GME

INNOVATIVE ELECTRONICS

GX600D

VHF MARINE RADIO

I N S T R U C T I O N   M A N U A L

WARNING: SAFETY INFORMATION

The GX600D is a radio transmitting device.

- When transmitting, keep any part of your head or body more than 1.5 m from the antenna.

- Do not transmit near electrical blasting equipment or in explosive atmospheres.

- Do not allow children to operate a radio transmitter unsupervised.

INTERNATIONAL CUSTOMERS

Local requirements will vary throughout the world with regard to operator qualification, DSC registration and MMSI allocations.

International customers should refer to this manual for contact details to obtain specific requirements for your country.

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 Licenses

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.

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INTRODUCTION

Congratulations. You have just purchased one of the most technically advanced VHF marine radios in the world.

The GME GX600D is a VHF FM radio designed to operate in the 156 - 163 MHz marine band.

The GX600D has a number of enhanced features including fully user programmable Channel Scanning, Dual Watch and Triple Watch functions, a programmable 'Instant' channel memory and adjustable back lighting. In addition it incorporates Digital Selective Calling and supports position reporting when connected to a GPS receiver.

With its compact size and IP67 design it can easily be installed into almost any panel mounting location in your fly bridge or cabin.

The GX600D is totally designed at our Gladesville facility. Precision robots and the very latest manufacturing techniques ensure a consistently high quality is maintained resulting in a communications system of extreme reliability and performance.

Please read this manual thoroughly to ensure you get the best from the GX600D's features.

FEATURES

- Compact IP67 Design

- Selectable International, USA, and Canadian Channel Sets

- GPS position display when connected to a GPS

- Fully Compliant Class 'D' Digital Selective Calling

- Separate DSC Receiver

- Selectable USA Weather Channels

- Dual Watch and Triple Watch with Programmable Priority Channel.

- 10 Private Channels available

- Programmable Channel Scanning

- Selectable Power 25/1 Watt

- Working Channel Memory

- Alphanumeric Microphone for DSC control

- Adjustable Digital Squelch setting

OPERATOR QUALIFICATIONS

Any person in Australia operating a VHF marine radio should possess at least a Marine Radio Operators VHF Certificate of Proficiency (MROVCP). Alternatively, operators may choose to obtain a Marine Radio Operators Certificate of Proficiency (MROCP), which covers the operation of both VHF and MF/HF equipment.

Many TAFEs and marine organisations offer courses leading to examination for the MROVCP and MROCP although such courses are not compulsory. Persons wishing to obtain the MROVCP or MROCP should first purchase a copy of the Maritime Radio Operator Handbook which is essential reading for every boat owner in Australia.

The Australian Maritime College (AMC) provides the marine examination and certificate service on behalf of the ACA. The AMC can provide the details of organisations and individuals offering courses and or conducting exams. For further information visit: www.amc.edu.au

DIGITAL SELECTIVE CALLING (DSC)

The Digital Selective Calling (DSC) feature on your GX600D uses preformatted digital data messages instead of voice to transmit urgent or important information to another radio. DSC alerts all radios within range to a distress message even when a listening watch is not being maintained. This increases the chances of your signal being heard.

DSC is part of the Global Maritime Distress and Safety System (GMDSS) which is expected to eventually replace listening watches on distress frequencies and will be used to announce all routine and urgent maritime safety information broadcasts.

DSC AND GPS

DSC operation is enhanced by the addition of a GPS receiver or chartplotter connected to your GX600D. When a GPS is connected, your distress call can automatically include your current position and time, while a chartplotter will allow you to display the position of another vessel. If a GPS is not connected, DSC calls can still be sent and received to alert the operator of another vessel for subsequent voice communication.

MARINE MOBILE SERVICE IDENTITY

A MMSI is a 9-digit number used to identify a Radio that is capable of using DSC. The number is used to selectively call other vessels.

Note: You can still receive distress calls without a user MMSI.

USER MMSI

To use the DSC feature you must be registered with the appropriate licensing authority (AMSA in Australia) who will issue you with your unique user MMSI number. You can then enter this into your GX600D to enable DSC operation. Having a registered user MMSI means you can be identified much quicker in an emergency.

Your GX600D is shipped from the factory without a user MMSI number. It is up to the user to obtain a valid MMSI from the appropriate licensing authority and enter the MMSI into the radio to enable DSC operation.

GROUP MMSI

The Group MMSI is used for DSC Group Calls. A Group Call provides a method for all vessels with a common interest (eg: a 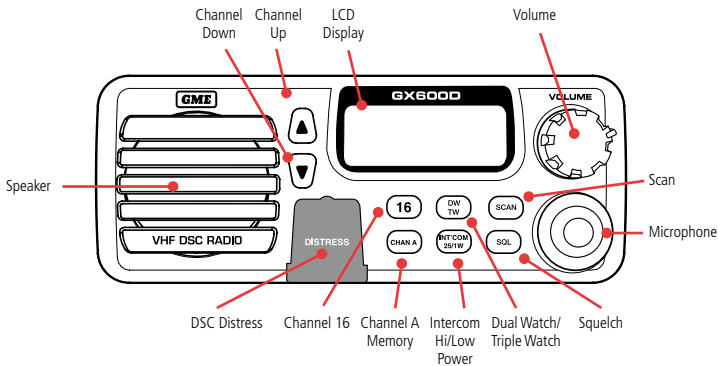yacht club or a fishing fleet) to be contacted with one DSC call. Group MMSI's are usually issued by a club or organisation for use by members participating in group activities (such as yacht racing etc).
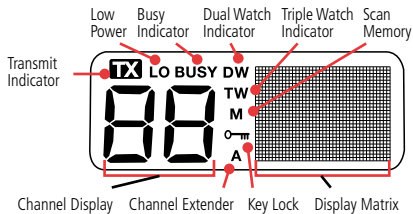
RANGE

The range of VHF transmissions depends on antenna height, transmitter power and the terrain over which the signals pass. Ship to ship communications should be possible over at least 8 nautical miles and up to about 27 nautical miles. Ship to shore ranges will often be greater due to the increased height of the shore antenna and communications of 25 to 50 nautical miles are possible.

