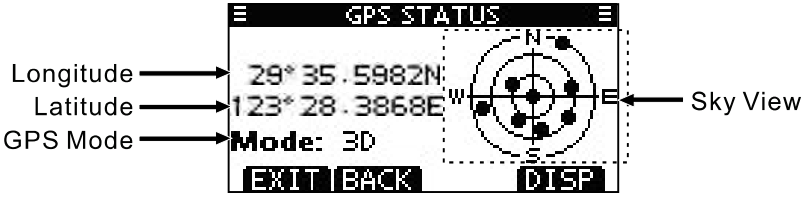


2. Press [SEL] to select compass direction, N-UP or AC-UP.
   - N-UP: The compass is always north.
   - AC-UP: The compass is always pointed to heading direction.
3. Press [EXIT] to return to normal operating mode.

■ GPS Status Interface

The GPS status interface shows the quantity, signal strength and position of he GPS satellites. The screen also shows the direction, elevation angle, satellite numbers and satellite signal strength.

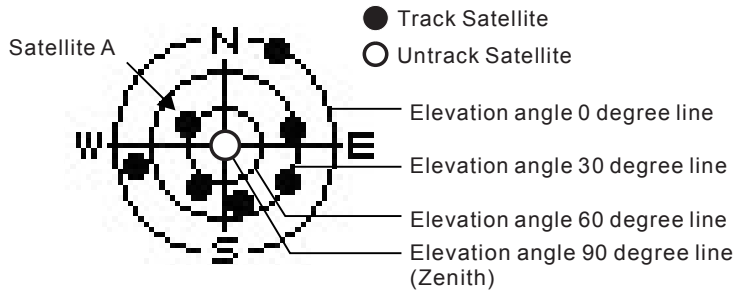
1. Press [MENU] to enter menu interface.
2. Press [▲]/[▼] to select "GPS Status" and then press [OK] to show the sky view screen.



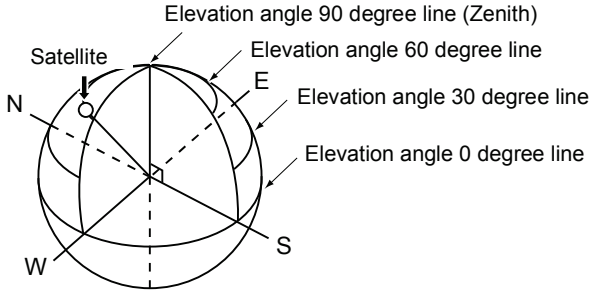
- Press [DISP] to switch between sky view and satellite signal.
- Press [BACK] to return to menu screen.
- Press [EXIT] to return to normal operating mode.

NOTE: "3D" appears while receiving more than 4 satellite signals. "2D" appears while receiving less than 3 satellites.

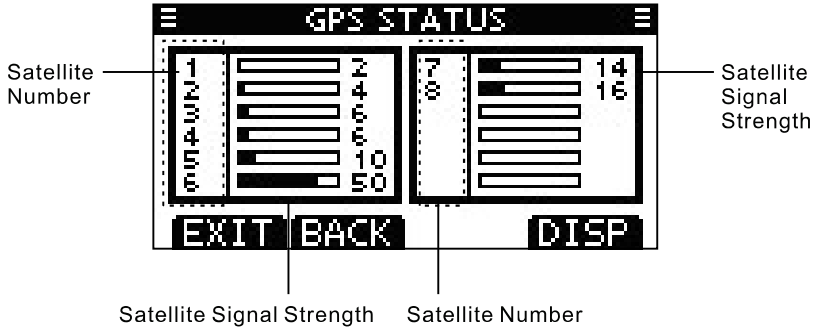
◆ Sky View



◆ Satellite Image



◆ Satellite Signal Strength Interface Description



Main	Item	Ref.
DSC Setting	Test ACK	15、16
	CH 16 Switch	16
	Alarm	16
	CH 70 SQL Level	16
	DSC Loop Test	17
	CH 70 Watch	17
Radio Setting	Scan Type	50
	Scan Timer	50
	Dual/Tri-Watch	50
	Channel Group	50
	WX Alert	50
Configuration	Backlight	51
	Display Contrast	51
	Key Beep	51
	Key Assignment	51
	UTC Offset	51
	Noise Cancel	51
	Inactivity Timer	51
	Float 'n Flash	51
	Monitor	51
	Unit	51

