



GMDSS Handheld VHF Radio

GX510





GX510

INSTRUCTION MANUAL



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GX510 Instruction Manual

RF Radiation Information

RF Radiation Profile

Your radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE and ICNIRP exposure limits for occupational/controlled RF

exposure environment at operating duty factors of up to 50% transmitting and is authorized by the FCC for occupational use only.

In terms of measuring RF energy for compliance with the FCC

exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking in PTT mode), not when it is receiving (listening) or in standby mode.

The device complies with SAR and/or RF field strength limits of RSS-102 requirement

RF Radiation Safety

In order to ensure user health, experts from relevant industries including science, engineering, medicine and health work with international organizations to develop standards for safe exposure to RF radiation. These standards consist of:

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J;
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992;
- Institute of Electrical and Electronic Engineers (IEEE) C95. 1 – 1999;
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998;

FCC Regulations

Federal Communication Commission (FCC) requires that all radio communication products should meet the requirements set forth in the above standards before they can be marketed in the U.S, and the manufacturer shall post a RF label on the product to inform users of operational instructions, so as to enhance their occupational health against exposure to RF energy.

Part 15 Compliance

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. Note: "Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

ISED RSS-Gen Notice

"This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference and
- (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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISED Canada ICES-003 Compliance Label

CAN ICES-3 (B)/NMB-3(B)"

SAR WARNING

Specific Absorption Rate (SAR) information

The SAR limit of USA(FCC) is 1.6 W/kg averaged over one gram of tissue. This model (FCC ID

TXJ-GX510) has also been tested against this SAR limited. The highest SAR value reported under this standard during product certification for use at the head is 0.385 W/kg and body is 0.574 W /kg. This equipment should be installed and operated with minimum distance 25 mm between the radiator and your head, and 0 mm between the radiator and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter

EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 2014/53/EU. Please note that the above information is applicable to EU countries only.

Hereby, GME declares that this Maritime Radio is in compliance with essential requirements and other relevant provisions of Directive 2014/53/EU.



Caution

1. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
2. Adapter shall be installed near the equipment and shall be easily accessible.
3. The device operating temperature range is -20~55°C, The charging temperature of the battery at the charging dock ranges from 0 to 45°C
4. The plug considered as disconnect device of adapter.

front face and 0mm from your body.

6. Declaration of Conformity.

The information listed above provides the user with information needed to make him or her aware of a RF exposure, and what to do to assure that this radio operates within the CE exposure limits of this radio.

The device complies with RF specifications when the device used at 25mm from your front face and 0mm from your body. Thirdparty belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Maximum SAR Value

(10g):0.353W/Kg. **Waterproof design Warning**

This product is the IPX8 waterproof design, in order to achieve the best performance.

Battery usage and installation instructions

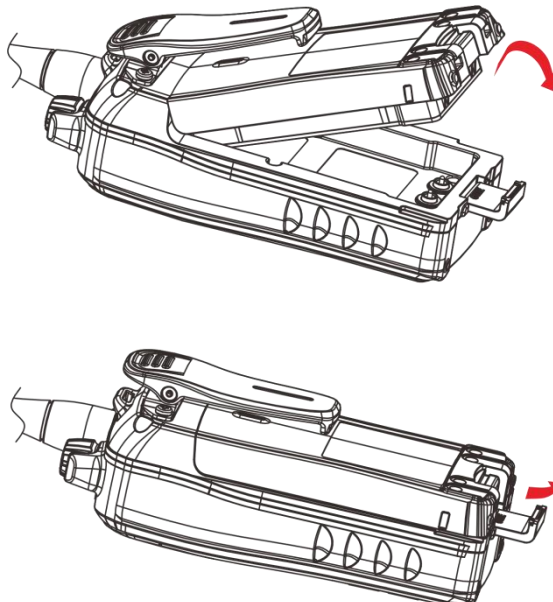
Remove the black safety label on the battery before operation.



If the radio doesn't turn on automatically, simply turn the Knob clockwise to turn it on.