OPERATION

CONTROLS

Channel Down · Channel Up · LCD Display · Volume · Speaker · Scan · Microphone · DSC Distress · Channel 16 · Channel A Memory · Intercom Hi/Low Power · Dual Watch/Triple Watch · Squelch

DISPLAY

Low Power · Busy Indicator · Dual Watch Indicator · Triple Watch Indicator · Scan Memory · Transmit Indicator · Channel Display · Channel Extender · Key Lock · Display Matrix

MICROPHONE

Call · Push to Talk · Alphanumeric Keypad · Keylock key · Menu/Enter Key · Up key · Down key · Clear key

VOLUME ON/OFF

Rotate the volume control clockwise past the 'click' to turn the GX600D on. Your user MMSI is displayed momentarily at switch-on. While receiving a signal, continue to rotate clockwise to increase the sound in the speaker. Rotate the control fully counterclockwise past the 'click' to turn the GX600D off.

Note: At minimum volume setting there is still sufficient volume to be heard in a quiet cabin environment.

CHANNEL SELECTION

Standard Marine Channels

Briefly press the ▲ key to step upwards one channel or the ▼ key to step downwards one channel. A high beep will be heard at each press. The ▲ or ▼ keys are also duplicated on the front of the microphone.

Press and hold the ▲ or ▼ keys for 1.5 seconds to scroll quickly upwards or downwards through the channels at a rate of 10 channels per second. When the key is released channel scrolling stops.

Weather Channels

The US weather channels are available only when the USA Channel Set has been selected. When available, weather channels are numbered 01 – 10 and are inserted into the normal channel sequence below marine channel 01. They are selected in the usual way using the ▲ or ▼ keys. Weather channels are identified by the WX icon on the display.

Private Channels

Up to 20 private channels can be programmed into the GX600D for organisations that have been officially allocated special frequencies. Private channels are programmed on application by your nearest GME branch office. All requests for private channel programming must be supported by ACMA (Australian Communications and Media Authority) documentation.

If private channels have been installed they will appear as A0 – A9 and B0 – B9 above CH 88.

SQUELCH

To open the squelch:
Briefly press the **SQL** key. A low beep will be heard and the squelch will open. Briefly press the **SQL** key again to close the squelch. A high beep will be heard and the squelch will be restored to its preset level.

Setting the Squelch Preset Level:
The preset squelch level can be adjusted to suit local conditions. If you are in an electrically noisy location or unwanted weak signals keep opening the squelch, you can adjust the squelch setting so that the GX600D remains quiet. Note that increasing the preset squelch level will mean that stronger signals will be required to overcome the squelch and may result in missed calls from weaker signals.

The best setting is the minimum one required to keep the receiver quiet.

To enter the Squelch setting mode:

Press and hold the **SQL** key for 1.5 seconds until a high beep is heard. The present squelch setting will be displayed in digits from -1 to -9 with -1 being minimum and -9 being maximum squelch. The default setting is -2. While in this mode, briefly press the ▲ or ▼ keys to increase or decrease the Squelch level respectively as required. Press the **SQL** key again to exit the Squelch setting mode or wait 5 seconds and it will exit automatically. A low beep will be heard.

Keylock

To lock the keypad press and hold the 🔒 key on the microphone. A high beep will be heard and the 🔒 symbol will be displayed. Press and hold the 🔒 key again to cancel the keylock function.

While keylock is enabled, only the **PTT**, 🔒 , **SQL**, **16** and **DISTRESS** keys are accessible. All other keys are locked.

Pressing **16** will cancel the keylock and revert to Channel 16 on high power.

Pressing **DISTRESS** will cancel the keylock and activate the distress menu.

TRANSMITTING

To Transmit:

Press the **Push to Talk (PTT)** switch on the microphone. Hold the microphone about 5 - 8 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. Release the **PTT** when you have finished talking.

Note: PTT transmissions are disabled on Channel 70.

Time-out Timer

Excessive transmission time is controlled by a time-out timer. If the **PTT** is held for more than 5 minutes, the transmitter will be temporarily disabled to prevent accidental jamming of the channel frequency. Ten seconds before the time out occurs, the 'TX' icon will flash and a low warning beep will sound to notify you of the impending timeout. Once the timeout occurs, both the backlight and the 'TX' icon will flash and another low warning beep will be heard. At this time the transmitter is disabled.

To reset the timer and re-enable the transmitter:

Release the **PTT** switch and wait 10 seconds. During this time the radio will display 'TX INHIBITED FOR 10 SECS'.

Note. Even if the **PTT** switch is released during the 10 second warning period, the PTT will still be inhibited for 10 seconds after the **PTT** is released.

CHANNEL 16

Briefly press the **16** key to switch straight to Channel 16. All previous control settings (such as scanning or low transmitter power) will be cancelled and the radio will be restored to normal operation with high transmit power selected.

SELECTING CHANNEL SETS

The GX600D is programmed with three Channel Sets - International, USA and Canada. These Channel Sets support various channel and frequency allocations for other parts of the world. Once you have selected the required Channel Set for your location, you should not need to change it again unless you have moved to another country.

When using the GX600D in Australia:

The International Channel Set should be selected.

To change the Channel Set:

Please refer to the Configuration Menu on page 13 of this manual.

DISPLAY BACKLIGHTING

The LCD display is backlit for easy viewing at night. The brightness of the backlighting can be adjusted. Backlight settings are accessed through the menu. For details on setting the display brightness or contrast please refer to the Configuration Menu on page 15 of this manual.

TRANSMIT POWER

The GX600D has both High (25 Watt) and Low (1 Watt) transmitter power settings. For long range transmissions the power should be set to 25 Watts. For local transmissions a 1 Watt setting will conserve power and reduce interference to nearby radios. The default setting is 25 Watts.

To switch between High and Low transmitter power:

Press and hold the **25/1W** key. A high beep indicates High power is selected while a low beep indicates Low power is selected. When Low power is selected 'LO' is displayed.

Note: The radio always defaults to High power when Channel 16 is selected.

- Selecting Channel 16 using the **16** key will reset ALL channels to High power.

- Selecting Channel 16 using the ▲ or ▼ keys resets only channel 16 to High Power but retains any Low power setting on the other channels.

- To specifically use Low power on Channel 16, select channel 16 then hold the **25/1W** key to select low power. 'LO' will be displayed.

WORKING CHANNEL MEMORY

The GX600D has a dedicated 'working channel' memory called Channel A which allows you to store and recall an often-used working channel. The memory is accessed using the **CHAN A** key. Channel A is also used as the priority channel for the Triple Watch function (see page 7).

To Store a Frequency into Channel A:

Select the required channel using the ▲ or ▼ keys, then press and hold the **CHAN A** key for 1.5 seconds. The channel number will flash then a high beep will be heard as the channel is stored.