Main	Item	Ref.
MMSI/GPS Information	MMSI\LAT\LON\UTC\ SOG\COG\SW Ver	13
MOB	LAT\LON\RNG\BRG\ COG\SOG	42
Waypoint	NAME\LAT\LON\RNG\ BRG\COG\SOG	43
GPS Status	Sky view	47
	The image of the Satellite	47
	Satellite number\ signal power	47

NOTE 1: Appears only after receiving a call.
NOTE 2: "NO DSC MMSI" appears while MMSI code is not preset.

■ Set Items

S/N	Set Item	Set Item	Default
1	SCAN TYPE	Normal Scan Priority Scan	Normal Scan
2	SCAN TIMER	ON/OFF	OFF
3	DUAL/TRI-WATCH	Dualwatch Tri-watch	Dualwatch
4	CHAN GROUP	USA/INT/CAN	USA
5	WX ALERT	ON with Scan/ ON/OFF	OFF

◆ Scan Type

The radio has two scan types, normal scan and priority scan. The normal scan searches all TAG channels in selected channel group. The priority scan inserts scan Channel 16 during normal scan.

◆ Scan Timer

The scan timer can be selected as OFF or ON. While OFF is selected, the scan will pause until signal disappears. While ON is selected, the scan pause for 5 seconds and then resume, even if the signal is received on any channel other than Channel 16.

◆ Dual/Tri-Watch

This function can select dual watch or tri-watch.

◆ Channel Group

The channel group can be selected according to the operating area. USA, INT and CAN are selectable.

◆ Weather Alert

A NOAA broadcast station will transmit a weather alert sound while there is important weather information.
While the weather alert function is ON, "WX " flashes and the alert sound emits after receiving the alert. The current weather channel will be scanned during the scanning. "WX" appears while this function is ON.

- ON with Scan: The preprogrammed weather channels are sequentially checked during scanning.
- ON: The previously used weather channel is checked during scanning.
- OFF: The radio does not check weather channel alert sound.

■ Configuration Items

Configuration Item		Configuration Selection	Default
BACKLIGHT		Level 7/OFF	Level 4
DISPLAY CONTRAST		Level 1-8	Level 3
KEY BEEP		ON/OFF	ON
KEY ASSIGNMENT		Softkey 1	SCAN
		Softkey 2	DW
		Softkey 3	HI/LO
		Softkey 4	CH/WX
UTC OFFSET		-14:00~+14:00	00:00
NOISE CANCEL	RX	OFF/1/2/3	OFF
	TX	OFF/1/2/3	OFF
INACTIVITY TIMER	Not DSC Related	1-10 Minutes	10 Minutes
	DSC Related	1-15 Minutes	15Minutes
FLOAT'N FLASH	Function	ON/OFF	ON
	Auto OFF	0-30 Seconds	20 Seconds
	Cycle	0.5\1\2\4 Seconds	0.5 Seconds
	Alarm	ON/OFF	OFF
Monitor		Push/Hold	Push
Unit		Nautical Mile /Kilo-Meter	Nautical Mile

◆ Backlight

This function is better for night operation. Press any key (except PTT) to activate while the backlight function is ON.
The backlight can be set as 7 levels and OFF.

◆ Display Contrast

8 levels LCD display contrast are adjusted. Level 1 is the lowest and Level 8 is the highest.

◆ Key Beep

The key beep can be turn OFF to select silent operation or be turn ON.

◆ Key Assignment

The desired functions can be assigned to the softkeys.

1. Select "KEY ASSIGNMENT" in display interface. Press [▲]/[▼] to select desired setting softkey and then press [OK] to enter setting.
2. Press [▲]/[▼] to select desired function and then press [OK] to confirm setting.