Removing the battery pack

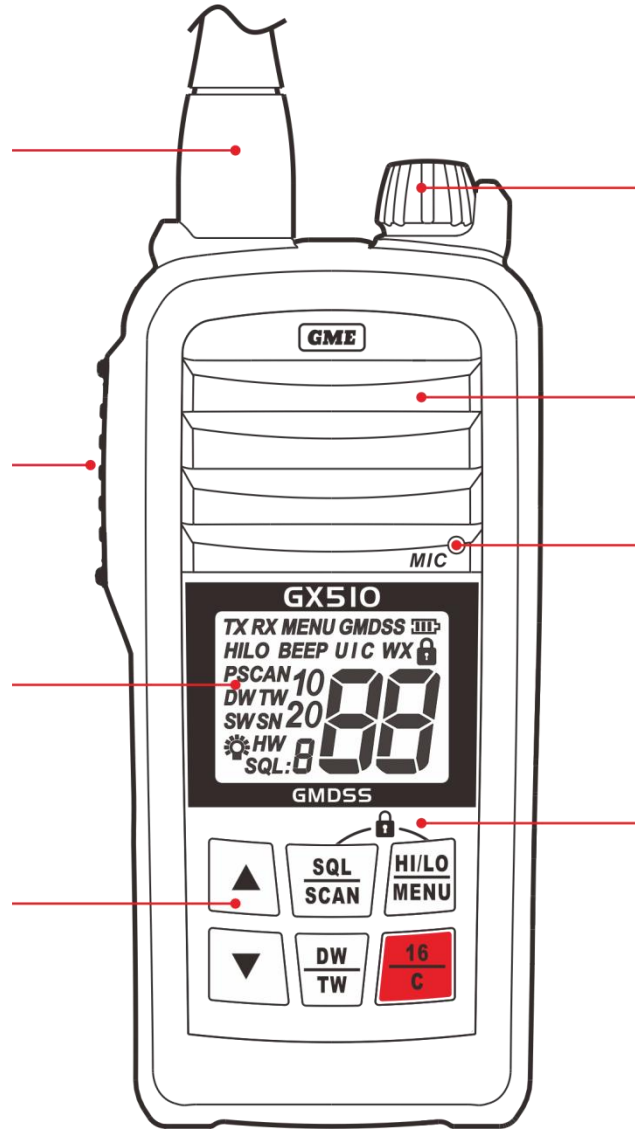
To remove the battery pack, lift the locking lever at the base of the battery pack and rotate. Lift the battery pack from the base of the radio and slide the battery pack away from the radio.



Install the battery

To re-fit the battery pack, slide the top of the battery pack in towards the radio then press the base of the battery pack downwards against the battery contacts. Rotate the battery lever upwards and press into place so that it clicks firmly.

Basic Parts



ANT: Antenna

Knob: ON/OFF and Volume knobs

Speaker: Play sound.

MIC: Microphone

Lock: Keypad Locked

PTT: When pressed, the radio starts to transmit and when released, the radio switches to receive

Display: LCD Display panel



: UP key



: DOWN key



: Short press to enter Set SQL Level, long press to enter Scan.