To Recall Channel A:

Briefly press the **CHAN A** key to switch immediately to the channel stored in that memory. If the radio was scanning the scan will be cancelled.

DUAL WATCH KEY (DW)

The Dual Watch function is a 2 channel scan feature where the GX600D 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:

Select your preferred working channel - either with the ▲ or ▼ keys or by selecting the **CHAN A** memory - then briefly press the **DW** key. A high beep will be heard and both 'DW' and 'CH16' will appear on the display to indicate you are Dual Watching the selected channel with Channel 16. The GX600D will now monitor the selected channel AND Channel 16 by alternating equally between them. During this time the channel display will remain on the selected channel.

To cancel Dual Watching:

Briefly press the **DW** key again.

DUAL WATCH FEATURES

If a signal appears on Channel 16:

The radio will switch immediately to Channel 16 and '16' will be displayed. At this point the selected channel is no

longer being monitored because Channel 16 has priority. During this time the **PTT** may be pressed for normal transmissions on Channel 16. Once channel 16 has become inactive for 5 seconds the Dual Watch function will resume.

If a signal appears on the selected channel:

Scanning will pause on the selected channel BUT Channel 16 will continue to be monitored every 2 seconds. During this time the **PTT** may be pressed for normal transmissions on the selected channel (note that monitoring of Channel 16 ceases while transmitting). Once the selected channel has become inactive for 5 seconds the Dual Watch function will resume.

To Transmit on the selected Channel while Dual Watching:

Simply press the **PTT**. The Dual Watch function will pause on the selected channel during the transmission and remain paused until 5 seconds after all activity has ceased on the channel. Dual Watch will then resume.

To Transmit on Channel 16 while Dual Watching:

Press the **16** key to select Channel 16. Dual watch will be cancelled and the radio will switch straight to Channel 16. Now press the **PTT** and transmit in the usual way. When your conversation has ended, press the **DW** key to resume Dual Watching.

To change the selected Channel while Dual Watching:

Simply select another channel either using the ▲ or ▼ keys or Dual Watching continues on the newly selected channel.

TRIPLE WATCH KEY (TW)

The Triple Watch function is an extension of the Dual Watch feature. It allows the GX600D to monitor Channel 16, a selected channel AND a priority channel. Each channel is scanned equally for signals with priority given first to CH 16, then the Priority channel and lastly the selected channel.

When Triple Watch is selected the 'TW' icon is displayed along with Channel 16, the Selector Channel and the Priority Channel. The 'Priority' Channel is the one stored in the CHAN A memory.

To use the Triple Watch mode:

First program your priority channel (the default priority channel is 9) into the CHAN A memory, then select your preferred working channel using the ▲ or ▼ keys. Now press and hold the **TW** key for 1.5 seconds until a high beep is heard. 'TW' and the selected channel will be displayed along with CH16 and the Priority Channel number.

To change the selected channel at any time:

Press the ▲ or ▼ keys.

To cancel Triple Watch

Briefly press the **TW** key to switch to Dual Watch mode. A high beep will be heard

OR
Press and hold the **TW** key to return to normal operation. A low beep will be heard.

TRIPLE WATCH FEATURES

If a signal appears on Channel 16:

The radio will switch immediately to Channel 16 and 'CH 16' will be displayed. At this point the selected channel and the Priority channel are no longer being monitored because Channel 16 has highest priority. During this time the **PTT** may be pressed for normal transmissions on Channel 16. Once Channel 16 has become inactive for 5 seconds the Triple Watch function will resume.

If a signal appears on the Priority channel:

Scanning will pause on the Priority channel BUT Channel 16 will continue to be monitored every 2 seconds (the selected channel is not monitored). During this time the **PTT** may be pressed for normal transmissions on the Priority channel (monitoring of Channel 16 ceases while transmitting). Once the Priority channel has become inactive for 5 seconds Triple Watch will resume.

If a signal appears on the selected channel:

Scanning will pause on the selected channel BUT channel 16 and the Priority channel will continue to be monitored every 2 seconds. During this time the **PTT** may be pressed for normal transmissions on the selected channel (monitoring of channel 16 and the Priority channel ceases while transmitting). Once the selected channel has become inactive for 5 seconds the Triple Watch will resume.

To Transmit on the selected Channel while Triple Watching:

Simply press the **PTT**. The Triple Watch function will pause during the transmission and remain paused until 5 seconds after all activity has ceased on the channel. Triple Watch will then resume.

To Transmit on the Priority channel while Triple Watching:

Briefly press the **CHAN A** key. The Priority channel will then become the selected channel. Now press the **PTT** and transmit in the usual way. When your conversation has ended, re-select your selected channel.

To Transmit on Channel 16 while Triple Watching:

Press the **16** key. Triple Watch will be cancelled and the radio will switch straight to Channel 16. Now press the **PTT** and transmit in the usual way. When your conversation has ended, press and hold the **TW** key to resume Triple Watching.

SCANNING

The Scan function allows the GX600D to scan through a series of user selected channels looking for activity. Scanning is done in an ascending sequence at a rate of 10 channels per second.

Channels can be selected and stored for scanning from any of the available channels, including weather channels (if the USA channel set is selected) and private channels (if they are enabled).

Note: The transmitter is disabled while scanning. If the **PTT** is pressed, a low beep will be heard and the PTT is ignored.

To Store Channels for Scanning:

Select the required channel using the ▲ or ▼ keys, then press and hold the **SCAN** key for 1.5 seconds. A high beep with be heard and 'M' will appear next to the channel number.

Repeat the process to remove a previously stored channel from the scan list. When a channel is removed a low beep is heard and 'M' disappears from the display on that channel.

To Begin Scanning:

Briefly press the **SCAN** key. The GX600D will scan upwards through the stored channels at 10 channels per second and the display will show rapidly changing channel numbers. If a signal is located, scanning will pause on that channel and will remain for 5 seconds after the signal has gone. Scanning will then resume.

To Stop the Scan:

Briefly press the **SCAN** key again. The radio will return to the last selected channel.

SCANNING FEATURES

If the scan is paused on a busy channel and you wish to remain on that channel:

Briefly press the **SCAN** key. Scanning will be cancelled and the radio will remain on that channel. To resume scanning, briefly press the **SCAN** key again.

If the scan is paused on a busy channel and you wish to skip over that channel:

Briefly press the ▲ or ▼ keys. Scanning will resume with the next channel in sequence. As an alternative, pressing the **SCAN** key **twice** will give the same result.