◆ UTC Offset

The UTC offset can be adjusted between -14:00 and 14:00 in 1 minute step.

◆ Noise Cancel

Set the noise cancel function in both receive and transmit.

1. Select "NOISE CANCEL" in display interface. Press [▲]/[▼] to select RX or TX and then press [OK].
2. Press [▲]/[▼] to select the option and then press [OK] to confirm.
3. Press [EXIT] to exit the menu interface. Press [CLEAR] or [BACK] to return to last interface.

- **RX:** Turn the Noise Cancel Function ON or OFF.
- **TX:** Turn the transmit Noise Cancel Function ON or OFF.

◆ Inactivity Timer

There are two configuration items: (1) "Not DSC Related": Set the inactivity timer between 1 and 10 minutes or OFF. (2) "DSC Related": Set the inactivity timer between 1 and 15 minutes or OFF.

1. Select "INACTIVITY TIMER" in display interface. Press [▲]/[▼] to select "Not DSC Related" or "DSC Related" and then press [OK].
2. Press [▲]/[▼] to select option and then press [OK] to confirm.
3. Press [EXIT] to exit the menu interface. Press [CLEAR] or [BACK] to return to last interface.

- Not DSC Related: When the current display screen is not related to DSC, if no key operation occurs, the radio will return to normal operating mode automatically.
- DSC Related: When the current display screen is related to DSC, if no key operation occurs, except distress operation, the radio will return to normal operating mode automatically.

◆ Float & Flash

The Float & Flash function can detect the radio come in contract with water. When this function is activated, LCD and key backlight start to flash and an alarm sound emits. Make it easy to find the radio especially at night or in a dark environment.

- Function: Turn the Float & Flash Function ON or OFF.
- Auto OFF: Set the auto OFF time between 0 and 30 seconds after taking out of the water.
- Cycle: Select the LCD backlight cycle time between 0.5, 1, 2 and 4 seconds.
- Alarm: Select the alarm sounds.

◆ Monitor

The following two Monitor operations are selective.

- Push: Press [VOL/SQL] for 1 second, the squelch opens and emits sounds. The squelch keeps opened while holding down [VOL/SQL]. Release [VOL/SQL] to turn OFF.
- Hold: Press [VOL/SQL] for 1 second, the loudspeaker opens and emits sounds. The loudspeaker keeps opened while holding down [VOL/SQL]. Press any key to turn OFF.

◆ Unit

Select either Nautical Mile or Kilo Meter format to show the distance.

■ VHF MARINE CHANNEL LIST

USA - USA Channel Group , INT - International Channel Group , CAN - Canadian Channel Group

Channel Number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.060
01A			156.050	156.050
	02	02	156.100	160.700
	03	03	156.150	160.750
03A			156.150	156.150
	04		156.200	160.800
		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*1	13	13*1	156.650	156.650
14	14	14	156.700	156.700
15*1	15*1	15*1	156.750	156.750
16	16	16	156.800	156.800
17*1	17	17*1	156.850	156.850
	18		156.900	161.500
18A		18A	156.900	156.900
	19		156.950	161.550
19A		19A	156.950	156.950
20	20	20*1	157.000	161.600
20A			157.000	157.000

Channel Number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
	21	21	157.050	161.650
21A		21A	157.050	157.050
		21b	RX Only	161.650
	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
		25b	RX Only	161.850
26	26	26	157.300	161.900
27	27	27	157.350	161.950
28	28	28	157.400	162.000
		28b	RX Only	162.000
	60	60	156.025	160.625
	61		156.075	160.675
61A		61A	156.075	156.075
	62		156.125	160.725
		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
	65		156.275	160.875
65A	65A	65A	156.275	156.275
	66		156.325	160.925
66A	66A	66A*1	156.325	156.325
67*1	67	67	156.375	156.375

Channel Number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
68	68	68	156.425	156.425
69	69	69	156.475	156.475
70	70	70	RX Only	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*1	75*1	75*1	156.775	156.775
76*1	76*1	76*1	156.825	156.825
77*1	77	77*1	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
	83	83	157.175	161.775
83A		83A	157.175	157.175
		83b	RX Only	161.775
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