: Short press to switch high power/low power, long press to enter menu mode

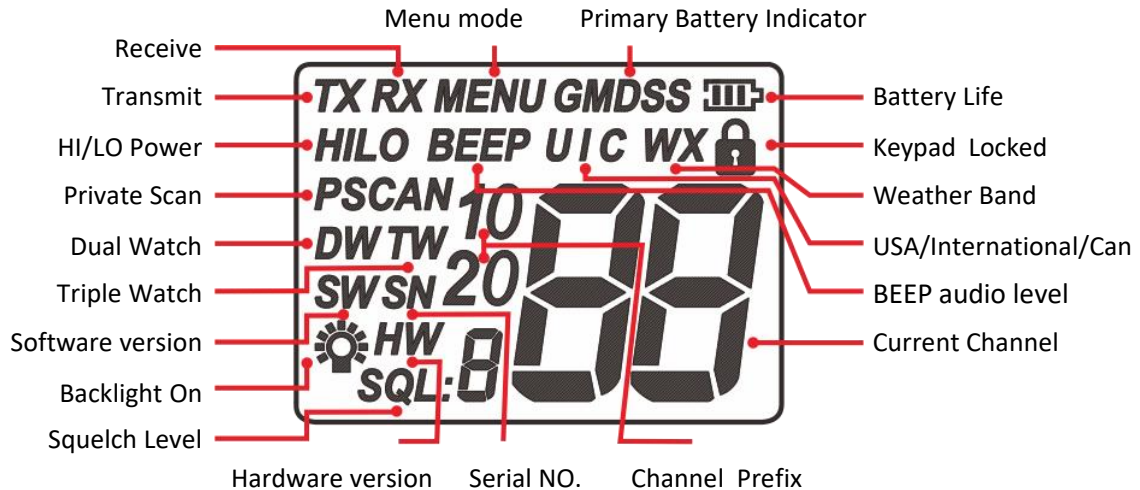


: Short press for dual watch, long press for triw watch.



: Short press to enter 16 channel, long press to enter Calling channel

Basic Display Indications



Operation

2.1 Switch on

Turn the knob clockwise, the screen displays all the characters, the backlight comes on and goes off after 2 seconds, and then the channel information is displayed.

2.2 Switch off

Turn the knob counterclockwise until the screen turns off the display and the backlight turns off.

2.3 Adjusting the Volume

After switching on, turn the knob clockwise to increase the volume; turn the knob anti-clockwise to decrease the volume.

2.4 Sound Intercom

Press the PTT key and speak to the MIC, the sound is transmitted. Release the PTT key to turn to receive.

2.5 Adjust SQL level

Short press the key, the number following SQL: flashes, then you can press ▲▼ key to adjust SQL level.

Short press the key again to exit the mode of adjusting SQL level.

2.6 Scanning

Long press  key to enter scan mode. Scan all frequencies in the current segment, and pause scanning if

a carrier is received. Resume scanning when the carrier disappears.

2.7 dual watch and triw watch

Short  key to enter dual watch, listen to current channel and 16 channel.

Long  key to enter triw watch; listen to current channel, 16 channel and Calling channel.

2.8 Entering 16 channel/Calling channel

Short press  the key to enter 16 channel, the screen displays P, then press the  key once to return.

Long press  key to enter Calling channel, the screen displays P, then long press  key once to return.

2.9 Convert High Power/Low Power

Short press  the key once, if the current is in high power, it will switch to low power, vice versa, it will switch to high power. If the current channel can't transmit, the error tone will be issued.

2.10 Menu

- Long press  key once to enter the menu mode.
 - The first menu is to set backlight brightness level, you can press ▲ ▼ to adjust the backlight brightness level, short press  once to confirm and enter the second item.
 - The second menu is to set frequency band, you can press ▲ ▼ key to convert band among U,I,C, short press  once to confirm and enter the third item.
 - The third menu item is to set Calling Channel, which can be converted by pressing ▲ ▼ key, short press  once to confirm and enter the fourth item.
 - The third menu item is to set Key Tone, you can press ▲ ▼ key to set with or without key tone, short press  once to confirm and enter the fourth item.
 - The fourth menu item is to check the hardware version number, short press  once to enter the fifth item.
 - The fifth menu item is to view the software version number, short press  once to enter the sixth item.
 - The sixth menu item is to view the device serial number, short press  once to return to the first item.
- Long press to exit menu mode.

2.11 Locking and Unlocking Keys

When the keypad is not locked, press and hold  key and  key at the same time for 2 seconds, all the keys except PTT have been invalidated. Press and hold  key and  key at the same time for 2 seconds again to unlock the keys.

