GX800

5/1 WATT HANDHELD VHF MARINE RADIO

CONTENTS

INTRODUCTION

Congratulations on purchasing this GME fully featured VHF marine radio. Your GX800 has been built to offer excellent value by combining advanced features, great design and manufacturing quality. To ensure you are familiar with the operation and features of your radio, and in order to obtain the best performance, please read this manual thoroughly before operation.

FEATURES

- Waterproof to IP67
- 5/1 watt Switchable Power
- Large LCD
- Private Channel Facility
- Programmable Scan, Priority Scan, Dual and Tri Watch
- All International, US and Canadian Marine VHF Channels
- Weather channels on US and Canadian bands
- Integrated 1700 mAh Lithium Polymer Battery

SUPPLIED WITH

- GX800 Handheld Marine Radio
- Belt Clip
- 240V AC Charger
- Wrist Strap
- High Gain Flexible Antenna
- Instruction Manual

OPTIONAL ACCESSORIES

- MB046 – Belt Clip
- PSK20U – Plug Pack for 9V1A
- AE4024 – Flexible Antenna
- CSGX800 – Cap and Seal
- LS800 – Programming Lead

IMPORTANT: *Read all instructions carefully and completely before operating your radio and retain this manual for future reference.*

To maintain the waterproof integrity of the radio;

- Ensure the antenna and the connector cover are
  both firmly tightened against the rubber seal (refer to the diagram on page 5).

- Never attempt to disassemble the radio.

NEVER: connect the radio to a power source other than the supplied battery. This may damage your product.

NEVER: operate your radio with the antenna less than 5 cm from exposed parts of the body.

NEVER: use or charge your radio in a potentially explosive atmosphere.

DO NOT: use your radio with a damaged antenna.

DO NOT: attempt to modify your radio in any way.

ALWAYS: charge your radio at normal room temperature.

ALWAYS: switch off your radio where notices restrict the use of two-way radio or mobile telephones.

AVOID: storing or charging your radio in direct sunlight.

AVOID: storing or using your radio where temperatures are below -20º C or above +60º C.

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 authorised 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 requirements.

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 US, 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 your 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.

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 1999/5/EC. Please note that the above information is applicable to EU countries only.

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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.

Privacy

- Information overheard but not intended for you cannot lawfully be used in any way.

- Indecent or profane language is prohibited.

RADIO LICENCES

Ship Station License

When your craft is equipped with a VHF FM radio, you must have a current radio station licence before using the radio. It is unlawful to operate a ship station which is not licensed. Inquire through your dealer or the appropriate government agency for a Ship-Radiotelephone license. This license includes the call sign which is your craft's identification for radio purposes.

Operators License

A restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes. The restricted Radiotelephone Operator Permit must be posted near the radio or be kept with the operator.

Only a licensed radio operator may operate a radio. However, non-licensed individuals may talk over a radio if a licensed operator starts, supervises, ends the call and makes the necessary log entries.

A current copy of the applicable government rules and regulations is only required to be on hand for vessels in which a radio telephone is compulsory. However, even if you are not required to have these on hand it is your responsibility to be thoroughly acquainted with all pertinent rules and regulations.
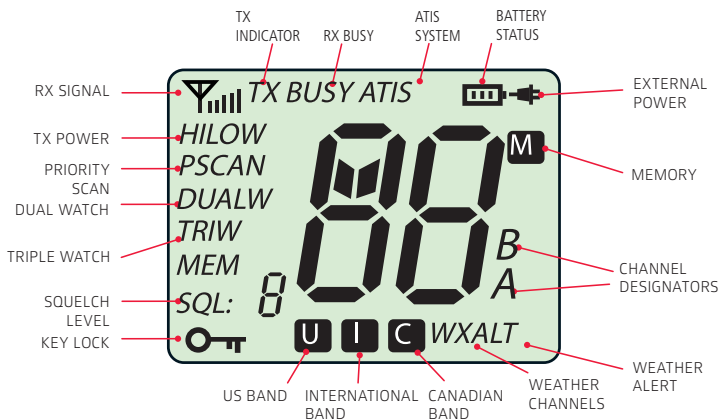
The range of VHF transmissions depends on antenna height, transmitter power and the terrain over which the signals pass. For a 5 watt handheld radio like the TX800, ship to ship communications up to 5 nautical miles should be possible. Using an external antenna should allow ship to ship communication of 8 nautical miles or more. Ship to shore ranges will often be greater due to the increased height of the shore antenna.

