



GMDSS VHF MARINE RADIO

TRANSCIEVER FOR SURVIVAL CRAFT

GX510



INSTRUCTION MANUAL

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INTRODUCTION

Congratulations on your purchase. The GX510 VHF Marine Handheld Transceiver is designed for Survival craft operating in the 156 – 163 MHz marine band.

- Compact, IPX8 design.
- Dual Watch and Triple Watch functions.
- Dedicated channel 16 Emergency button.
- International channel set.
- GMDSS Transmit Power: 2.5/1 watt.
- User adjustable Squelch setting.
- Backlit LCD.
- Channel scanning.
- GMDSS Single Use Primary Battery.
- Rechargeable Battery.
- 110–240v 5Vdc Power Adapter.

PRODUCT INFORMATION

- Adapter: PS009
- Input: 100-240VAC, 50/60Hz, 0.35A;
- Output: 5.0VDC, 2.0A
- Charging dock: Model BC510, Input: 5.0VDC, 2.0A; Output: 7.4VDC, 1.0A;
- Interphone: 7.4VDC, 1.5A (for rechargeable battery)
- 6.0VDC, 2A (for non-rechargeable battery)

GENERAL INFORMATION

Your GX510 is a SOLAS approved Survival Craft Emergency Transceiver designed to be used to contact search and rescue or alert other mariners to the operators distress. GME Pty Ltd has a proud history in marine safety products designed for the search and rescue of human lives and property. For this product to be effective, it is critical that it is handled, maintained, serviced, operated and stowed in accordance with this manual. Please read this manual thoroughly to ensure you get the best from your GX510.

OPERATING REQUIREMENTS

Many countries require operators of VHF marine radios to hold a valid certificate of proficiency, typically earned through a training course and examination.

This ensures proper use of radio equipment and compliance with local regulations. Always check your local maritime authority for specific requirements.

WARNING: SAFETY INFORMATION

- Always operate the radio in accordance with the instructions supplied.
- Always ensure an antenna is connected before transmitting to prevent possible damage to the radio.
- Do not allow children to operate a radio transmitter unsupervised.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information visit <http://www.p65warnings.ca.gov/>

OPERATING RULES

Priorities

Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.

You must monitor Channel 16 when you are not operating on another channel.

False or fraudulent distress calls are prohibited under law.

RF RADIATION PROFILE

Your radio is designed and tested to comply with a number of national and international standards and guidelines regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE and ANSI (for 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 47 CFR Part 2 (2.1093) 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 and EN 50566 requirement. This Product has been evaluated for compliance with the FCC RF Exposure limits given in CFR Part 1.307(b) at a distance of greater than 2.5cm.

- Do not operate this radio without the antenna attached or with a damaged antenna.
- Always operate the radio with the antenna at least 2.5cm away from your head and do not transmit for more than 50% of the total time the radio is used.

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 and Marine Equipment Directive (MED) 2014/90/EU.

NOTE: 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 and Marine Equipment Directive (MED) 2014/90/EU [EU Regulatory Conformance](#)
EU Declaration of Conformity is available at the following link: www.gme.net.au



FCC REGULATIONS

The Federal Communications Commission (FCC) requires that all radio communication equipment meet applicable standards before being marketed in the United States. This device complies with the Global Maritime Distress and Safety System (GMDSS) provisions of Part 80 of the FCC rules.

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

UK REGULATION

The Radio is approved under the UK Marine Equipment Regulations, MSN(M+F)1874 as amended.

CANADA REGULATION

This device complies with the applicable Innovation, Science and Economic Development Canada (ISED) Radio Standards Specifications, including RSS-182 and RSS-GEN for maritime radio equipment.

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."

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;

Declaration of Conformity.

The information listed below 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

Third-party 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): 0.290 and 0.353W/Kg.

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.