VHF Channels & Frequencies

GMDSS VHF Channels & Frequencies				
CH	TX Freq	RX Freq	Simple	Freq Use
06	156.300	156.300	x	Inter-ship [1]
08	156.400	156.400	x	Inter-ship
09	156.450	156.450	x	Inter-ship, Port Operations and Ship Movement
10	156.500	156.500	x	Inter-ship, Port Operations and Ship Movement [2]
11	156.550	156.550	x	Port Operations and Ship Movement
12	156.600	156.600	x	Port Operations and Ship Movement
13	156.650	156.650	x	Inter-ship Safety, Port Operations and Ship Movement [3]
14	156.700	156.700	x	Port Operations and Ship Movement
15	156.750	156.750	x	Inter-ship and On-board Communications at 1W only [4]
16	156.800	156.800	x	Distress, Safety and Calling
17	156.850	156.850	x	Inter-ship and On-board Communications at 1W only [4]
67	156.375	156.375	x	Inter-ship, Port Operations and Ship Movement [2]
68	156.425	156.425	x	Port Operations and Ship Movement
69	156.475	156.475	x	Inter-ship, Port Operations and Ship Movement
71	156.575	156.575	x	Port Operations and Ship Movement
72	156.625	156.625	x	Inter-ship
73	156.675	156.675	x	Inter-ship [2]
74	156.725	156.725	x	Port operations and Ship movement
77	156.875	156.875	x	Inter-ship
87	157.375	157.375	x	Port Operations and Ship Movement
88	157.425	157.425	x	Port Operations and Ship Movement

International Marine VHF Channels & Frequencies				
CH	TX Freq	RX Freq	Simple	Freq Use
01	156.050	160.650		Public Correspondence, Port Operations and Ship Movement
02	156.100	160.700		Public Correspondence, Port Operations and Ship Movement
03	156.150	160.750		Public Correspondence, Port Operations and Ship Movement
04	156.200	160.800		Public Correspondence, Port Operations and Ship Movement
05	156.250	160.850		Public Correspondence, Port Operations and Ship Movement
06	156.300	156.300	x	Inter-ship [1]
07	156.350	160.950		Public Correspondence, Port Operations and Ship Movement
08	156.400	156.400	x	Inter-ship
09	156.450	156.450	x	Inter-ship, Port Operations and Ship Movement
10	156.500	156.500	x	Inter-ship, Port Operations and Ship Movement [2]
11	156.550	156.550	x	Port Operations and Ship Movement
12	156.600	156.600	x	Port Operations and Ship Movement
13	156.650	156.650	x	Inter-ship Safety, Port Operations and Ship Movement [3]
14	156.700	156.700	x	Port Operations and Ship Movement
15	156.750	156.750	x	Inter-ship and On-board Communications at 1W only [4]
16	156.800	156.800	x	Distress, Safety and Calling
17	156.850	156.850	x	Inter-ship and On-board Communications at 1W only [4]
18	156.900	161.500		Public Correspondence, Port Operations and Ship Movement
19	156.950	161.550		Public Correspondence, Port Operations and Ship Movement
1019	156.950	156.950	x	Public Correspondence, Port Operations and Ship Movement
2029	RX Only	161.550		Public Correspondence, Port Operations and Ship Movement
1020	157.000	157.000	x	Public Correspondence, Port Operations and Ship Movement
2020	RX Only	161.600		Public Correspondence, Port Operations and Ship Movement
21	157.050	161.650		Public Correspondence, Port Operations and Ship Movement
22	157.100	161.700		Public Correspondence, Port Operations and Ship Movement
23	157.150	161.750		Public Correspondence, Port Operations and Ship Movement