CONTROLS

ANTENNA

VOLUME ON/ OFF

CONNECTOR COVER

RUBBER SEAL

PUSH TO TALK

SQUELCH

DISPLAY

PRIVATE CHANNELS/ CHANNEL SET

UP

WEATHER / ALERT

CH 16

HI / LO POWER KEY LOCK

SCAN

DOWN

MEMORY

DUAL WATCH / TRIPLE WATCH

GX800

TX INDICATOR
RX BUSY
ATIS SYSTEM
BATTERY STATUS

RX SIGNAL
TX POWER
PRIORITY SCAN
DUAL WATCH
TRIPLE WATCH
SQUELCH LEVEL
KEY LOCK

EXTERNAL POWER
MEMORY
CHANNEL DESIGNATORS
WEATHER ALERT

US BAND
INTERNATIONAL BAND
CANADIAN BAND
WEATHER CHANNELS

TX BUSY ATIS
HILOW
PSCAN
DUALW
TRIW
MEM
SQL: 8
U I C WXALT
M
B
A

KEY FUNCTIONS

KEY	SHORT PRESS	LONG PRESS
Hi/LO [LOCK]	TX Power Hi/Low	Key Lock
16	Channel 16	Secondary Priority Channel
DW [TRIW]	Dual Watch Mode	Triple Watch Mode
WX/ALT	Weather Channel	Weather Alert
SCAN	Scan	Priority Scan
MEM	Memory Mode	Save/Delete Memory Channel
Up/ Down	Channel Up/Down	Fast Up/Down
CH/*/UIC	Private Channel	Band Selection
SQL	Squelch Level Setting	

ROTARY CONTROL

Volume	Power On/Off and Adjust Volume

POWER ON/OFF VOLUME CONTROL

Turn the **Volume** control clockwise past the 'click' to turn the radio on. Continue turning the control clockwise to increase the volume.

Turn the control counter-clockwise to reduce the volume. Continue turning the control counter clockwise past the 'click' to turn the radio off.

SQUELCH

To adjust the Squelch, briefly press the **SQL** key. The present Squelch level will flash. Use the [▲] or [▼] keys to adjust the squelch level from 0 (min) to 9 (max).

Press the **SQL** key again to save the new setting.

CHANNEL-SET

The GX800 supports the International, US and Canadian channel sets. When operating outside the US or Canada the International channel-set should be selected.

To select the desired channel-set, press and hold the [CH/*UIC] key. The radio will beep and the selected channel-set icon
will be displayed below the channel display

ICON	CHANNEL SET
U	US
I	INTERNATIONAL
C	CANADA

CHANNEL SELECTION

Briefly press the [▲] key to step upwards one channel or
the [▼] key to step downwards one channel. Press and hold the [▲] or [▼] keys to scroll quickly through the channels at a faster rate. When the keys are released the channel scrolling stops.

Weather Channels (US & Canadian Channel Set)

The US NOAA weather channels are available only when the US or Canadian Channel Sets are selected. Weather channels are not available on the International marine channels. To access the weather channels while on the US or Canadian channel sets, briefly press the [WX/ALT] key. The radio will switch to the weather channels and the 'WX' icon will appear. Weather channels are numbered 01 – 10 and are selected using the [▲] or [▼] keys. To return to the normal communications channels briefly press the [WX/ALT] key again.

Note: *Weather channels provide a receive-only weather information service in and around the US and Canada. You cannot transmit on the weather channels.*

Weather Alert Function (US & Canada)

When a weather warning is issued in your area the NOAA weather service will transmit a weather alert tone on the local weather channel. If you have enabled the weather alert function on your radio, the reception of this tone will cause a short alarm tone to sound and the radio will automatically tune to the selected weather channel. The weather alert should be detected in all the modes of operation including Standby, Dual and Tri-watch and Scan etc.

To use the Weather Alert Function;

1. Briefly press the [WX/ALT] key to select the weather channels. 'WX' is displayed.

2. Use the [▲] or [▼] keys to select the local weather channel that you wish to monitor for alerts.

3. Press and hold the [WX/ALT] key to enable the weather alert function. 'ALT' will appear in the lower right of the display.

4. Briefly press the [WX/ALT] key again to return to normal operation.

When the weather alert function is enabled the radio will check the selected weather channel every 4 seconds for a weather alert tone. If an alert tone is detected, the radio will sound a short alarm, the 'WX' and 'ALT' icons will flash and the radio will automatically tune to the selected weather channel to allow you to hear the weather warning.

To disable weather alerts, press and hold the [WX/ALT] key.
The radio will beep and the 'ALT' icon will disappear from the display.

Private Channels

The GX800 can be programmed with private channels for use by organisations that have been officially allocated special frequencies within the VHF Marine band. To access private channels programmed into the radio briefly press the [CH/*/UIC] key then press the [▲] or [▼] keys.