CONTROLS



GMDSS Configuration



Normal VHF Operation



Battery compartment release clip

Belt Clip

Battery Connector

Desktop Charging Terminals

Battery Pack Clip

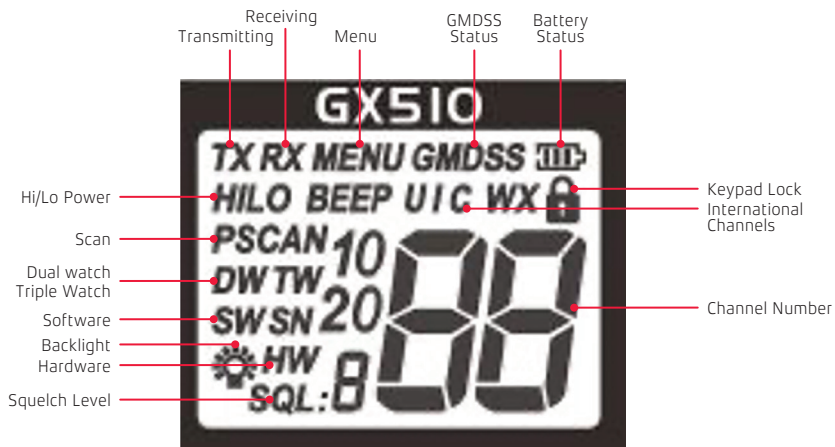
Rechargeable Battery









GMDSS Battery



DISPLAY ICONS



KEY FUNCTIONS

KEY	SHORT PRESS (< 3 SECS)	LONG PRESS (> 3 SECS)
	UP Key	Continuous Up
	DOWN Key	Continuous Down
	Set SQL Level	Enter Scan
	Switch High Power/ Low Power	Enter Menu Mode
	Dual Watch	Triple Watch
	Enter 16 channel	Enter calling Channel

BATTERY PACK OPTIONS

The GX510 has the option of two battery types.

GMDSS Battery - (GX510P)

Non-rechargeable primary lithium battery pack (BP510P). This is a single use battery intended to be used solely in the event of an emergency.

Rechargeable Battery - (GX510R)

Li-ion rechargeable battery (BP510R) will allow the GX510 to function as a normal 5W VHF Transceiver with International channel set.

RECHARGEABLE BATTERY INSTALLATION

Battery Installation

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

Battery Removal

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



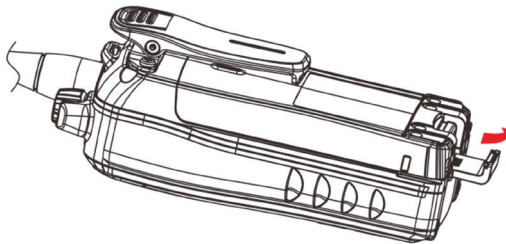
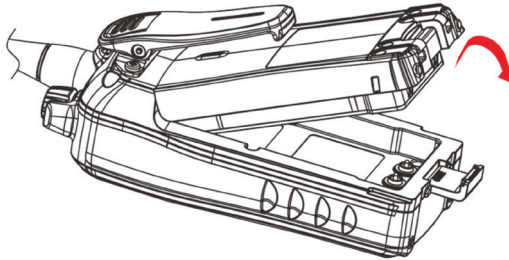
Battery Removal

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

Battery Installation

Remove the security label from the battery and carefully inspect that metal contacts are exposed.

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



Caution:

- Risk of explosion if battery is replaced by an incorrect type.
- Dispose of used batteries according to the local regulations..
- Adapter shall be installed near the equipment and shall be easily accessible.
- The device operating temperature range is -20~+55°C (-4~131°F)
- The charging temperature of the battery at the charging dock ranges from 0°C~+45°C (32~113°F)

Using the Desktop Charger

Your GX510 is supplied with a desktop charger unit (BC510), an AC plug pack charger (PS009/PS006) and a USB charging cable. Connect the USB cable to the AC charger and plug the AC charger into the mains supply. Connect the USB cable's USB-C connector to the socket on the rear of the charging cradle. The Red LED on the charging cradle will illuminate and flash slowly. Place the GX510 into the cradle with the display facing forward. The LED on the charging cradle will change to solid Red. Once the battery has charged the LED will change to Green. A fully discharged battery should achieve full charge.

ON/OFF

To turn ON, rotate the volume knob clockwise. The radio will briefly illuminate the LCD then switch on. The last selected channel, volume and squelch settings are restored.

VOLUME


To increase the volume the ON/OFF knob is rotated clockwise and anti-clockwise to decrease.