1027	157.350	157.350	x	Public Correspondence
1028	157.400	157.400	x	Public Correspondence
60	156.025	160.625		Public Correspondence, Port Operations and Ship Movement
61	156.075	160.675		Public Correspondence, Port Operations and Ship Movement
62	156.125	160.725		Public Correspondence, Port Operations and Ship Movement
63	156.175	160.775		Public Correspondence, Port Operations and Ship Movement
64	156.225	160.825		Public Correspondence, Port Operations and Ship Movement
65	156.275	160.875		Public Correspondence, Port Operations and Ship Movement
66	156.325	160.925		Public Correspondence, Port Operations and Ship Movement
67	156.375	156.375	x	Inter-ship, Port Operations and Ship Movement [2]
68	156.425	156.425	x	Port Operations and Ship Movement
69	156.475	156.475	x	Inter-ship, Port Operations and Ship Movement
71	156.575	156.575	x	Port Operations and Ship Movement
72	156.625	156.625	x	Inter-ship
73	156.675	156.675	x	Inter-ship [2]
74	156.725	156.725	x	Port operations and Ship movement
75	156.775	156.775	x	See Note [5]
76	156.825	156.825	x	See Note [5]
77	156.875	156.875	x	Inter-ship
1078	156.925	156.925	x	Public correspondence, Port Operations and Ship Movement
2078	RX Only	161.525		Public correspondence, Port Operations and Ship Movement
79	156.975	161.575		Public correspondence, Port Operations and Ship Movement
1079	156.975	156.975	x	Public correspondence, Port Operations and Ship Movement
2079	RX Only	161.575		Public correspondence, Port Operations and Ship Movement
80	157.025	161.625		Public correspondence, Port Operations and Ship Movement
81	157.075	161.675		Public correspondence, Port Operations and Ship Movement
82	157.125	161.725		Public correspondence, Port Operations and Ship Movement

83	157.175	161.775		Public correspondence, Port Operations and Ship Movement
87	157.375	157.375	x	Port Operations and Ship Movement
88	157.425	157.425	x	Port Operations and Ship Movement

- ◆ Inter-ship channels are for communications between ship stations. Inter-ship communications should be restricted to Channels 6, 8, 72 and 77. If these are not available, the other channels marked for Inter-ship may be used.
- ◆ Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.

Notes:

1. Channel 06 may also be used for communications between ship stations and aircraft engaged in coordinated search and rescue operations. Ship stations should avoid harmful interference to such communications on channel 06 as well as to communications between aircraft stations, ice breakers and assisted ships during ice seasons.
2. Within the European Maritime Area and in Canada, channels 10, 67 and 73 may also be used by the individual administrations concerned for communication between ship stations, aircraft stations and participating land stations engaged in coordinated search and rescue and anti-pollution operations in local areas. Channels 10 or 73 (depending on location) are also used for the broadcast of Marine Safety Information by the Maritime and Coast Guard Agency in the UK only.
3. Channel 13 is designated for use on a worldwide basis as a navigation safety communication channel, primarily for inter-ship navigation safety communications.
4. Channels 15 and 17 may also be used for on-board communications provided the effective radiated power does not exceed 1 Watt.
5. The use of Channels 75 and 76 should be restricted to navigation related communication only and all precautions should be taken to avoid harmful interference to channel 16. Transmit power is limited to 1 Watt.



U.S. Marine VHF Channels and Frequencies				
CH	TX Freq	RX Freq	Simplex	Freq Use
1001	156.050	156.050	x	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
1005	156.250	156.250	x	Port Operations or VTS in the Houston, New Orleans and Seattle areas.
06	156.300	156.300	x	Inter-ship Safety
1007	156.350	156.350	x	Commercial
08	156.400	156.400	x	Commercial (Inter-ship only)
09	156.450	156.450	x	Boater Calling. Commercial and Non-Commercial.
10	156.500	156.500	x	Commercial
11	156.550	156.550	x	Commercial. VTS in selected areas.
12	156.600	156.600	x	Port Operations. VTS in selected areas.
13	156.650	156.650	x	Inter-ship Navigation Safety (Bridge-to-bridge). Ships >20meters in length maintain a listening watch on this channel in US waters.
14	156.700	156.700	x	Port Operations. VTS in selected areas.
15	RX Only	156.750		Environmental (Receive only). Used by Class 'C' EPIRBS.
16	156.800	156.800	x	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel.
17	156.850	156.850	x	State Control
1018	156.900	156.900	x	Commercial
1019	156.950	156.950	x	Commercial
20	157.000	161.600		Port Operations (duplex)
1020	157.000	157.000	x	Port Operations
1021	157.050	157.050	x	U.S. Coast Guard only
1022	157.100	157.100	x	Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.
1023	157.150	157.150	x	U.S. Coast Guard only
24	157.200	161.800		Non-Commercial
25	157.250	161.850		Non-Commercial
26	157.300	161.900		Non-Commercial