Note: This feature is not available to users in Australia and New Zealand. If the $\boxed{\text{CH/*}\atop\text{UIC}}$ key is pressed, an error beep will be heard and '– –' will be displayed. Press the $\boxed{\text{CH/*}\atop\text{UIC}}$ key again to return to normal operation.

16 KEY

The GX800 supports two priority channels.

PRIORITY CHANNEL 16

To switch to Channel 16, briefly press the $\boxed{\textbf{16}}$ key. All previous functions such as scanning or low power will be cancelled and Hi transmit power will be selected. When $\boxed{\textbf{16}}$ the key is used to select channel 16, 'P' is displayed. Briefly press the $\boxed{\textbf{16}}$ key again to return to the last selected channel or press the $\boxed{\blacktriangle}$ or $\boxed{\blacktriangledown}$ keys to switch to the next channel in sequence.

SECOND PRIORITY CHANNEL

To select the second priority channel press and hold the $\boxed{\textbf{16}}$ key. The radio will switch to the second priority channel and 'P' will be displayed.

The second priority channel can be user-programmed to any of the standard marine channels. To program your preferred channel into the second priority channel;

1. Press and hold the $\boxed{\textbf{16}}$ key. The radio will switch to the present second priority channel and 'P' will be displayed

2. Press and hold the $\boxed{\textbf{16}}$ key again. 'P' will disappear and the channel number will flash.

3. Select the required channel using the $\boxed{\blacktriangle}$ or $\boxed{\blacktriangledown}$ keys.

4. Press and hold the $\boxed{\textbf{16}}$ key again. The displayed channel will be stored as your new second priority channel.

HI/LO POWER

Briefly press the $\boxed{\text{HI/LO}\atop\text{LOCK}}$ key to toggle high or low transmitter power. The display will show 'HI' or 'LOW' to confirm the selected power setting.

Note: Some channels may be permanently limited to HI or LOW power by default. If any of these channels are selected you will not be able to change the power setting for that channel. However, for some channels you are allowed to overrule this restriction temporarily – e.g. channels 13 & 67 in the US channel set.

To temporarily select HI power on these channels, hold the PTT then hold the $\boxed{\text{HI/LO}\atop\text{LOCK}}$ key. The radio will switch to HI power. Now while still holding the $\boxed{\text{HI/LO}\atop\text{LOCK}}$ key, release the PTT followed by the $\boxed{\text{HI/LO}\atop\text{LOCK}}$ key. The channel will stay on HI power for as long as you remain on that channel.

KEY LOCK

Press and hold the HI/LO LOCK key to lock the keypad. The 0⌗ icon will be displayed when the keypad is locked and all keys except the PTT and any Distress related keys will be locked.

To unlock the keypad, press and hold the HI/LO LOCK key again. The 0⌗ icon will disappear.

BACKLIGHT

The backlight operates automatically whenever any key (except the **PTT**) is pressed and switches off a few seconds after the last key press. The backlight provides lighting for the display and keypad.

SCANNING

Basic Scan

The basic scan function allows the radio to scan all channels for signals. When a signal is detected the scan pauses to allow the signal to be heard. Once the signal has gone the scan resumes.

To activate the scan function, briefly press the SCAN key. 'SCAN' appears on the display and the channel numbers change rapidly as the radio scans for signals.

To deactivate the scan function, briefly press the SCAN key again. 'SCAN' disappears from the display.

Priority Scan

Priority scan is similar to the basic scan except it regularly inserts channel 16 into the scan. Signals received on channel 16 have priority over signals received on other channels.

To activate the Priority scan function, press and hold the SCAN key. 'PSCAN' appears on the display and the channel numbers change rapidly with channel 16 appearing predominantly in the channel display area.

To deactivate the Priority scan function, briefly press the SCAN key. 'PSCAN' disappears from the display.

Memory Scan

Memory Scan allows you to program a select group of channels for scanning.

To Program Memory Channels

1. Use the ▲ or ▼ keys to select the required channel.
2. Press and hold the MEM key. The M icon appears to the right of the selected channel to confirm the channel is in Memory.

3. Repeat steps 1 and 2 to add further channels to the Scan Memory.

Note: Separate Memories can be stored for US, International and Canadian bands.

To Activate the Memory Scan

1. Briefly press the MEM key. 'MEM' will appear to the left of the display to confirm the radio is now in Memory mode and the channel display will switch to a Memory channel (only Memory channels are displayed while in Memory mode).

2. Briefly press the SCAN key. The radio will begin scanning the Memory channels.

3. To stop scanning; briefly press the SCAN key again.

4. To exit the Memory mode, briefly press the MEM key. 'MEM' will disappear from the display and the radio will return to the last selected channel.