CHANNEL SELECTION

Briefly press the ▲ key to step upwards one channel or the ▼ key to step downwards one channel. A beep will be heard with each key press and the channel number will change to indicate the selected channel. Press and hold the ▲ or ▼ key for 2 seconds to quickly step upwards or downwards through the channels at a rate of 10 channels per second. During this time the channel display will update to show progress. When the display nears the desired channel, release the key then individually press the ▲ or ▼ keys to select the channel.

SQUELCH

The GX510 has a squelch function to ensure the radio remains quiet when there are no signals being received. When a signal is received the squelch opens to allow the signal to be heard. When the signal has gone the squelch closes again and the receiver becomes quiet.

To adjust squelch, briefly press the  key. A beep will be heard, and the current setting will flash. Press the ▲ or ▼ to adjust the setting. Setting 0 will fully open the squelch and you will hear the receiver's background 'hiss', whilst also displaying the squelch is open the RX icon is displayed.

The preset squelch level determines the sensitivity of the squelch to incoming signals. If you are in a noisy location or unwanted weak signals keep opening the squelch, you can increase the preset squelch sensitivity so the GX510 remains quiet. Note that increasing the preset squelch level will require stronger signals to overcome the squelch and may result in missed calls from weaker signals. The optimum setting is the minimum one required to reliably keep the receiver quiet. The Squelch setting has a range from 0 to 9, with 0 being the minimum (most sensitive) level.

TRANSMITTING

To transmit, press the Push-To-Talk (PTT) key. The TX icon will appear on the LCD to indicate the radio is transmitting. Hold the radio in front of you with the microphone about 5 cm from your face and speak at a normal voice level. The microphone is quite sensitive so it is not necessary to raise your voice or shout. For best performance speak across the microphone rather than directly into it. Release the PTT when you have finished talking. The TX icon will disappear.

NOTE: Transmissions are inhibited on some channels that are configured as 'Receive-only' or 'Data-only'.


The GX510 incorporates a time-out-timer to automatically disable the transmitter if the PTT has been pressed continuously for more than 5 minutes. This is designed to prevent accidental jamming of the channel frequency. If you release the PTT during this period, the time-out timer will be reset and you can begin retransmitting immediately.




Release the PTT to reset the timer and re-enable the transmitter

CHANNEL 16

Channel 16 is the international Distress, Safety and Calling channel. If you need to call for help in an emergency or are seeking relevant information from your local marine rescue base, use channel 16.

If the call is for an emergency you will probably be asked to stay on channel 16 so others can provide assistance but for less serious incidences you will probably be transferred to a designated working channel.




Press the  key at any time to go directly to channel 16. The transmit power will be restored to HI (5 Watts) and all other functions such as Scan, Dual Watch and Triple Watch will be cancelled.

Press the  key again to return to the previously selected channel. Alternatively, press the  or  keys to manually select a different channel.

TRANSMIT POWER

The GX510 has both high power (5 Watts) and low power (1 Watt) transmitter settings. For local transmissions a low power setting will conserve power and reduce interference to nearby stations. If you require the best transmission range you should select a high power setting. The default setting is high (5 Watts).

To Set the Transmitter Power





Briefly press the  key to toggle high or low power. When high power is selected, a beep will be heard and the  icon will be displayed. When low power is selected, a beep will be heard and the  icon is displayed.

NOTE: High power (5 Watts) will be restored whenever Channel 16 is selected.

DISPLAY BACKLIGHTING

The LCD backlight will automatically illuminate whenever a key is pressed then extinguish 10 seconds after the key is released.




If desired, the automatic backlighting can be disabled so that it remains off even when a key is pressed. The backlight intensity can be adjusted in the menu settings.

To enable or disable hold the  for 2 seconds and a flashing bulb icon will appear. To increase brightness press the  and  to decrease brightness. Press and hold  for 2 seconds to exit the menu

DUAL WATCH (DW)

Dual Watch is a two channel scan feature that switches between your selected working channel and channel 16. This allows you to monitor your working channel while maintaining a listening watch on channel 16.


To Start Dual Watch

1. Select your preferred working channel using the  or  keys.
2. Briefly press the  key.

A beep will be heard and the DW icon will be displayed. Your GX510 will now monitor your working channel and channel 16 to check for transmission. Any signals on channel 16 will have priority over those on the working channel.