Channel Number			Frequency (MHz)	
USA	INT	CAN	Transmit	Receive
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
	A1*2		161.975	161.975
	A2*2		162.025	162.025

Weather Channel	Frequency (MHz)	
	Transmit	Receive
1	RX Only	162.550
2	RX Only	162.400
3	RX Only	162.475
4	RX Only	162.425
5	RX Only	162.450
6	RX Only	162.500
7	RX Only	162.525
8	RX Only	161.650
9	RX Only	161.775
10	RX Only	163.275

*1 Low power only. *2 Australian version only.

SPECIFICATIONS

General Specifications	
Frequency Range	TX 156.025-157.425MHz
	RX: 156.050-163.275MHz
Type of Emission	FM(16K0G3E)\DSC(16K0G2B)
Frequency Stability	±10ppm
Battery Pack	DC7.4V,1500mAh
Operating Temperature	-15℃ ~ +55℃
Dimensions (W×H×D)	61mm×141mm×43mm
Weight	315g (with battery, antenna and belt clip)
Waterproof Level	IPX7

GPS Receiver Specifications Apply to long-term tracking (when signal strength≥-130dBm, 5 satellites visible.)	
TIFF Cold Boot	< 1 minute
TIFF Warm Boot	< 10 seconds
Horizontal position Precision	< 10 meters

Transmitter Specifications	
Output Power	5W\1W
Maximum Frequency Deviation	±5kHz
Spurious Emission	≤0.25μW
Adjacent Channel Power	≥70dB
Audio Harmonic Distortion	≤10%
Current Drain	≤1.5A(High Power)
	≤0.7A(Low Power)
	≤ 0.2A(Maximum Audio Output)

Receiver Specifications	
Receive Sensitivity	≤0.22μV
Squelch Sensitivity	≤0.22μV
HUM and Noise	≥40dB
Adjacent Channel Selectivity	≥70dB
Spurious Response Rejection Ratio	≥70dB
Intermodulation Rejection Ratio	≥68dB
Audio Output Power	≥0.5W (10%)

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
Cannot power on.	● The battery is exhausted. ● The battery is not installed well.	● Charge the battery pack. ● Well install the battery pack.	● 1、2 ● 2、3
Cannot transmit or transmit in high power is incapable.	● Some channels are limited to low power transmit. ● The battery is exhausted ● Low power transmit. ● Work in Weather Channel or Channel 70.	● Switch to channels without output power limit. ● Charge the battery pack. ● Press [HI/LO] to select high power transmit. ● Exit Weather Channel or Channel 70.	● 6、7 ● 1、2 ● 6 ● 6
Cannot not change channel.	● The keypad is locked.	● Press and hold [LOCK] for 1.5 seconds to turn OFF the key lock function.	● 10
Cannot scan.	● No TAG channels are set.	● Set TAG channels.	● 11
Cannot communicate in the same channel.	● The channel is duplex (DUP). ● Work in self-set channel group.	● Select channel. ● Set the same channel frequency.	● 8 ● 8
No key beep.	● The key beep is turned OFF.	● Turn ON the key beep in the set mode.	● 51
No sound from loudspeaker.	● The squelch level is too high. ● The volume level is too low. ● Water ingress in loudspeaker.	● Set the proper squelch level. ● Press [VOL] and then press [▲]/[▼] to turn up the volume. ● Drain water from loudspeaker.	● 7 ● 7 ● 10
Cannot transmit distress call.	● No MMSI code is set.	● Set MMSI code.	● 13

RF ENERGY EXPOSURE AND PRODUCT SAFETY GUIDE FOR PORTABLE TWO-WAY RADIOS


ATTENTION!

Before using this radio, read this guide which contains important operating instructions for safe usage and rf energy awareness and control for compliance with applicable standards and regulations.