Reviewing Memory Channels

To quickly determine which channels are stored in the Memory;

1. Briefly press the MEM key. 'MEM' will appear to the left of the Channel display.

2. Press the ▲ or ▼ keys to quickly step through the Memory channels. Only channels stored in the Memory will be displayed.

3. To exit from the Memory channels, briefly press the MEM key again. 'MEM' will disappear from the display.

Note: You cannot add or remove channels from the Memory while in the Memory mode. You must exit the Memory mode first.

DUAL WATCH

The Dual Watch function is a 2 channel scan feature where the radio switches between Channel 16 and any other selected channel. This allows you to monitor a working or club channel while still being able to receive important broadcasts on Channel 16.

To use the Dual Watch function

1. Press the ▲ or ▼ keys to select your preferred working channel.

2. Briefly press the DW/TRIW key to activate Dual Watch. 'DUALW' will be displayed and the channel number will quickly alternate between 16 and the selected channel.

- If a signal is received on the selected channel, the Dual Watch will pause to allow the signal to be heard but will continue to monitor channel 16 every 2 seconds resulting in short breaks in the conversation. Once the signal has gone, Dual Watch continues.

- If a signal appears on channel 16 the radio it will lock onto channel 16 and take priority over any signals on the selected channel.

To cancel Dual Watch, briefly press the **DW/TRIW** key.

TRIPLE WATCH

The Triple Watch function is a 3 channel scan feature where the radio switches between Channel 16, a selected channel and the second priority channel. This allows you to monitor 2 channels while still being able to receive important broadcasts on Channel 16.

Note: *Prior to using Triple Watch ensure you have programmed your second priority channel.*

To use the Triple Watch Function

1. Press the **▲** or **▼** keys to select your preferred working channel.
2. Press and hold the **DW/TRIW** key to activate Triple Watch. 'TRIW' will be displayed and the channel numbers will quickly switch between 16, the second priority channel and the selected channel.

If a signal is received on either the selected channel or the second priority channel, the Triple Watch will pause to allow the signal to be heard but will continue to monitor channel 16 every 2 seconds resulting in short breaks in the conversation. Once the signal has gone, Triple Watch continues.

If a signal appears on channel 16 it will take priority over any signals on the other two channels.

To cancel Triple Watch, briefly press the **DW/TRIW** key.

TIME OUT TIMER

The radio has a built-in time out timer that automatically limits transmissions to a maximum of 5 minutes of continuous operation. This feature is required to prevent accidental blocking of the frequency should your **PTT** become jammed or be otherwise pressed accidentally.

When the time out timer activates, the transmission will stop, and the radio will return to receive mode. Normal operation will be restored once the **PTT** is released.

ATIS OPERATION

ATIS stands for Automatic Transmitter Identification System. ATIS is used to identify a ship or vessel that has made a radio transmission. The identity of the vessel is sent digitally each time the radio operator releases the **PTT** after transmitting.

ATIS is generally used in the inland waterways of Europe and is only available when the International channel set is selected.

The use of ATIS requires a unique 9 digit Maritime Mobile Service Identity or MMSI (note that the ATIS MMSI is completely separate to the MMSI required for the DSC functionality included in DSC compatible radios). Radio operators in Europe who require the ATIS function should obtain their unique ATIS MMSI from their local Maritime Authority.

Important: *Once the ATIS ID has been programmed into the radio, the ATIS function is enabled and becomes a permanent part of the radio's operation. It cannot be disabled by the user.*

Programming the ATIS ID

1. Switch the radio Off.

2. Hold the `HI/LO LOCK` key while switching the radio On. The display will show '1 –' where the left character shows the position of the ATIS digit within the ATIS ID (e.g. position 1 of 9) and the right flashing character shows the currently selected value of the ATIS ID digit at that position.

ATIS ID Digit Position
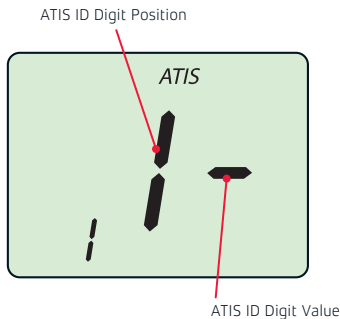
ATIS ID Digit Value

Eg. for ATIS ID 342985532									
DIGIT POSITION	1	2	3	4	5	6	7	8	9
DIGIT VALUE	3	4	2	9	8	5	5	3	2

3. Press the ▲ or ▼ keys to select the value of the flashing digit (0 – 9).

4. Press the MEM key to confirm the selection and move to the next digit.

5. Repeat steps 3 & 4 to enter the entire 9 digit ATIS ID.

6. When the last digit is entered you will be prompted to enter the ATIS ID again (this is to avoid entering an invalid entry).

