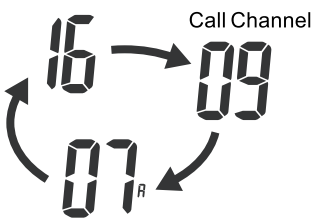
■ Description

Dual watch/Tri-watch of this transceiver can be selected in set mode.
Dual watch: Watch and monitor in turns between current channel and Channel 16.
Tri-watch: Watch and monitor in turns among current channel, Channel 16 and call channel.

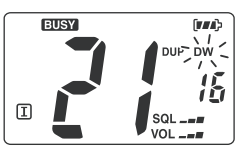
Dual Watch



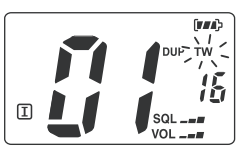
Tri -Watch

■ Operation

1. Push [SCAN/DUAL]for 1.5 seconds to start dual watch or tri-watch.
   - "DW" blinks when dual watch; “TW” blinks when tri-watch.
   - A beep tone sounds when a signal is received on channel 16.
   - Tri-watch switches to dual watch when signal received on call channel.
2. Push[SCAN/DUAL]to cancel dualwatch/tri-watch.



Dual Watch



Tri- Watch

■ Set Mode Programming

The set mode is used to change the settings of transceiver's functions: Beep Tone function, weather alarm , priority scan function, scan resume timer, auto scan function, dual/tri-watch function, monitor key function, automatic backlighting, LCD contrast setting,power save function and squelch sensitivity .

Set Mode Operation

1. Turn off the power
2. While holding down[MONI/SQL] key ,turn ON to enter the set mode
3. Release[MONI/SQL] key , appears “bP”
4. Push[VOL/SQL] key to select a desired setting item.
5. Push[▲][▼]to select a desired setting parameter.
6. To exit the set mode, push【16/C】

No.	Display	Set Items	Set parameter options	The default value
1	bP	Prompt Tone	of /on	on
2	AL	Weather Alert	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 Save	of / on	on
11	SS	Squelch Sensitivity	of / on	of

■ 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 alarm weather.When the weather alertfunction is turned on,walkie-talkies will sound the alarm at thesame time "WXALT" symbol flashes.During the scan,the currentweather channel in use will be scanned.

- With this function enabled,when weather channel selected, “WX ALT” icon displayed in the screen.

◆ Scan Mode

The transceiver has 2 scan types—Normal and priority scan. Normal scan searches all TAG channels in the selected channel group, priority scan sequentially searches all TAG channels also channel 16.

◆ Scan Resume Timer

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 5sec. 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 Dual-watch or Tri-watch.

◆ Monitor Key Function

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 1.5seconds, 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.When on,press any key except for [PTT] to turn on backlighting.

- The backlighting is automatically turned OFF after 5sec. of inactivity.

◆ 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 performed for 5seconds.

◆ Squelch Sensitivity

Squelch sensitivity function is activated to enhance noise reduction, avoid noise from affecting squelch.

■ VHF Marine Channel List

Channel number			Frequency(MHz)	
USA	INT	CAN	Transmit	Receive
	01	01	156.050	160.650
01A			156.050	156.050
	02	02	156.100	160.700
	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	87A	87A	157.375	157.375
88	88	88	157.425	162.025
88A	88A	88A	157.425	157.425

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

*Only a low power.

SPECIFICATION

General Specification	
Frequency Range	TX:156.025-157.425MHz
	RX:156.05-163.275MHz
Type of Emission	FM (16K0G3E)
Frequency Stability	±10 PPM
Battery Pack	1200mAh Li-ion(DC7.4V)
Operating Temperature Range	−20℃ ~ +55℃
Antenna Impedance	50
Dimensions (H × W × D)	140mm × 65mm × 41mm
Weight	288g (With battery, antenna, belt clip)

Transmitter Specification	
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	⩽0.22μV
Squelch Sensitivity	⩽0.22μV
HUM and Noise	⩾40dB
Adjacent Channel Selectivity	⩾70dB
Spurious Response	⩾70dB
Intermodulation Rejection	⩾68dB
Audio Output Power	⩾0.5W (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 cannot be turned on	● The battery is exhausted. ● Battery pack is not correctly inserted.	● Recharge the battery pack. ● Correctly insert the battery pack.	● 1 ● 2
Transmitting is incapable , or high power transmitting is incapable	● Some channels are limited to low power transmitting. ● The battery is exhausted. ● The output power is set to low. ● Working in weather channel or CH 70.	● Switch to channels without output power limited. ● Recharge the battery pack. ● Push [H/L] to select high output power. ● Quit weather channel or CH 70.	● 5、6 ● 1 ● 5 ● 6
The displayed channel cannot be changed.	● Keyboard lock function is activated.	● Hold [LOCK] key for 1.5 seconds to turn off the function.	● 7
Scan does not start	● No tag channels are set.	● Set desired channels as tag channels.	● 8
Cannot communicate in same channel	● It is duplex channel. ● Work in self-set channel group.	● Choose channel. ● Set channel frequency as same.	● 6 ● 6
No prompt tone	● Prompt tone function is turned off.	● Turn on the prompt tone function in set mode.	● 10
No sound from loudspeaker	● The squelch level is too high. ● Volume level is too low. ● Speaker has been exposed to water.	● Set suitable squelch level. ● Push [VOL] key, then [▲] [▼] to adjust volume. ● Discharge water from speaker grill.	● 5 ● 5 ● 7

■ WARNINGS

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://www.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 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.

- 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.

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 interfere-nce 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.
- 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.

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.

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

- 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

EU Importer:
Importer:Germany Retevis Technology GmbH
Address:Uetzenacker 29,38176 wendeburg

Shenzhen Retevis Technology Co.,Ltd

Address: 7/F , Zhonghaixin Science&Technology Park , No.12 Ganli 6th Road , Jihua Street , Longgang District, Shenzhen , China
Web:www.retevis.com E-mail:kam@retevis.com
Facebook：facebook.com/retevis

RoHS Compliant

0-3

MADE IN CHINA

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

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.