This two-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. RF energy, which when used improperly, can cause biological damage.
All Retevis two-way radios are designed, manufactured, and tested to ensure they meet government-established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of two-way radios. These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it.
Please refer to the following websites for more information on what RF energy exposure is and how to control your exposure to assure compliance with established RF exposure limits:http://w-ww.who.int/en/

Local Government Regulations

When two-way radios are used as a consequence of employment, the Local Government Regulations requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your Retevis two-way radio has a RF Exposure Product Label. Also, your Retevis user manual, or separate safety booklet includes information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

Radio License

Governments keep the radios in classification, business two-way radios operate on radio frequencies that are regulated by the local radio management departments (FCC, ISED, OFCOM, ANFR, BFTK, Bundesnetzagentur...).To transmit on these frequencies, you are required to have a license issued by them. The detailed classification and the use of your two radios, please contact the local government radio management departments.
Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Unauthorized modification and adjustment

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority granted by the local government radio management departments to operate this radio and should not be made. To comply with the corresponding requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services.
Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the local government radio management departments equipment authorization for this radio could violate the rules.

FCC Requirements:

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference. (Licensed radios are applicable);
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (Other devices are applicable)
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE:

•This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
•This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

CE Requirements:

•(Simple EU declaration of conformity) Shenzhen Retevis Technology Co., Ltd. declares that the radio equipment type is in compliance with the essential requirements and other relevant provisions of RED Directive 2014/53/EU and the ROHS Directive 2011/65/EU and the WEEE Directive 2012/19/EU; the full text of the EU declaration of conformity is available at the following internet address: www.retevis.com.

•Restriction Information

This product can be used in EU countries and regions, including: Belgium (BE), Bulgaria (BG), Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and United Kingdom (UK).
For the warning information of the frequency restriction, please refer to the package or manual section.

•Disposal

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.

IC Requirements:
Licence-exempt radio apparatus
This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage;
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Exposure Information

•DO NOT operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio, and the antenna gain shall not exceed the specified gain by the manufacturer declared.
•DO NOT transmit for more than 50% of total radio use time, more than 50% of the time can cause RF exposure compliance requirements to be exceeded.
•During transmissions, your radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.
•DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.
•Portable Device, this transmitter may operate with the antenna(s) documented in this filing in Push-to-Talk and body-worn configurations. RF exposure compliance is limited to the specific belt-clip and accessory configurations as documented in this filing and the separation distance between user and the device or its antenna shall be at least 2.5 cm.
•Mobile Device, during operation, the separation distance between user and the antenna subjects to actual regulations, this separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements.
•Occupational/Controlled Radio, this radio is designed for and classified as "Occupational/Controlled Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards; NOT intended for use in a General population/uncontrolled environment.
•General population/uncontrolled Radio, this radio is designed for and classified as "General population/uncontrolled Use".

RF Exposure Compliance and Control Guidelines and Operating Instructions
To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures.
Guidelines:
•User awareness instructions should accompany the device when transferred to other users.
•Do not use this device if the operational requirements described herein are not met.
Operating Instructions:
•Transmit no more than the rated duty factor of 50% of the time. To Transmit (Talk), push the Push to Talk (PTT) button. To receive calls (listen), release the PTT button. Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy exposure only when transmitting in terms of measuring for standards compliance.
•Transmit only when people outside the vehicle are at least the recommended minimum lateral distance away from a properly installed according to installation instructions, externally mounted antenna.
•When operating in front of the face, worn on the body, always place the radio in a Retevis approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Non-Retevis approved accessories may result in exposure levels, which exceed the IEEE/ICNIRP RF exposure limits.
Hand-held Mode
• Hold the radio in a vertical position with the microphone (and other parts of the radio including the antenna) at least 2.5 cm (one inch) away from the nose or lips. The antenna should be kept away from the eyes. Keeping the radio at a proper distance is important as RF exposure decreases with increasing distance from the antenna.

Phone Mode
•When placing or receiving a phone call, hold your radio product as you would a wireless telephone. Speak directly into the microphone.