If the scan is paused on a busy channel and you wish to transmit on that channel:

Simply press the **PTT** switch. Scanning will be cancelled and the radio will remain on that channel.

Note: if the PTT is pressed at any other time while scanning, a low beep will be heard and the PTT will be ignored.

To switch immediately to Channel 16:

Briefly press the **16** key. Channel 16 will be selected, scanning will be cancelled and the radio will be restored to normal operation with high transmitter power selected.

To switch immediately to the stored working channel (CHAN A):

Briefly press the **CHAN A** key. Scanning will be cancelled and the radio will switch to the channel stored in the CHAN A memory.

Scanning Notes:

1. Each channel set has its own independent scan memory. E.g. Scan channels stored under the International channel do not affect those stored under the USA channel set.

2. A minimum of 2 channels is required in the scan memory before scanning is allowed. If there are less that 2 channels, pressing the Scan key will give a low beep and the scan will be ignored.

3. The following keys/functions are disabled while scanning:
   - PTT
   - 25/1W
   - Scan memory storage

Scanning with Dual Watch:

If Dual Watch is selected while scanning, Channel 16 will be inserted into the scan every fifth channel

Scanning with Triple Watch:

If Triple Watch is selected while scanning, Channel 16 and the priority channel (stored in the CHAN A memory) will both be inserted into the scan every fifth channel.

DIGITAL SELECTIVE CALLING (DSC)

Digital Selective Calling (DSC) uses digital data to provide automatic distress alerting and position reporting between DSC equipped radios. Using preset functions built in to the radio, you can make a range of automated digital calls including Distress Calls, All Ships and Group Calls as well as calls to individual radios. With the addition of a GPS you can also send your position to another vessel or request their position. DSC has a number of advantages over

voice calls including the ability to handle increased radio traffic and the automatic identification of your ship and its position in the event of an emergency.

DSC is part of the Global Maritime Distress and Safety System (GMDSS) and will eventually replace audible listening-watches on distress frequencies. It will also be used to announce routine and urgent maritime safety information broadcasts to other ships in the area.

DSC calls are sent and received on CH70. The GX600D has two receivers, one of which is dedicated to CH70. Therefore, regardless of which channel you are operating on, the GX600D will not miss a DSC call.

USER MMSI
(MARINE MOBILE SERVICE IDENTITY)

A User MMSI is a 9-digit number used to identify a DSC capable Radio. The number is used to selectively call other vessels and is issued by your local Maritime Authority (AMSA in Australia).

NOTE: Before you can use DSC, you must have entered your User MMSI number into your GX600D. If you don't yet have a User MMSI, please register with your local Maritime Authority who will then issue a unique MMSI number. Please refer to the User MMSI section of the Configuration Menu on page 13 of this manual for instructions on entering your User MMSI.

DISTRESS CALLS

To make a Distress Call:

Always use the Red **DISTRESS** button on the GX600D's front panel. To make any other DSC call, use the **CALL** button on the microphone.

TO MAKE A DISTRESS CALL:

1. Open the Red DISTRESS cover.

2. Briefly press the **DISTRESS** key. The display shows the 'Nature of distress' Menu list.

3. Use the ▲ or ▼ keys to select the nature of the distress. The list includes: Undefined, Fire, Flooding, Collision, Grounding, Listing, Sinking, Disabled, Abandoning, Piracy and Man Overboard.

4. With the correct distress item selected, press and hold the **DISTRESS** key for 5 seconds. The display will flash and the radio will count from 5 down to 1, beeping at each count.

Note: To cancel the distress call, release the **DISTRESS** key before the countdown is completed. The radio will return to normal operation on CH16.

5. When the countdown is complete, the DISTRESS call will be sent on Channel 70 (whether CH70 is busy or not). After the distress call is sent, the radio switches to CH16 and the display shows 'DISTRESS' and 'Wait Ack ...' to indicate it is now in the distress mode and is waiting for an acknowledgement from another radio.

> **DISTRESS:**
>
> **WAIT ACK . . .**

While in distress call mode, the GX600D is set on CH16 and the user cannot change channels. The keypad on the microphone is disabled and all front panel keys except for SQL are disabled. If the **PTT** is pressed, the radio transmits on CH16 on HI power.

If an acknowledgement is not received, the distress call will be resent at around 4 minute intervals (whether CH70 is busy or not) – for as long as the radio remains in the distress call mode.

Note: A distress call can also be resent immediately at any time by holding the **DISTRESS** key again for 5 seconds.

The distress call mode is cancelled when a DISTRESS ACKNOWLEDGE is received or the **16** key is pressed. The radio then returns to normal operation on CH16.

Note: A Distress Acknowledge response is generally sent by a coastal base station.

RECEIVING A DISTRESS CALL

When a Distress Call is received:

The GX600D switches to CH16 and generates an audible Distress Alert alarm.

The radio's display then alternates between the name and position of the vessel in distress and the time and nature of the emergency at 3 second intervals:

> **DISTRESS:**
> **SIRIUS**
> **S 45° 23.48'**
> **E 151°21.14'**
>
> Name & Position
> of Vessel

> **DISTRESS:**
> **LISTING**
> **05:32 UTC**
>
> Nature of Distress
> & Time

Press **CLEAR** to cancel the alarm but continue displaying the emergency information.

Press **CLEAR** again to return to Normal operating mode on CH16.

MAKING ALL OTHER DSC CALLS

All other DSC calls - apart from distress calls - are made using the **CALL** button on the microphone.

DSC MENU NAVIGATION

To access the DSC Call menu:

Press the **CALL** button on the microphone. The 'CALL' Menu will be displayed providing a range of DSC call options.

To navigate the Call Menu:

Press the ▲ or ▼ keys to move up or down through the available menu options.

Press **ENTER** to select the current menu selection.

Press **CLEAR** to quit the current menu selection.

Press **CLEAR** again to exit the 'CALL' menu and return to normal operation.

Note: At any time in DSC mode, including Distress Calls, press the 16 key to cancel DSC mode entirely and return the radio to normal mode on HI power.

DSC CALL MENU OPTIONS

Individual Calls:

Use the 'Individual Call' option to alert a specific vessel that you wish to communicate with them on a specified channel. If the called vessel's radio is on a different channel, their radio will change to the channel you specify.

Note: To make an individual DSC call you must know the MMSI of the vessel you are calling.