7. After entering the correct ATIS ID for the second time, the ATIS ID will flash then the radio will revert to normal operation.

Note: If the second ATIS entry doesn't match the first, the operation will be cancelled and you will need to start again.

WATER DISPLACEMENT TECHNOLOGY

WDT allows the GX800W to displace any water trapped in the speaker grill which traditionally can be difficult to remove. This is achieved by emitting a loud resonant tone.To activate WDT press and hold the SCAN key whilst switching on the GX800W. You will be prompted with a beep tone and the letter 'd' will display. Press SCAN to activate WDT and hold the GX800W face down. A loud tone will emit from the speaker for 15 seconds, displacing any water from the speaker grill. When complete the GX800W will resume normal start-up operation.It is recommended to use WDT whenever the GX800W has been submersed in water.

CHARGING THE BATTERY

The battery is a built-in design and is not user serviceable. If the battery requires replacing, the radio should be returned to GME for service to ensure the waterproof integrity of the radio is maintained.

To Charge the Battery

Pull the connector cap on the top panel (between the Volume control and the antenna) to expose the charging socket. Plug the supplied AC adaptor into the 240V power then connect the adaptor's charger plug into the socket on the top of the radio.

While the charger is connected the display will show the battery charging state by animating the battery icon.

Important: The connector used to charge the GX800 is a Mini USB type charging at 8V (instead of the customary 5V normally associated with this connector).

For this reason,

- Do not connect your GX800 charger to other mini USB devices as damage may occur to your device.

- Do not remove the warning label fitted to the charging lead on the GX800 charger.

LIFT CAP

1. Pull connector cap away from top panel

⚠ WARNING
9V DC Power
Only for use with GX300

2. Plug Supplied AC Charger into socket

INTERNATIONAL MARINE VHF CHANNELS AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	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	Intership [1]
07	156.350	160.950		Public Correspondence, Port Operations and Ship Movement
08	156.400	156.400	X	Intership
09	156.450	156.450	X	Intership, Port Operations and Ship Movement
10	156.500	156.500	X	Intership, 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	Intership Safety, Port Operations and Ship Movement [3]
14	156.700	156.700	X	Port Operations and Ship Movement
15	156.750	156.750	X	Intership and On-board Communications at 1W only [4]
16	156.800	156.800	X	Distress, Safety and Calling
17	156.850	156.850	X	Intership 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
20	157.000	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
24	157.200	161.800		Public Correspondence, Port Operations and Ship Movement
25	157.250	161.850		Public Correspondence, Port Operations and Ship Movement
26	157.300	161.900		Public Correspondence, Port Operations and Ship Movement
27	157.350	161.950		Public Correspondence, Port Operations and Ship Movement
28	157.400	162.000		Public Correspondence, Port Operations and Ship Movement
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

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INTERNATIONAL MARINE VHF CHANNELS AND FREQUENCIES cont.

CH	TX Freq	RX Freq	Simplex	Use
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	Intership, Port Operations and Ship Movement [2]
68	156.425	156.425	X	Port Operations and Ship Movement
69	156.475	156.475	X	Intership, Port Operations and Ship Movement
71	156.575	156.575	X	Port Operations and Ship Movement
72	156.625	156.625	X	Intership
73	156.675	156.675	X	Intership [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	Intership
78	156.925	161.525		Public Correspondence, Port Operations and Ship Movement
79	156.975	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
84	157.225	161.825		Public Correspondence, Port Operations and Ship Movement
85	157.275	161.875		Public Correspondence, Port Operations and Ship Movement
86	157.325	161.925		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

Intership channels are for communications between ship stations. Intership communications should be restricted to Channels 6, 8, 72 and 77. If these are not available, the other channels marked for Intership 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 intership 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.

US MARINE VHF CHANNELS AND FREQUENCIES

CH	TX Freq	RX Freq	Simplex	Use
01A	156.050	156.050	X	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
05A	156.250	156.250	X	Port Operations or VTS in the Houston, New Orleans and Seattle areas
06	156.300	156.300	X	Intership Safety
07A	156.350	156.350	X	Commercial
08	156.400	156.400	X	Commercial (Intership 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	Intership Navigation Safety (Bridge-to-bridge). Ships >20m length maintain a listening watch on this channel in US waters.
14	156.700	156.700	X	Port Operations. VTS in selected areas
15	--	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 & local govt maritime control
18A	156.900	156.900	X	Commercial
19A	156.950	156.950	X	Commercial
20	157.000	161.600		Port Operations (duplex)
20A	157.000	157.000	X	Port Operations
21A	157.050	157.050	X	US Coast Guard only
22A	157.100	157.100	X	Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts announced on channel 16.
23A	157.150	157.150	X	US Coast Guard only
24	157.200	161.800		Public Correspondence (Marine Operator)
25	157.250	161.850		Public Correspondence (Marine Operator)
26	157.300	161.900		Public Correspondence (Marine Operator)
27	157.350	161.950		Public Correspondence (Marine Operator)
28	157.400	162.000		Public Correspondence (Marine Operator)