Receiving in DW Mode


During normal DW operation if you press PTT key, and the default channel will be the Working Channel. If a signal is

received on channel 16 whilst also receiving a signal on the Working Channel, the radio will switch immediately to channel 16 as a priority. The working channel will not be received whilst there is a signal being received on channel 16. At the end of the transmission on channel 16 the GX510 will pause for 2 seconds. If the PTT key is pressed whilst the Radio has paused, the radio will transmit on channel 16. If required, press the  key and the GX510 will leave DW and remain on channel 16.

Transmitting in DW mode

During this time the PTT key may be pressed for normal transmissions on the working channel.

To Cancel Dual Watch





Briefly press the  key and beep will be heard. The DW icon will disappear.

TRIPLE WATCH (TW)




Triple Watch is an extension of the Dual Watch function that monitors three channels i.e. channel 16, Triple Watch channel, and your working channel. Each channel is scanned for signals with priority given first to channel 16, then the Triple Watch channel and finally the Working channel.

When Triple Watch is selected TW is displayed along with the Working channel, with the display quickly switching to channel 16 and the Triple Watch channel


To Store your Triple Watch channel

1. Long press the  key and then press the menu key to twice. Two flashing digits will appear
2. Select the desired channel using the  or  key
3. Long press the  key to exit the menu.

To Activate Triple Watch Mode:

1. Select your preferred working channel using the  or  Keys
2. Long press the  Key A beep will be heard, and the TW icon will be displayed. Your GX510 will now monitor your Working channel, TW channel and channel 16

To Cancel Triple Watch

Press and hold the  key. A beep will be heard and normal operation will be restored.

Receiving in TW mode

During normal TW operation if you press PTT button, and the default channel will be the Working channel. If a signal is received on the Triple Watch channel the GX510 will pause for 2 seconds. If the PTT is pressed the GX510 channel will transmit on the Triple Watch channel. After 2 seconds the radio will continue in TW mode. If a signal is received on the Working Channel the GX510 will pause for 2 seconds. If the PTT is pressed the GX510 channel will transmit on the Working channel. After pausing the radio will continue in TW mode.

Whilst receiving a signal on either the Working channel or Tripple Watch channel, the radio will continually scan channel 16 as a priority. If a signal is received on channel 16 the GX510 will immediately listen to channel 16. The working channel or Triple Watch channel will not be received whilst there is a signal being received on channel 16. At the end of the transmission on channel 16 the GX510 will pause for 2 seconds. If the PTT button is pressed whilst the GX510 has paused, the GX510 will transmit on channel 16. After pausing the radio will resume normal TW operation.

If required, press the  key and the GX510 will leave TW and remain on channel 16.


Transmitting in TW mode

During normal TW operation if you press PTT key, and the default channel will be the Working channel. To transmit on the Tripple watch channel will need to exit TW and move to that channel, however, upon receiving a Tripple Watch signal the operator can press PTT key whilst the GX510 had paused which will allow the operator to transmit on the Tripple Watch channel without exiting.

SCANNING

The Scan feature allows the GX510 to scan channels looking for signals. If a signal is found, scanning will pause on that channel and will remain there for as long as the channel is busy and for 5 seconds after the signal has gone. Scanning will then resume.

To Begin Scanning



Long press the  Key

The GX510 will begin scanning and the display show rapidly changing channel numbers. If a signal is found, the scan will pause on that channel. the scan is paused on a busy channel you may the PTT to transmit on that channel.

To Stop Scanning




Long press the  key. The GX510 will stop scanning and will return to the last selected channel.

Locking and Unlocking Keys

To lock the keypad, long hold the  key and  key at the same time for 2 seconds. All the keys except PTT have been deactivated. Repeat the same steps to unlock the radio and all keys will be reactivated.

MENU Options


Entering the Menu

To enter the menu, long press  key once to enter the menu mode. To move through the menu with out making a change short press . To exit menu mode, long press the  key to exit.

Screen Brightness

The first menu is to set backlight brightness level. Using the   to adjust the backlight brightness level, short press  once to confirm and enter the second item


VHF Channel Set Selection

To set frequency band, using the ▲▼ key to select VHF band among U,I,C. A short press  confirms the selection and enter the Third menu item


Triple Watch Calling Channel.