To make an Individual Call:

1. Press the **CALL** button. The DSC 'CALL' Menu will be displayed.

2. Select 'Individual' and press **ENTER**. The MMSI number field will be displayed.

3. Enter the called vessel's MMSI.

   You can either –
   Enter the vessels MMSI directly using the keypad
   OR
   Press the ▲ key to retrieve the last called MMSI
   OR
   Press the ▼ key to select a vessel's MMSI from the Address Book.

4. Select the channel to be used for voice communication using the ▲ or ▼ keys, then press **CALL**.

Note: If you are calling a Coast Station you will not be asked to select a channel. Instead the Coast Station will decide the channel to be used.

5. You will be asked to confirm the call. Press **CALL** to transmit the call.
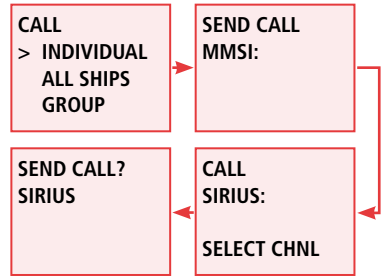
Once the call has been sent, the radio will wait for an acknowledgement. If an acknowledgement is received the radio displays.

Press **CLEAR** (or wait a further 5 seconds) for the radio to return to Normal mode. You can now have normal voice communications on the selected channel.

Notes:
If NO Acknowledgement is received:
It is likely that the vessel you called is switched off or out of range. If no response is received within 5 seconds the radio displays:

Press **CLEAR** (or wait a further 5 seconds) for the radio to return to Normal mode.

If an Acknowledgment is received but the other radio is unable to comply:

This indicates the called vessel's radio has received and acknowledged your call, but could not change to the requested channel. This could mean the called vessel's radio is configured for manual reply or is in a mode where the operator does not want the channel to change.

The radio displays:

```
CALL FROM:
SIRIUS
ACKNOWLEDGE
NOT COMPLY
```

Press **CLEAR** (or wait a further 5 seconds) for radio to return to Normal mode.
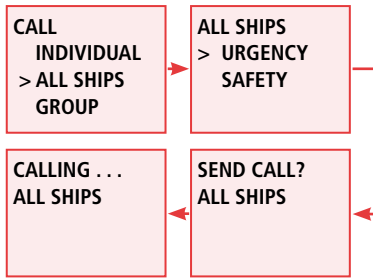
ALL-SHIPS CALL

An All-Ships call is a DSC broadcast to alert all ships in the area. It is the equivalent to sending a PAN-PAN or SECURITE voice call. Since the call is to All Ships and not to an individual vessel, a calling MMSI is not required. Ships receiving an All-Ships call will change to CH16.

To make an All Ships call:

1. Press the **CALL** button

2. Select 'ALL SHIPS' and press **ENTER**.

3. Select 'URGENCY' or 'SAFETY' as appropriate and press **ENTER**.

4. Press **CALL** to send the call

The radio returns to Normal mode on CH16 as soon as the call has been sent.

Note: There is no DSC acknowledge to an All-Ships call.

```
CALL                ALL SHIPS
   INDIVIDUAL       >  URGENCY
>  ALL SHIPS           SAFETY
   GROUP

CALLING . . .       SEND CALL?
ALL SHIPS           ALL SHIPS
```
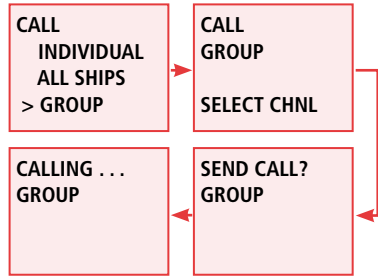
GROUP CALL

A Group Call is used to contact all ships that have the same Group MMSI. All ships receiving a Group call will change to the specified channel. For example this could be used to alert all yachts in a race to announce a change in the race conditions.

To make a Group Call:

1. Press the **CALL** button

2. Select 'GROUP' and press the **CALL** button again. The Group MMSI used is the one programmed into your radio (see Configuration Menu).

3. Select channel to be used for subsequent communications then press **CALL**.

4. Press **CALL** again to send the call

The radio returns to Normal mode on the selected channel as soon as the call has been sent.

Note: There is no DSC acknowledge to a Group call.

```
CALL                CALL
   INDIVIDUAL       GROUP
   ALL SHIPS
>  GROUP            SELECT CHNL

CALLING . . .       SEND CALL?
GROUP               GROUP
```

POSITION REQUEST

A Position request is used to obtain the position of another vessel. The other vessel's position is displayed on your radio's LCD. If you have a chartplotter connected to the GX600D, the position of the other vessel can also be displayed on the chartplotter's screen.

To make a Position Request:

1. Press the **CALL** button

2. Select '**POS REQUEST**' then press the **CALL** button.

3. Enter the called vessel's MMSI.

   You can either –
Enter the vessels MMSI directly using the keypad
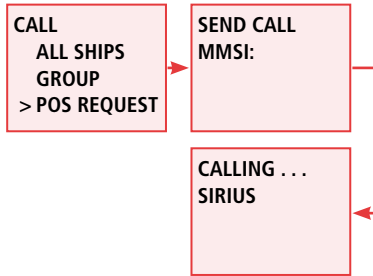OR
Press the ▲ key to retrieve the last called MMSI
OR
Press the ▼ key to select a vessel's MMSI from the Address Book.

4. Press **CALL** to send the call.

The request has now been sent and the radio will wait for a reply.

```
CALL                    SEND CALL
   ALL SHIPS            MMSI:
   GROUP
 > POS REQUEST


                        CALLING . . .
                        SIRIUS
```

Position Request Responses

If **NO acknowledgement is received:**

It is likely that the vessel you called is switched off or out of range. If no response is received within 5 seconds the radio displays:

```
CALLING . . .
SIRIUS

NO REPLY
```

Press **CLEAR** or wait a further 5 seconds for radio to return to Normal mode.

An acknowledgement is received:

The display will alternate between position and time as shown below. The position is displayed on the LCD as Lat/Long in Degrees, Minutes and Decimal Minutes. If a Chartplotter is attached, the position is also sent to the Chartplotter and appears on the Chartplotter's display.

```
CALL FROM:          CALL FROM:
SIRIUS              SIRIUS
POSITION            S 33° 49.30'
01:35 UTC           E 151° 07.15'
```
Displays time in UTC   **Displays Position**

Note: If the radio you are calling does not have a GPS connected or the GPS signal is not valid, the GPS position data will be invalid. In that case, the position used will be the manually set position. If the manual position is has not been set or hasn't been updated within 23 hours, then position data is sent as: 'N 99`99 E 999'99' to indicate position data is invalid. When this is received on the GX600D it will be displayed as:

```
CALL FROM:          CALL FROM:
SIRIUS              SIRIUS
POSITION            S _ _ °  _ _._ _ '
_ _:_ _ UTC         E _ _ _ °  _ _._ _ '
```

Press CLEAR (or wait 5 seconds) for the radio to return to Normal mode.