CH	TX Freq	RX Freq	Simplex	Use
63A	156.175	156.175	X	Port Operations and Commercial, VTS. Available only in New Orleans / Lower Mississippi area.
65A	156.275	156.275	X	Port Operations
66A	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
70	156.525	156.525	X	Digital Selective Calling (voice communications not allowed)
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)
78A	156.925	156.925	X	Non-Commercial
79A	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
81A	157.075	157.075	X	US Government only - Environmental Protection Operations
82A	157.125	157.125	X	US Government only
83A	157.175	157.175	X	US Coast Guard only
84	157.225	161.825		Public Correspondence (Marine Operator)
85	157.275	161.875		Public Correspondence (Marine Operator)
86	157.325	161.925		Public Correspondence (Marine Operator)
87	157.375	157.375	X	Public Correspondence (Marine Operator)
8*	157.425	162.025		Public Correspondence (only near Canadian border)
88A	157.425	157.425	X	Commercial, Intership only

Additional Information, Frequencies, and Charts.

Frequencies are in MHz. Modulation is 16KF3E or 16KG3E.

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.

Note that the letter A indicates simplex use of the ship station transmit side of an international duplex channel, and that operations are different than international operations on that channel.

NOAA Weather Channels	
WX1	162.550
WX2	162.400
WX3	162.475
WX4	162.425
WX5	162.450
WX6	162.500
WX7	162.525

Channel numbers, e.g. (WX1, WX2) etc. have no special significance but are often designated this way in consumer equipment. Other channel numbering schemes are also prevalent. The order of channels shown is the order they were established and is slowly becoming less popular over time than a numerical ordering of channels.

See NATIONAL WEATHER SERVICE MARINE PRODUCTS VIA NOAA WEATHER RADIO and the NOAA Weather Radio Homepage for more information.

Some VHF transceivers are equipped with an International – US switch for that purpose. A channels are generally only used in the United States, and use is normally not recognized or allowed outside the US The letter B indicates simplex use of the coast station transmit side of an international duplex channel. The US does not currently use B channels for simplex communications in this band.

Boaters should normally use channels listed as Non-Commercial. Channel 16 is used for calling other stations or for distress alerting. Channel 13 should be used to contact a ship when there is danger of collision. All ships of length 20m or greater are required to guard VHF channel 13, in addition to VHF channel 16, when operating within US territorial waters. Users may be fined by the FCC for improper use of these channels.

CH	TX Freq	RX Freq	EC	NL	AC	GL	WC	BCC	INL BCC	INL PRA	Use	Restrictions
01	156.050	156.650						X			PC	None
02	156.100	160.700						X			PC	None
03	156.150	160.750						X	X		PC	None
04A	156.200	156.200	X					X			IS, SS, C, S	DFO/Canadian Coast Guard only in BCC area. Commercial fishing in EC area.
05A	156.250	156.250	X	X	X	X	X	X	X		SM	None
06	156.300	156.300	X	X	X	X	X	X	X	X	IS, C, NC, S	May be used for search and rescue communications between ships and aircraft.
07A	156.350	156.350	X	X	X	X	X	X	X		IS, SS, S	None
08	156.400	156.400	X				X		X		IS, C, S	Also assigned for intership in the Lake Winnipeg area.
09	156.450	156.450			X			X		X	IS, SS, C, NC, S, SM	Commercial – BCC area. May be used to communicate with aircraft and helicopters in predominantly maritime support operations.
10	156.500	156.500			X	X		X			IS, SS, C, NC, S, SM	Commercial – BCC area. May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations.
11	156.550	156.550			X	X		X			IS, SS, C, NC, SM	VTS – BCC area. Also used for pilotage purposes.
12	156.600	156.600			X	X	X	X			IS, SS, C, NC, SM	VTS – BCC area. Port operations and pilot information and messages.
13	156.650	156.650	X	X	X	X	X	X	X		IS, C, NC, SM	VTS – BCC area. Bridge-to-bridge navigational traffic.
14	156.700	156.700			X	X		X			IS, SS, C, NC, SM	VTS – BCC area. Port operations and pilot information and messages.
15	156.750	156.750	X	X	X	X	X	X	X	X	IS, SS, C,	Port operations and Ship Movement – BCC area. All operations limited to 1 watt maximum power. May also be used for on-board communications.
16	156.800	156.800									All areas	