The Triple Watch channel which can be adjusted by pressing ▲▼ key, short press  once to confirm and enter the fourth menu item.

Keys Tone Beep volume

To adjust Key Tone volume, you can press ▲▼ key to adjust the setting . Short press  once to confirm and enter the fifth item.


Hardware Version

The hardware version is displayed on the fifth screen. Short press  once to enter the 6th item

Software Version

The software version is displayed on the 6th screen. Short press  once to enter the 7th item

Serial Number

The serial number is displayed on the 7th screen. Long press  once to exit the

GMDSS VHF Channels & Frequencies

When the GMDSS battery is fitted, the radio automatically switches to GMDSS mode.

CH	TX Freq	RX Freq	Simplex	Use
6	156.3	156.3	x	Inter-ship [1]
8	156.4	156.4	x	Inter-ship
9	156.45	156.45	x	Inter-ship, Port Operations and Ship Movement
10	156.5	156.5	x	Inter-ship, Port Operations and Ship Movement [2]
11	156.55	156.55	x	Port Operations and Ship Movement
12	156.6	156.6	x	Port Operations and Ship Movement
13	156.65	156.65	x	Inter-ship Safety, Port Operations and Ship Movement [3]
14	156.7	156.7	x	Port Operations and Ship Movement
15	156.75	156.75	x	Inter-ship and On-board Communications at 1W only [4]
16	156.8	156.8	x	Distress, Safety and Calling
17	156.85	156.85	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 CHANNEL AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	Use
6	156.3	156.3	x	Inter-ship [1]
8	156.4	156.4	x	Inter-ship
9	156.45	156.45	x	Public Correspondence, Port Operations and Ship Movement
10	156.5	156.5	x	Public Correspondence, Port Operations and Ship Movement [2]
11	156.55	156.55	x	Port Operations and Ship Movement
12	156.6	156.6	x	Port Operations and Ship Movement
13	156.65	156.65	x	Inter-ship Safety, Port Operations and Ship Movement [3]
14	156.7	156.7	x	Port Operations and Ship Movement
15	156.75	156.75	x	Inter-ship and On-board Communications at 1W only [4]
16	156.8	156.8	x	Distress, Safety and Calling
17	156.85	156.85	x	Inter-ship and On-board Communications at 1W only [4]
1019	156.95	156.95	x	Public Correspondence, Port Operations and Ship Movement
2019	161.55	161.55		Public Correspondence, Port Operations and Ship Movement
1020	157	157	x	Public Correspondence, Port Operations and Ship Movement
2020	RX Only	161.6		Public Correspondence, Port Operations and Ship Movement
1027	157.35	157.35	x	Channel is divided into 2027 (Licenced analogue communication) and 2028 (Analogue communication forbidden)
1028	157.4	157.4	x	
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
1078	156.925	156.925	x	Public Correspondence, Port Operations and Ship Movement
2078	RX Only	161.525	x	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
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:

- 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.
- 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.
- Channel 13 is designated for use on a worldwide basis as a navigation safety communication channel, primarily for inter-ship navigation safety communications.
- Channels 15 and 17 may also be used for on-board communications provided the effective radiated power does not exceed 1 Watt.
- 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	Use
1001	156.05	156.05	X	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
1005	156.25	156.25	X	Port Operations or VTS in the Houston, New Orleans and Seattle areas
6	156.3	156.3	X	Intership Safety
1007	156.35	156.35	X	Commercial
8	156.4	156.4	X	Commercial (Intership only)
9	156.45	156.45	X	Boater Calling. Commercial and Non-Commercial
10	156.5	156.5	X	Commercial
11	156.55	156.55	X	Commercial. VTS in selected areas
12	156.6	156.6	X	Port Operations. VTS in selected areas
13	156.65	156.65	X	Intership Navigation Safety (Bridge-to-bridge). Ships >20m length
14	156.7	156.7	X	Port Operations. VTS in selected areas
15	--	156.75		Environmental (Receive only). Used by Class C EPIRBs
15	RX Only	156.75	X	Inter-ship and On-board Communications at 1W only
16	156.8	156.8	X	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch
17	156.85	156.85	X	State & local govt maritime control
1018	156.9	156.9	X	Commercial
1019	156.95	156.95	X	Commercial
20	157	161.6		Port Operations (duplex)
1020	157	157	X	Port Operations
1021	157.05	157.05	X	U.S. Coast Guard only
1022	157.1	157.1	X	Coast Guard Liaison and Maritime Safety Information Broadcasts.
1023	157.15	157.15	X	U.S. Coast Guard only
24	157.2	161.8		Digital – Channel is blocked for analogue communication
25	157.25	161.85		Digital – Channel is blocked for analogue communication
26	157.3	161.9		Satellite – Channel is blocked for analogue communication
27	157.35	161.95		Channel is divided into 2027 (Licenced analogue communication) and 2028 (Analogue communication forbidden)