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27	157.350	161.950		Non-Commercial
28	157.400	162.000		Non-Commercial
1063	156.175	156.175	x	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
1065	156.275	156.275	x	Port Operations
1066	156.325	156.325	x	Port Operations
67	156.375	156.375	x	Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Inter-ship only.
68	156.425	156.425	x	Non-Commercial
69	156.475	156.475	x	Non-Commercial
71	156.575	156.575	x	Non-Commercial
72	156.625	156.625	x	Non-Commercial (Inter-ship only)
73	156.675	156.675	x	Port Operations
74	156.725	156.725	x	Port Operations
77	156.875	156.875	x	Port Operations (Inter-ship only)
1078	156.925	156.925	x	Non-Commercial
1079	156.975	156.975	x	Commercial. Non-Commercial in Great Lakes only.
1080	157.025	157.025	x	Commercial. Non-Commercial in Great Lakes only
1081	157.075	157.075	x	U.S. Government only – Environmental protection operations.
1082	157.125	157.125	x	U.S. Government only
1083	157.175	157.175	x	U.S. Coast Guard only
84	157.225	161.825		Non-Commercial
85	157.275	161.875		Non-Commercial
86	157.325	161.925		Non-Commercial
2086	RX Only	161.925		Non-Commercial
87	157.375	157.375	x	Public Correspondence Marine Operator)
88	157.425	157.425	x	Public Correspondence only near Canadian border

- ◆ Recreational boaters normally use channels listed as Non-Commercial: 68, 69, 71, 72, 1078.
- ◆ Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.



- ◆ Channel 16 and are not available for regular voice communications.

Notes:

1. The digits “10” following a channel number indicates simplex use of the ship station transmit side of an international semi-duplex channel. Operations are different from that of international operations on that channel.
2. Channel 13 should be used to contact a ship when there is danger of collision. All ships of length 20 meters or greater are required to guard VHF channel 13, in addition to VHF channel 16, when operating within U.S. territorial waters.
3. Channel is Receive Only.
4. Channel 16 is used for calling other stations or for distress alerting.
5. Output power is fixed at 1 watt only.
6. Output power is initially set to 1 watt. User can temporarily override this restriction to transmit at high power.

Canadian Marine VHF Channels and Frequencies				
CH	TX Freq	RX Freq	Simple	Area of Operation Use
01	156.050	160.650		PC Public Correspondence
02	156.100	160.700		PC Public Correspondence
03	156.150	160.750		PC Public Correspondence
1004	156.200	156.200	x	PC Inter-ship, Ship/Shore and Safety: Canadian Coast Guard S&R
1005	156.250	156.250	x	Ship Movement
06	156.300	156.300	x	All areas Inter-ship, Commercial, Non commercial and Safety: May Be used for search and rescue communications between ships and aircraft.
1007	156.350	156.350	x	All areas Inter-ship, Ship/Shore, Commercial
08	156.400	156.400	x	WC, EC Inter ship, Commercial and Safety: Also assigned for operations in the Lake Winnipeg area.
09	156.450	156.450	x	AC Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: May be used to communicate with aircraft and Helicopters in predominantly maritime support operations.
10	156.500	156.500	x	AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
11	156.550	156.550	x	PC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Also used for pilotage purposes.
12	156.600	156.600	x	WC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and messages.
13	156.650	156.650	x	All areas Inter-ship, Commercial, Non-commercial and Ship Movement: Exclusively for bridge-to-bridge navigational traffic. Limited to 1-watt maximum power.
14	156.700	156.700	x	AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and Messages.
15	156.750	156.750	x	All areas Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: All May also be used for on-board Communications.
16	156.800	156.800	x	All areas International Distress, Safety and Calling.
17	156.850	156.850	x	All areas Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: All operations limited to 1-watt maximum power. May also be used for on-board Communications.
1018	156.900	156.900	x	All areas Inter-ship, Ship/Shore and Commercial: Towing on the Pacific Coast.