The called radio cannot comply:

The called vessel's radio has received your request, but could not send it's position. This could mean the called vessel's radio is configured for manual reply, or is in a mode where position requests are denied (see 'Auto Pos' setting on page 15 in the Configuration Menu).

```
CALLING . . .
SIRIUS

NO REPLY
```

Press CLEAR (or wait a further 5 seconds) for the radio to return to Normal mode.

Position Send

'Position Send' is used to manually send YOUR position to another vessel. For example, another ship may request your position using voice communications. Instead of speaking the latitude and longitude over a voice channel, you can send your position via DSC which can then be displayed on the other ship's radio or directly onto their chartplotter's screen.

To send a 'Position Send' call:

1. Press the **CALL** button

2. Select '**POS SEND**' then press the **CALL** button.

3. Enter the called vessel's MMSI.

   You can either –
   Enter the vessels MMSI directly using the keypad
   OR
   Press the ▲ key to retrieve the last called MMSI
   OR
   Press the ▼ key to select a vessel's MMSI from the Address Book.

4. Press **CALL** to send the call.

```
CALL                    SEND CALL
   INDIVIDUAL           MMSI:
   POS REQUEST
 > POS SEND


                        CALLING . . .
                        SIRIUS
```

The radio returns to Normal mode on the current channel as soon as the call has been sent.

Note: There is no DSC acknowledgement of a 'Position Send' call.

RECEIVING DSC CALLS

When a DSC call is received, the GX600D automatically responds depending on the type of call. If a GPS is connected to the caller's radio and is receiving a valid signal then their GPS time is used to display the time of the call on your GX600D's display.

Received calls are saved to the Call Log. Received DSC Acknowledge calls are not saved in the call log.

Receiving an Individual Call

When an 'Individual' call is received, the GX600D changes to the requested channel and generates an audible 'Individual Call' alarm. The display then shows:

```
CALL FROM:
SIRIUS
ROUTINE
CH12
```

Your GX600D automatically transmits a DSC acknowledge back to the caller.

Note: If the GX600D is configured for Manual TX the radio will not change channel and the acknowledge call will 'Unable to comply'.

To cancel the alarm, press any key. The radio returns to 'Normal' mode on the current channel.

Receiving an All Ships Call

When an All Ships call is received, the GX600D switches to CH16 and generates an audible All-Ships Urgency/Safety alarm. The Display shows:

```
ALL SHIPS:
SIRIUS
URGENCY
```

Press any key to cancel the alarm. The radio returns to Normal mode on CH16.

Receiving a Group Call

When a Group Call is received, the GX600D changes to the requested channel and generates an audible Group Call alarm.

The display shows:

```
GROUP CALL:
SIRIUS

CH12
```

Press any key to cancel the alarm. The radio returns to Normal mode on the current channel.

Receiving a Position Request

When a Position Request is received, your GX600D generates a DSC Position Reply message then displays the following:

```
CALL FROM:
SIRIUS
POSITION REQ
```

Press any key to clear the display. The radio returns to Normal mode on the current channel.

Receiving a Position Send

When a Position Send is received, your GX600D displays alternating information every 3 seconds to indicate the GPS time and the position of the calling vessel:

```
CALL FROM:
SIRIUS
POSITION
01:35 UTC
```
GPS Time

```
CALL FROM:
SIRIUS
S 33° 49.30'
E 151° 07.15'
```
Position of Calling Vessel

If a chartplotter is connected to your GX600D, the position of the calling ship is displayed on the chartplotter.

Press any key to clear the display. The radio returns to Normal mode on the current channel.

CONFIGURATION MENU

The GX600D is easily configured using a menu system. Use the keys on the microphone to advance through the menus and enter information.

To access and navigate the Menus:

Press **MENU** to access the Main Menu. A list of menu options is displayed. The '>' symbol indicates the currently selected menu option.

Press the ▲ or ▼ keys to move up or down through the available menu options.

Press **ENTER** to select the current menu selection.

Press **CLEAR** to quit the current menu selection.

To exit the Main Menu:

Press **CLEAR** repeatedly until the menu disappears from the display.

MENU OPTIONS

Address Book

The address book is used to store the names and user MMSI's of other vessels. This makes it easy to identify and make DSC calls to those stations.

To select the Address Book:

From the Main Menu, select '**ADDR BOOK'** and press **ENTER**.

To Add items to the Address Book:

1. Select '**ADD**' and press **ENTER**

2. Enter a suitable name using the Alpha/Numeric keypad on the microphone (11 characters max.) then press **ENTER**

3. Enter the ships MMSI number using the Alpha/Numeric keypad then press **ENTER**. **'SAVING…'** will be displayed as the Address is stored. The radio then returns to the **'ADDR'** menu.

NOTE: To correct an error while enter a name or MMSI

   a) Press the ▲ or ▼ keys to move the cursor left or right through the characters. The character at the cursor position will flash

   b) Press **CLEAR** to erase the character at the cursor position.

   c) Press another key on the keypad to replace the character at the cursor position.

To enter additional names and MMSI's, repeat the steps 1 - 3 above.

To Edit Items in the Address Book:

1. Select '**EDIT**' and press **ENTER**

2. Select the name you wish to Edit and press **ENTER**

3. Press the ▲ or ▼ keys to move the cursor left or right through the characters. The character at the cursor position will flash.

   a) Press **CLEAR** to erase the character at the cursor position.

   b) Press another key on the keypad to replace the character at the cursor position.

4. Press **ENTER** to advance to the MMSI

5. Repeat Step 3 to edit the MMSI. Press **ENTER** when complete. '**SAVING**…' will be displayed as the new Address is stored. The radio then returns to the '**ADDR**' menu.

To Erase items from the Address Book:

1. Select '**ERASE**' and press **ENTER**

2. To erase an individual Address, select '**ONE-BY-ONE**' and press **ENTER**.

3. Select the address to be erased and press **ENTER**. You will be asked to confirm your selection.

4. Press **ENTER** to confirm or **CLEAR** to cancel.

Note: To erase ALL address, select the **ALL ENTRIES** option at step 2.