U.S. MARINE VHF CHANNELS AND FREQUENCIES cont.

CH	TX Freq	RX Freq	Simplex	Use
27	157.35	161.95		
28	157.4	162		Channel is divided into 2027 (Licenced analogue communication) and 2028 (Analogue communication forbidden)
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. Intership 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 (Intership 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 (Intership only)
1078	156.925	156.925	X	Non-Commercial
1079	156.975	156.975	X	Commercial. Non-Commercial in Great Lakes only
80A	157.025	157.025	X	Commercial. Non-Commercial in Great Lakes only
1080	157.025	157.025	X	
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		Digital – Channel is blocked for analogue communication
85	157.275	161.875		Digital – Channel is blocked for analogue communication
86	157.325	161.925		Satellite – Channel is blocked for analogue communication
2086	161.925	161.925	X	
87	157.375	157.375	X	Public Correspondence (Marine Operator)
88	157.425	157.425	X	Commercial, Intership only

- Recreational boaters normally use channels listed as Non-Commercial: 68, 69, 71, 72, 78A.
- Channel 70 is used exclusively for Digital Selective Calling (DSC) and is not available for regular voice communications.
- Channels 75 and 76 are reserved as guard bands for Channel 16 and are not available for regular voice communications.

Notes:

- The letter "A" 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.
- 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.
- Channel is Receive Only.
- Channel 16 is used for calling other stations or for distress alerting.
- Output power is fixed at 1 watt only.
- 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	Simplex	Use
1	156.05	160.65		PC Public Correspondence
2	156.1	160.7		PC Public Correspondence
3	156.15	160.75		PC Public Correspondence
1004	156.2	156.2	x	PC Inter-ship, Ship/Shore and Safety: Canadian Coast Guard S&R
1005	156.25	156.25	x	Ship Movement
6	156.3	156.3	x	All areas Inter-ship, Commercial, Non-commercial and Safety: May Be used for search and rescue communications between ships and aircraft.
1007	156.35	156.35	x	All areas Inter-ship, Ship/Shore, Commercial
8	156.4	156.4	x	WC, EC Inter ship, Commercial and Safety: Also assigned for operations in the Lake Winnipeg area.
9	156.45	156.45	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	156.5	156.5	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	156.55	156.55	x	PC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Also used for pilotage purposes.
12	156.6	156.6	x	WC, AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and messages.
13	156.65	156.65	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	156.7	156.7	x	AC, GL Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: Port operations and pilot information and Messages.
15	156.75	156.75	x	All areas Inter-ship, Ship/Shore, Commercial, Non-commercial and Ship Movement: All May also be used for on-board Communications.
15	156.75	156.75	x	Inter-ship and On-board Communications at 1W only [4]
16	156.8	156.8	x	All areas International Distress, Safety and Calling.
17	156.85	156.85	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.
17	156.85	156.85	x	Inter-ship and On-board Communications at 1W only [4]
1018	156.9	156.9	x	All areas Inter-ship, Ship/Shore and Commercial: Towing on the Pacific Coast.