1019	156.950	156.950	x	All areas except PC Inter-ship and Ship/Shore: Canadian Coast Guard only.
20	157.000	161.600		All areas Ship/Shore, Safety and Ship Movement: Port operation
1021	157.050	157.050	x	All areas Inter-ship and Ship/Shore: Canadian Coast Guard only.
2021	RX Only	161.650		All areas Safety: Continuous Marine Broadcast (CMB) service.
1022	157.100	157.100	x	All areas Inter-ship, Ship/Shore, Commercial and Non-commercial: For communications between Canadian Coast Guard and non-Canadian Coast Guard stations only.
23	157.150	161.750		PC Ship/Shore and Public Correspondence: Also in the inland waters of British Columbia and the Yukon.
24	157.200	161.800		PC Public Correspondence
25	157.250	161.850		PC Public Correspondence
2025	RX Only	161.850		PC Public Correspondence
26	157.300	161.900		PC Public Correspondence
27	157.350	161.950		PC Public Correspondence
28	157.400	162.000		PC Public Correspondence
60	156.025	160.625		PC Ship/Shore and Public Correspondence.
1061	156.075	156.075	x	EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.
1062	156.125	156.125	x	EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.
1063	156.175	156.175	x	Tow Boats - BCC area
64	156.225	160.825		PC Ship/Shore and Public Correspondence
1064	156.225	156.225	x	EC Inter-ship, Ship/Shore and Commercial: Commercial fishing only.
1065	156.275	156.275	x	Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: Search & rescue and antipollution operations on the Great Lakes. Towing on the Pacific Coast. Port operations only in the St. Lawrence River areas with 1W maximum power. Pleasure craft in the inland waters of Alberta, Saskatchewan and Manitoba (excluding Lake Winnipeg and the Red River).
1066	156.325	156.325	x	Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement: Port operations only in the St. Lawrence River/Great Lakes Areas with 1-watt maximum power.
67	156.375	156.375	x	All areas except EC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.

68	156.425	156.425	x	All areas Inter-ship, Ship/Shore and Non-commercial: For marinas and yacht clubs.
69	156.475	156.475	x	All areas except EC Inter-ship, Ship/Shore, Commercial and Non-commercial
71	156.575	156.575	x	PC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety and Ship Movement the East Coast and on Lake Winnipeg.
72	156.625	156.625	x	EC, PC Inter-ship, Commercial and Non-commercial: May be used to communicate with aircraft and helicopters in predominantly maritime support
73	156.675	156.675	x	All areas except EC Inter-ship, Ship/Shore, Commercial, Non-commercial, Safety: May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
74	156.725	156.725	x	EC, PC Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement.
75	156.775	156.775	x	Simplex port operation, Ship movement and navigation related communication only. 1 watt maximum
76	156.825	156.825	x	Simplex port operation, Ship movement and navigation related communication only. 1 watt maximum
77	156.875	156.875	x	Inter-ship, Ship/Shore, Safety and Ship Movement: Pilotage on Pacific Coast. Port operations only in the St. Lawrence River/Great Lakes areas with 1W maximum power.
1078	156.925	156.925	x	EC, PC Inter-ship, Ship/Shore and Commercial
1079	156.975	156.975	x	EC, PC Inter-ship, Ship/Shore and Commercial
1080	157.025	157.025	x	EC, PC Inter-ship, Ship/Shore and Commercial
1081	157.075	157.075	x	Inter-ship and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/ Great Lakes areas.
1082	157.125	157.125	x	Inter-ship and Ship/Shore: Canadian Coast Guard use only in the St. Lawrence River/ Great Lakes areas.
1083	157.175	157.175	x	EC Inter-ship and Ship/Shore: Canadian Coast Guard and other Government agencies.
2083	RX Only	161.775		AC, GL Safety: Continuous Marine Broadcast (CMB) Service.
84	157.225	161.825		Non-Commercial
85	157.275	161.875		Non-Commercial
86	157.325	161.925		Non-Commercial
87	157.375	157.375	x	AC, GL, NL Ship/Shore and Public Correspondence
88	157.425	157.425	x	AC, GL, NL Ship/Shore and Public Correspondence