CALL LOG

The Call Log keeps track of the DSC calls you have received.

To access the call log:

Select '**CALL LOG**' from the Main Menu and press **ENTER**.

DSC calls are logged as either 'Routine' or 'Distress'. Up to 10 calls can be logged in each category. Logged calls are numbered from 1 – 10 with call 1 being the most recent. If more than 10 calls have been logged, the oldest call is discarded when a new call is logged.

To view the call logs:

Select either '**ROUTINE**' or '**DISTRESS**' from the Call Log Menu and press **ENTER**. The most recently logged call in the selected category will be displayed as **'RECEIVED: 1'**, along with the MMSI of the caller and details of the call. If the caller is in your address book, their name will be displayed in place of the MMSI.

Press the ▲ or ▼ keys to view additional logged calls.

While displaying the details of a logged call, press the **MENU** key to access additional menu functions relating to the displayed call.

Call

Select '**CALL**' to call the station listed in the call log. Use the ▲ or ▼ keys to select the required channel if prompted then press **ENTER**. Press **ENTER** again to send the call.

Add Address

Select '**ADD ADDR**' to add the listed caller to your Address Book. You will be prompted to enter a Name for this entry. Enter the name using the Alpha Numeric keypad then press **ENTER**. The MMSI is automatically transferred from the call list to the Address entry page. Press **ENTER** to accept the MMSI. **'Saving …'** will be display as the address is stored.

Erase

Select this option to erase the displayed entry from the Call Log.

When finished, press **CLEAR** to return to the 'Call Log' menu.

Erase all Logs

To erase all logged calls, select '**ERASE LOGS**' from the **'Call Log'** menu. You will be prompted for confirmation.

Note: This option will erase ALL call logs from both the Routine and the Distress categories. Press **ENTER** to proceed or **CLEAR** to cancel.

DISPLAY

Select the '**DISPLAY**' option from the Main Menu to configure the display.

Backlight

To change the display's backlighting, select **'BACKLIGHT'** and press **ENTER**. Use the ▲ or ▼ keys to select from '**OFF**', '**DIM**' or '**BRIGHT**'. The display backlighting changes immediately with each selection. Press **ENTER** to accept the selection and return to the 'Display' Menu.

Contrast

Select '**CONTRAST**' to change the display contrast. Changing the contrast can improve visibility in changing light or at different viewing angles. Use the ▲ or ▼ keys to select a contrast level between -10 and 10. The default level is 1. The maximum contrast setting is 10. Press **ENTER** to return to the **'SETUP'** menu

SETUP

Key Beep

Select '**KEY BEEP**' and press **ENTER** to change the volume of the beeps when keys are pressed. While in the 'KEY BEEP' Menu use the ▲ or ▼ keys to change the Beep volume setting to 'HI', 'MED', 'LOW' or 'OFF'. Press **ENTER** to accept the selection and return to the 'SETUP' Menu.

Alarm Beep

Select '**ALARM BEEP**' and press **ENTER** to change the volume of the beeps when an Alarm sounds. While in the 'ALARM BEEP' Menu use the ▲ or ▼ keys to change the Alarm volume setting to '**HI**', '**MED**' or '**LOW**'. Press **ENTER** to accept the selection and return to the **'SETUP'** Menu.

Auto Change

Select '**AUTO CHANGE**' and press **ENTER** to select whether your radio will change channels when requested by another vessel's DSC call. Select '**ON**' to allow your radio to change channel when requested. Select '**OFF**' to prevent your radio from changing channel. Press **ENTER** to accept the selection and return to the '**SETUP**' Menu

Auto Pos.

Select '**AUTO POS**' and press **ENTER** to select whether your radio will automatically send its GPS position to another vessel whenever a Position Request is received. Select '**ON**' to allow your position to be sent automatically when a vessel sends you a Position Request. Select '**OFF**' to disable automatic position sending. Press **ENTER** to accept the selection and return to the 'SETUP' Menu

UIC

Accesses the Universal / International / Canadian channel set selection. Use the ▲ or ▼ keys to select from 'CAN' , 'USA' or 'INTL'. Press **ENTER** to accept the selection and return to normal operation or press **CLEAR** to discard any changes and exit back to the 'SETUP' menu.

When the Channel Set is changed the GX600D will switch to CH 16.

Note: When the USA Channel Set is selected, weather channels are accessible below Channel 01.

GPS SETUP

Position

Lets you manually set the latitude and longitude of your vessel's location. The position must be entered in Degrees, Minutes and decimal Minutes (DMM).

To enter your position :
Select '**POSITION**' from the GPS Menu.

Entering the Latitude:

Use the ▲ or ▼ keys to select 'N' (North) or 'S' (South) then press **ENTER.**

Enter the Latitude using the numerical keypad. To correct an error, use the ▲ or ▼ keys to change the cursor position then re-enter the number at that location. Press **ENTER** when done.

Entering the Longitude:

Use the ▲ or ▼ keys to select E (East) or W (West) then press **ENTER**.

Enter the Longitude using the numerical keypad. To correct an error, use the ▲ or ▼ keys to change the cursor position then re-enter the number at that location.
Press **ENTER** when done. The location will be stored.

UTC Time

Lets you manually set the time in UTC (Greenwich Mean Time). The time is entered as Hours: Minutes : Seconds in 24 hour time format.

To enter the time in UTC:

1. Select '**UTC TIME**' from the 'GPS SETUP' Menu. The Hours cursor will be flashing.

2. Use the ▲ or ▼ keys to select the hours then press **ENTER**. The Minutes cursor will flash.

3. Use the ▲ or ▼ keys to select the minutes then press **ENTER**. The Seconds cursor will flash.

4. Use the ▲ or ▼ keys to set the seconds then press **ENTER**.

The radio returns to the 'SETUP' Menu.

Note: The position and time are erased after 23 hours or when the radio is switched off.

Time Offset

Lets you set the time offset between UTC time and your local time. A list of Time offsets is in the back of this manual.

To set the Time Offset:

1. Select '**TIME OFFSET**'.

2. Use the ▲ or ▼ keys to set the time offset in half hour segments.

3. Press ENTER to return to the 'GPS SETUP' Menu.

GROUP MMSI

A Group Call provides a method for multiple vessels with a common interest to be contacted with one DSC call.