CANADIAN MARINE VHF CHANNELS AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	Use
1019	156.95	156.95	x	All areas except PC Inter-ship and Ship/Shore: Canadian Coast Guard only.
20	157	161.6		All areas Ship/Shore, Safety and Ship Movement: Port operation
1021	157.05	157.05	x	All areas Inter-ship and Ship/Shore: Canadian Coast Guard only.
2021	RX Only	161.65		All areas Safety: Continuous Marine Broadcast (CMB) service.
1022	157.1	157.1	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	157.15	161.75		PC Ship/Shore and Public Correspondence: Also in the inland waters of British Columbia and the Yukon.
2023	RX Only	161.75		
24	157.2	161.8		PC Public Correspondence
25	157.25	161.85		PC Public Correspondence
2025	RX Only	161.85		PC Public Correspondence
26	157.3	161.9		PC Public Correspondence
27	157.35	161.95		PC Public Correspondence
28	157.4	162		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.
1061	156.75	156.075	x	
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
1063	156.175	156.175	x	
64	156.225	160.825	x	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.

CANADIAN MARINE VHF CHANNELS AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	Use
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
1078	156.925	156.925	x	
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
1080	157.025	157.025	x	
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

CANADIAN MARINE VHF CHANNELS AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	Use
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

Table Footnotes

EC	- East Coast (NL, AC, GL, and Eastern Arctic areas)	IS	Intership
NL	- Newfoundland and Labrador	SS	Ship / Shore
AC	- Atlantic Coast, Gulf and St. Lawrence River to and including Montreal	C	Commercial
GL	- Great Lakes including the St. Lawrence above Montreal	NC	Non-Commercial
WC	- West Coast (BCC, Western Arctic, and Athabasca-Mackenzie Watershed areas)	S	Safety
BCC	- British Columbia Coast (Pacific Coast)	SM	Ship Movement
Inland BC	- Inland Waters of BC and the Yukon	PC	Public Correspondence
Inland PRA	- Inland Waters of MB, SK, and AB	AIS	Automatic Ship Identification
		VTS	Vessel Traffic Services

Transmitter

Type	Description
GMDSS High Power	2.5 W
Low Power	1
TX Frequencies Error	±5 ppm
Modulation Limiting Deviation	≤ ±5 KHz
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	≤40
Microphone Sensitivity	13±3 mV
Spurious and Harmonic & Response	≤-36 dBm
Modulation Mode:	FM (16K0G3E)
Current Drain GMDSS Transmit (High)	≤1.0 A
Current Drain Transmit (Low)	≤0.8 A

Receiver

Type	Description
RX Sensitivity For 12dB SINAD	≤6(EMF) dBμV
Squelch:	
a) Squelch sensitivity	<-6.0(EMF) dBμV
b) (Depth squelch) squelch tight	≤+6(EMF) dBμV
c) SQ Hysteresis	3-6 dB
Rated audio output at 10% Thd Speaker	≥700 mW
RX S/N ratio	≥40 dB
RX Audio frequency resp. dB 1000Hz/0dB ref	+1 dB to -3 dB of 6 dB octave from 300-3000 Hz
Adjacent Channel Rejection	≥70 dB
Image rejection(58.05Mhz/450KHZ)	≥70 dB
Intermodulation rejection (3-Gen.Method)	≥65 dB
Spurious response rejection	≥70 dB
Current Drain Maximum Audio Power	≥700 mW
Standby Current	≤60 mA

General

Type	Description
GMDSS Frequency coverage	156.300 – 157.425 MHz
Frequency stability:	$\leq \pm 5$ ppm
Duty cycle	TX10%, RX10%, Stand-by 80%
Power supply voltage:VHF/GMDSS	DC6.0V
Operating temperature	-20°C to +55°C
Dimensions (projections not included):	129.14mm x 58.43mm x 39.53mm

Transmitter

Type	Description
VHF High Power	5 W
Low Power	1
TX Frequencies Error	±5 ppm
Modulation Limiting Deviation	≤ ±5 KHz
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	≤40
Microphone Sensitivity	13±3 mV
Spurious and Harmonic & Response	≤-36 dBm
Modulation Mode	FM (16K0G3E)
Current Drain VHF Transmit (High)	≤1.4 A
Current Drain Transmit (Low)	≤0.8 A
Battery Lifetime (Tx5%/ Rx 5%/ standby 90%)	≥10H