CH	TX Freq	RX Freq	EC	NL	AC	GL	WC	BCC	INL BCC	INL PRA	Use	Restrictions
17	156.850	156.850	X	X	X	X	X	X	X	X	IS, SS, C, NC, SM	Port operations and Ship Movement – BCC area. All operations limited to 1 watt maximum power. May also be used for on board communications. maximum power. May also be used for on board communications.
18A	156.900	156.900	X	X	X	X	X	X	X		IS,SS, C	Towing – BCC area
19A	156.950	156.950	X	X	X	X	X	X	X	X	IS, SS	DFO/Canadian Coast Guard. Pacific Pilots – BCC area.
20	157.000	161.600	X	X	X	X	X	X	X		SS, S, SM	Port operations only with 1 watt maximum power.
21A	157.050	157.050	X	X	X	X	X	X	X	X	IS, SS	DFO/Canadian Coast Guard only
21B	--------	161.650	X	X	X	X	X	X	X	X	S	Continuous Marine Broadcast (CMB) service.
22A	157.100	157.100	X	X	X	X	X	X	X	X	IS, SS, C, NC	For communications between Canadian Coast Guard and non-Canadian Coast Guard stations only.
23	157.150	161.750						X	X	X	SS, PC	None
23B	--------	161.750				X					S	Continuous Marine Broadcast (CMB) service
24	157.200	161.800	X	X	X	X	X	X	X	X	SS, PC	None
25	157.250	161.850						X			SS, PC	Also assigned for operations in the Lake Winnipeg area.
25B	--------	161.850			X						S	Continuous Marine Broadcast (CMB) service
26	157.300	161.900	X	X	X	X	X	X	X	X	SS, PC	None
27	157.350	161.950						X	X		SS, PC	None
28	157.400	162.000						X			SS, S, PC	None
28B	--------	162.000			X	X					S	Continuous Marine Broadcast (CMB) service
60	156.025	160.625						X			SS, PC	None
61A	156.075	156.075	X					X			IS, SS, C	DFO/Canadian Coast Guard only in BCC area. Commercial fishing only in EC area.
62A	156.125	156.125	X					X			IS, SS, C	DFO/Canadian Coast Guard only in BCC area. Commercial fishing only in EC area.
63A	156.175	156.175						X	X		IS, SS, C	Tow Boats – BCC area
64	156.225	160.825						X			SS, PC	None

CH	TX Freq	RX Freq	EC	NL	AC	GL	WC	BCC	INL BCC	INL PRA	Use	Restrictions
64A	156.225	156.225	X								IS, SS, C	Commercial fishing only
65A	156.275	156.275	X	X	X	X	X	X	X	X	S, IS, SS, C, NC	Search and rescue and antipollution operations on the Great Lakes. Towing on the Pacific Coast. Port operations only in the St. Lawrence River areas with 1 watt maximum power. Intership in INLD PRA.
66A	156.950	156.950	X	X	X	X	X	X	X		IS, SS	Port operations only in the St. Lawrence River/Great Lakes areas with 1–watt maximum power. 1 watt marina channel – BCC area.
67	156.375	156.375	X	X	X	X	X	X	X	X	SS, IS, ,C, NC	May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations. Commercial fishing only in EC and INLD PRA areas. Pleasure craft – BCC area.
68	156.425	156.425	X	X	X	X	X	X	X	X	IS, SS, NC	For marinas, yacht clubs and pleasure craft.
69	156.475	156.475	X	X	X	X	X	X	X		IS, SS, C, NC	Commercial fishing only – EC area. Pleasure craft – BCC area.
70	156.525	156.525	Digital Selective Calling for Distress, Urgency, Safety and Calling								All Areas	Voice communications prohibited.
71	156.575	156.575	X	X	X	X	X	X	X		S, IS, SS, SM, C, NC	Ship Movement – BCC area. Marinas and yacht clubs – EC and on Lake Winnipeg.
72	156.625	156.625	X					X			IS, C, NC	May be used to communicate with aircraft and helicopters in predominantly maritime support operations. Pleasure craft – BCC area.
73	156.675	156.675	X	X	X	X	X	X	X	X	S, IS, SS,	May also be used for communications with aircraft engaged in coordinated search and rescue and antipollution operations. Commercial fishing only in EC and INLD PRA areas.
74	156.725	156.725	X					X			IS, SS, SM, C, NC	VTS and Ship Movement – BCC area
75	156.775	156.775	X	X	X	X	X	X	X	X	IS, SS, SM, C	Simplex port operation, ship movement and navigation related communication only. 1 watt maximum.