AC: Atlantic Coast, Gulf and St. Lawrence River up to and including Montreal

EC: (East Coast): includes NL, AC, GL and Eastern Arctic areas

GL: Great Lakes (including St. Lawrence above Montreal)

NL: Newfoundland and Labrador

PC: Pacific Coast

WC:(West Coast): Pacific Coast, Western Arctic and Athabasca-Mackenzie Watershed areas All areas: includes East and West Coast areas

Notes:

1. The digits “10” following a channel number indicates simplex use of the ship station transmit side of an international duplex channel. Operations are different from that of international operations on that channel.
2. Channel 16 is used for calling other stations or for distress alerting.
3. The digits “20” following a channel number indicates simplex use of the coast station transmit side of an international duplex channel. That is, the channel is Receive Only.
4. Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.
5. Channels 75 and 76 are reserved as guard bands for Channel 16 and are not available for regular voice communications.

European Private Channels and Frequencies

In addition to the channels listed above in the International Marine VHF Channels & Frequencies table, your radio may also include some of the following private channels. Which channels are included depend upon the country in which the radio is to be operated and whether you possess the appropriate licensing

Country	CH	TX Freq	RX Freq	Freq Use
Belgium	96	162.425	162.425	Marina
Denmark	L1	155.500	155.500	Leisure
	L2	155.525	155.525	Leisure
Denmark, Finland,	F1	155.625	155.625	Fishing
Norway & Sweden	F2	155.775	155.775	Fishing
	F3	155.825	155.825	Fishing
Finland, Norway&Sweden	L1	155.500	155.500	Leisure
	L2	155.525	155.525	Leisure
	L3	155.650	155.650	Leisure
Netherlands	31	157.550	162.150	Marina
	37	157.850	157.850	Leisure
UK	M1	157.850	157.850	Marina
	M2	161.425	161.425	Marina

Notes: A license may be required to operate the radio on the private channels. It is your responsibility to obtain the proper license to operate the radio on these frequencies.

Weather Channels and Frequencies

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

SPECIFICATIONS

TRANSMITTER		
Power		
VHF high power	W	5
GMDSS high power	W	2.5
low power	W	1
Tx frequencies error	ppm	±5
Modulation limiting Deviation	KHz	≤ ±5
TX Audio Frequency Response		+1 dB to -3 dB of 6 dB octave from 300-3000 Hz
Audio Distortion at 3 KHz Dev.	%	<5
Residual modulation: 40 dB	dB	≥40
Microphone Sensitivity	mV	13±3
Spurious and Harmonic & response	dBm	≤-36
Modulation Mode:		FM (16K0G3E)
Current Drain VHF Transmit(High)	A	≤1.4
Current Drain GMDSS Transmit(High)	A	≤1.0
Current Drain Transmit(Low)	A	≤0.8
RECEIVER		
RX Sensitivity For 12dB SINAD	dBμV	≤-6(EMF)
Squelch		
a) Squelch sensitivity	dBμV	<-6.0(EMF)
b) (Depth squelch) squelch tight	dBμV	≤+6(EMF)
c) SQ Hysteresis	dB	3~6
Rated audio output at 10% Thd Speaker	mW	≥700
RX S/N ratio	dB	≥40
RX Audio frequency resp. dB 1000Hz/0dB ref	dB	+1 dB to -3 dB of 6 dB octave from 300-3000 Hz
Adjacent Channel Rejection	dB	≥70
Image rejection(58.05Mhz/450KHZ)	dB	≥70
Intermodulation rejection (3-Gen.Method)	dB	≥68
Spurious response rejection	dB	≥70
Current Drain Maximum Audio Power	mW	≥700
Standby Current	mA	≤60
GENERAL		
Frequency coverage (MHz):		
GMDSS Frequency coverage	MHz	156.300 – 157.425
VHF Frequency coverage	MHz	TX: 156.025 - 162.425 RX: 156.050 - 163.275
Frequency stability:	ppm	≤ ±5
Power supply voltage;VHF/GMDSS	V	7.4V/6V
Operating temperature	°C	-20°C to +55°C
Dimensions (projections not included):	mm	129.14x58.43x39.53mm