Receiver

Type	Description
RX Sensitivity For 12dB SINAD	≤ -6(EMF) dBμV
Squelch:	
a) Squelch sensitivity	<-6.0(EMF) dBμV
b) (Depth squelch) squelch tight	≤+6(EMF) dBμV
c) SQ Hysteresis	3-6 dB
Rated audio output at 10% Thd Speaker	≥700 mW
RX S/N ratio	≥40 dB
RX Audio frequency resp. dB 1000Hz/0dB ref	+1 dB to -3 dB of 6 dB octave from 300-3000 Hz
Adjacent Channel Rejection	≥70 dB
Image rejection(58.05Mhz/450KHZ)	≥70 dB
Intermodulation rejection (3-Gen.Method)	≥65 dB
Spurious response rejection	≥70 dB
RX Maximum Audio Current	< 500mA
Standby Current	<50 mA

General

Type	Description
VHF Frequency coverage	TX: 156.025 - 161.925 RX: 156.050 - 162.000 MHz
Frequency stability:	$\leq \pm 5$ ppm
Power supply voltage; VHF	DC7.4V
Operating temperature	Charge: 0°C to +40°C Discharge: -20°C to +55°C
Dimensions (projections not included):	129mm(H) x 58mm(W) x 40mm(D)

GME CONTRACT WARRANTY AGAINST DEFECTS

This warranty against defects is given by GME Pty Ltd ACN 000 346 814 (We, us, our or GME). Our contact details are set out in clause 2.7. This warranty statement only applies to products purchased in Australia. Please contact your local GME distributor for products sold outside of Australia. Local distributor details at www.gme.net.au/export.

1. Consumer guarantees

- 1.1 Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
- 1.2 To the extent we are able; we exclude all other conditions, warranties and obligations which would otherwise be implied.

2. Warranty against defects

- 2.1 This warranty is in addition to and does not limit, exclude or restrict your rights under the Competition and Consumer Act 2010 (Australia) or any other mandatory protection laws that may apply.
- 2.2 We warrant our goods to be free from defects in materials and workmanship for the warranty period (see warranty table) from the date of original sale (for another period we agree to in writing). Subject to our obligations under clause 1.2, we will at our option, either repair or replace goods which we are satisfied are defective. We warrant any replacement parts for the remainder of the period of warranty for the goods into which they are incorporated.
- 2.3 To the extent permitted by law, our sole liability for breach of a condition, warranty or other obligation implied by law is limited.
- (a) in the case of goods we supply, to any one of the following as we decide –
- (i) the replacement of the goods or the supply of equivalent goods;
 - (ii) the repair of the goods;
 - (iii) the cost of repairing the goods or of acquiring equivalent goods;
- (b) in the case of services we supply, to any one of the following as we decide -
- (i) the supplying of the services again;
 - (ii) the cost of having the services supplied again.
- 2.4 For repairs outside the warranty period, we warrant our repairs to be free from defects in materials and workmanship for three months from the date of the original

repair. We agree to re-repair or replace (at our option) any materials or workmanship which we are satisfied are defective.

- 2.5 We warrant that we will perform services with reasonable care and skill and agree to investigate any complaint regarding our services made in good faith. If we are satisfied that the complaint is justified, and as our sole liability to you under this warranty (to the extent permitted at law), we agree to supply those services again at no extra charge to you.
- 2.6 To make a warranty claim you must before the end of the applicable warranty period (see warranty table), at your own cost, return the goods you allege are defective, provide written details of the defect, and give us an original or copy of the sales invoice or some other evidence showing details of the transaction.
- 2.7 Send your claim to:
- GME Pty Ltd,
PO Box 96, Winston Hills, NSW 2153, Australia.
Tel: 1300 463 463
Email: servadmin@gme.net.au

- 2.8 If we determine that your goods are defective, we will pay for the cost of returning the repaired or replaced goods to

3. What this warranty does not cover

- 3.1 This warranty will not apply in relation to:
- (a) goods modified or altered in any way;
 - (b) defects and damage caused by use with non GME products;
 - (c) repairs performed other than by our authorised representative;
 - (d) defects or damage resulting from misuse, accident, impact or neglect;
 - (e) goods improperly installed or used in a manner contrary to the relevant instruction manual; or
 - (f) goods where the serial number has been removed or made illegal.

4. Warranty period

- 4.1 We provide the following warranty on GME and Kingray products. No repair or replacement during the warranty period will renew or extend the warranty period past the period from original date of purchase.

PRODUCT TYPE	WARRANTY PERIOD
GXS10 Marine radios	3 years



gme.net.au
GME Pty Ltd