CH	TX Freq	RX Freq	EC	NL	AC	GL	WC	BCC	INL BCC	INL PRA	Use	Restrictions
76	156.225	156.225	X								IS, SS, SM, C	Simplex port operation, ship movement and navigation related communication only. 1 watt maximum.
77	156.275	156.275	X	X	X	X	X	X	X	X	S, IS, SS, SM,	Pilotage – BCC area; 25 watts. Port operations only in the St. Lawrence River/Great Lakes areas with 1 watt maximum power.
78A	156.950	156.950	X	X	X	X	X	X			IS, SS, C	Fishing Industry – BCC area
79A	156.375	156.375	X	X	X	X	X	X		X	SS, IS,	Fishing Industry – BCC area
80A	157.025	157.025	X				X				IS, SS, C	Whale Watching – BCC area
81A	157.075	157.075	X	X	X	X	X	X			S, IS, SS	DFO/Canadian Coast Guard use only
82A	157.125	157.125	X	X	X	X	X	X			IS, SS	DFO/Canadian Coast Guard use only
83A	157.175	157.175			X	X		X			IS, SS	DFO/Canadian Coast Guard and other Government agencies.
83B	--------	161.775			X	X		X			S	Continuous Marine Broadcast (CMB) Service.
84	157.225	161.825						X			SS, PC	None
85	157.275	161.875		X	X	X		X			SS, PC	None
86	157.325	161.925						X			SS, PC	None
87	157.375	161.375		X	X	X		X			IS, SM, NC	Port operation and ship movement – EC area. Pleasure craft – BCC area.
87B	161.975	161.975	X	X	X	X	X	X	X	X	AIS	Automatic Ship Identification and Surveillance System.
88	157.425	157.425		X	X	X		X			IS, SM, C	Port operation and ship movement – BCC area.
88B	162.025	162.025	X	X	X	X	X	X	X	X	AIS	Automatic Ship Identification and Surveillance System.

WEATHER CHANNELS				
WX-1	--------	162.550	S	Environment Canada Weather Radio
WX-2	--------	162.400	S	Environment Canada Weather Radio
WX-3	--------	162.475	S	Environment Canada Weather Radio
WX-4	--------	162.425	S	Environment Canada Weather Radio
WX-5	--------	162.450	S	Environment Canada Weather Radio
WX-6	--------	162.500	S	Environment Canada Weather Radio
WX-7	--------	162.525	S	Environment Canada Weather Radio

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

General

Menu	Options
Frequency Range:	156.025 to 163.275 MHz
Number of Channels:	56 International, 52 US, 59 Canadian, 10 Weather
Oscillator:	PLL
Modulation:	FM
Channel Spacing:	25 kHz
Frequency Stability:	±5 PPM
Standard Operating Temperature:	-20°C ~ +55°C
Nominal Working Voltage:	7.4 V DC (with Li-Polymer battery)
Low Voltage Limit:	6.8 V DC
Battery Life (5% TX, 5% RX, 90% Stby):	≥8 Hrs
Antenna Socket :	SMA
Built in Speaker:	40 mm Diameter, 8 Ohms
Dimensions:	67 (W) x 153 (H) x 43 (D) mm
Weight:	297 grams
Battery:	7.4 V 1700 mAh Li-Polymer
DC Charger:	9 V @ 1000 mA
Charging Current:	760 mA ± 130 mA
Waterproof:	IP67

Receiver

Menu	Options
Sensitivity (12dB SINAD):	-119 dBm
Squelch:	Threshold: -119 dBm Tight: -113 dBm to -107 dBm
Rated Audio Output @5% THD Speaker:	250 mW
Adjacent Channel Rejection:	≥ 70 dB
Image Rejection:	≥ 70 dB
Intermodulation Rejection:	≥ 68 dB
Maximum S/N @ 1 mV	≥ 40 dB
Spurious Response rejection (CH16) 80 MHz to 1 GHz	≥ 70 dB
Conducted Spurious Emission:	≥ 70 dB
Scan Time per Channel:	200 ms
RX Current:	Standby – 185 mA Max Audio Power – 380 mA

Transmitter

Menu	Options
Output Power:	High – 5W Low – 0.8W
Frequency Tolerance:	± 5 PPM
Max Modulation:	± 5 kHz
Conducted Spurious Emission:	≤ -56 dB
Audio Distortion @ 3 kHz Dev:	Conducted Spurious Emission:
TX Current:	High Power – 1.6 A Low Power – 0.9 A

Specifications are nominal and are subject to change without notice or obligation

GME 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.

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 (or 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: (02) 8867 6000 Fax: (02) 8867 6199
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 you, and reimburse you for your reasonable expenses
of sending your warranty claim to us.

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
GX800/GX850 Marine radios	2 years