Electromagnetic Interference/Compatibility

NOTE: Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility

Avoid Choking Hazard

Small Parts. Not for children under 3 years.

Turn off your radio power in the following conditions:

WARNING

•Turn off your radio before removing (installing) a battery or accessory or when charging battery.
•Turn off your radio when you are in a potentially hazardous environments: Near electrical blasting caps, in a blasting area, in explosive atmospheres (inflammable gas, dust particles, metallic powders, grain powders, etc.).
•Turn off your radio while taking on fuel or while parked at gasoline service stations.
To avoid electromagnetic interference and/or compatibility conflicts
•Turn off your radio in any facility where posted notices instruct you to do so, hospitals or health care facilities (Pacemakers, Hearing Aids and Other Medical Devices) may be using equipment that is sensitive to external RF energy.
•Turn off your radio when on board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

Protect your hearing:

WARNING

• Use the lowest volume necessary to do your job.
• Turn up the volume only if you are in noisy surroundings.
• Turn down the volume before adding headset or earpiece.
• Limit the amount of time you use headsets or earpieces at high volume.
• When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear.
• Use careful with the earphone maybe possible excessive sound pressure from earphones and headphones can cause hearing loss.
Note: Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.

Avoid Burns

WARNING

Antennas

•Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with the skin when the radio is in use, a minor burn can result.

Batteries (If appropriate)

•When the conductive material such as jewelry, keys or chains touch exposed terminals of the batteries, may complete an electrical circuit (short circuit the battery) and become hot to cause bodily injury such as burns. Exercise care in handling any battery, particularly when placing it inside a pocket, purse or other container with metal objects.

Long transmission

•When the transceiver is used for long transmissions, the radiator and chassis will become hot.

Safety Operation

WARNING

Forbid

•Do not use charger outdoors or in moist environments, use only in dry locations/conditions.

•Do not disassemble the charger, that may result in risk of electrical shock or fire.

•Do not operate the charger if it has been broken or damaged in any way.

•Do not place a portable radio in the area over an air bag or in the air bag deployment area. The radio may be propelled with great force and cause serious injury to occupants of the vehicle when the air bag inflates.

To reduce risk

•Pull by the plug rather than the cord when disconnecting the charger.

•Unplug the charger from the AC outlet before attempting any maintenance or cleaning.

•Contact Retevis for assistance regarding repairs and service.

•The adapter shall be installed near the equipment and shall be easily accessible

Approved Accessories

WARNING

•Contact Retevis for assistance regarding repairs and service.

•The adapter shall be installed near the equipment and shall be easily accessible

•This radio meets the RF exposure guidelines when used with the Retevis accessories supplied or designated for the product. Use of other accessories may not ensure compliance with the RF exposure guidelines and may violate regulations.

•For a list of Retevis-approved accessories for your radio model, visit the following website: http://www.Retevis.com

Please cut along with this line

Guarantee

Model Number: _____

Serial Number: _____

Purchasing Date: _____

Dealer: _____ Telephone: _____

User's Name: _____ Telephone: _____

Country: _____ Address: _____

Post Code: _____ Email: _____

Remarks:

1.This guarantee card should be kept by the user, no replacement if lost.

2.Most new products carry a two-year manufacturer's warranty from the date of purchase. Further details, pls read http://www.retevis.com/after-sale/

3.The user can get warranty and after-sales service as below:

- Contact the seller where you buy.
- Products Repaired by Our Local Repair Center

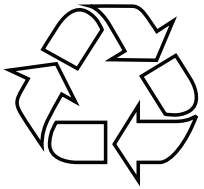
4.For warranty service, you will need to provide a receipt proof of purchase from the actual seller for verification

Exclusions from Warranty Coverage:

1.To any product damaged by accident.

2.In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.

3.If the serial number has been altered, defaced, or removed.



CE FC RoHS

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Web: www.retevis.com
E-mail: kam@retevis.com
Facebook: facebook.com/retevis

MADE IN CHINA

说明书要求

尺寸：210*145mm

印刷：黑白印刷

装订：胶订

纸张材质：胶合纸

本页无需印刷