NOTE: There is no limit on the number of times you can change the Group MMSI.

To enter the Group MMSI

1. Select '**GROUP MMSI**' from the Main Menu

2. Enter the 'GROUP MMSI' number using the alpha numeric keypad. To correct an error, use the ▲ or ▼ keys to change the cursor position then re-enter the number at that location.

3. Press **ENTER** when finished to the Main Menu

USER MMSI

The User MMSI is unique to each radio and must be entered to enable normal DSC operation - except for distress calls which can be received without a user MMSI.

The GX600D is shipped from the factory with the user MMSI 'un-programmed'. It is up to the user to obtain a valid MMSI from the appropriate licensing authority and enter the MMSI into the radio to enable DSC operation.

Important: It is a requirement of the regulations that the User MMSI can only be entered ONCE. If there is a need to change the MMSI more than once you will need to contact your authorized GME service centre for advice. For this reason take special care when entering your User MMSI number to ensure it is entered correctly before saving it.

To enter the User MMSI:

1. Select 'USER MMSI' from the Main Menu.

2. Enter the 9 digit User MMSI number issued to you by your local authority using the alpha numeric keypad. If you make an error, use the ▲ or ▼ keys to move the cursor position to the incorrect number then re-enter the number at that location.

3. Once you are certain the number has been entered correctly, press **ENTER** to store it and return to the Main Menu.

CONNECTING A GPS RECEIVER

You can connect a GPS receiver or GPS Plotter to your GX600D to provide your radio with GPS position and time reporting.

NMEA 0183 DATA

The GX600D recognises the following standard NMEA sentences. You may need to select NMEA 0183 Input/Output using the interface settings on your GPS.

- NMEA Input from GPS: GPSGLL, GPGGA, GPRMC, GPGNS (v2.x).

- NMEA Output to plotter: GPDSC (v2.x). GPDSE (v3.x).

NMEA WIRING

Yellow
Blue — NMEA Out
— NMEA In
Common (Gnd)
Black
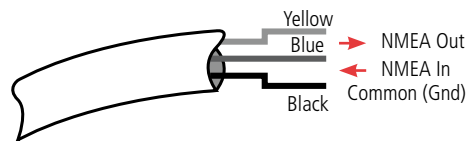
OPTIONAL RM600D REMOTE UNIT

The Optional RM600D remote unit provides a remote head connection to allow operation of the GX600D from a flybridge or second station on your vessel.

The RM600D conveniently plugs into the GX600D using an interconnecting cable and no additional interface wiring is required.

The RM600D is supplied with a DC lead for connection to a 12 Volt power source and 5 meters of terminated interconnecting cable. Additional terminated cables are available in 5 and 10 meter lengths.

When connected, the RM600D can duplicate all functions of the GX600D. In addition it includes an Intercom feature that allows internal communications between the GX600D and the RM600D.

The RM600D is supplied with a standard PTT microphone which is interchangeable with the alphanumeric microphone supplied with the GX600D. Because of the additional functions accessible from the alphanumeric microphone, master control is given to whichever device has the alphanumeric microphone connected. Before changing the microphones, both units should be switched off.

Note: Only one alphanumeric microphone should be connected to any GX600D/RM600D combination.

INTERCOM

To activate the Intercom feature, press the **INT'COM** key from either unit. Press the **PTT** and talk in the usual way.

To cancel the Intercom, press the **INT'COM** key again.

Note: Pressing the **16** key or the distress button also cancels the Intercom function.

INSTALLATION

Note: Your GX600D is designed for connection to negative earth electrical systems only.

SELECTING A LOCATION

It is advisable to spend a little time selecting the best location for your GX600D. The mounting bracket can be rotated above, below or behind the radio enabling the radio to be mounted in a wide range of locations. In addition, using the optional flush mounting kits (MK600, MK001, MK002) the GX600D can be mounted directly in a panel or dashboard. The flush mounting kits allow for installation or replacement of any existing VHF radio.
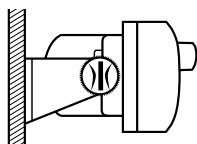
UPRIGHT OR OVERHEAD MOUNTING

Keep the following points in mind when choosing a location.

• The GX600D is designed to meet the IP67 specification which allows for direct water spray. However, we recommend you select a location that will minimise excessive exposure to water splashes or continuous rain.

• Select a location that won't expose your radio to continuous direct sunlight which could cause overheating or UV degradation.

• Ensure that the location allows a free flow of air around the heat sink on the back of the radio.

• The microphone and all controls should be readily accessible and the loud speaker easily heard from the normal steering position. An extension speaker (SPK600) can be installed if required.

• For best results connect the battery leads directly to the vessel's battery. If you need to extend the power leads to reach the battery use heavy insulated automotive wire of at least #10 gauge.

• Components and currents in the radio create magnetic fields. To avoid interference to ships compasses or autopilot sensors, the GX600D should be mounted at least 300 mm from such equipment.

INSTALLING THE UNIT

After choosing your location, hold the unit with the mounting bracket attached into the desired position and mark the location with a pencil. Remove the mounting bracket from the radio and drill the mounting holes. Bolt or screw the bracket in place using hardware suitable for the mounting surface. The unit is supplied with stainless steel screws; however, if the mounting surface is unsuitable for screws you may need to replace these with stainless steel bolts. Remember the fixings for overhead mounted units
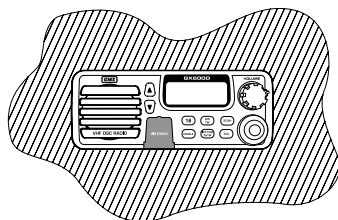

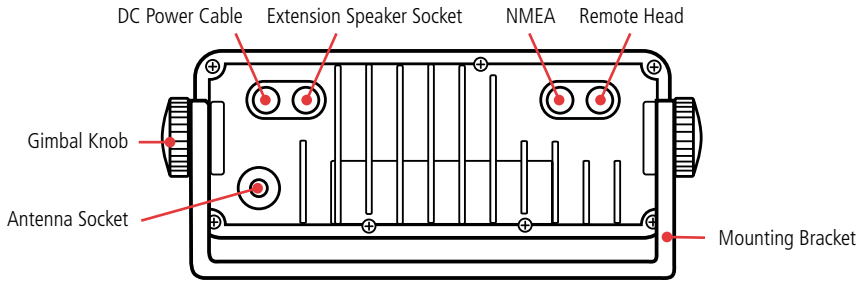Panel Mounting
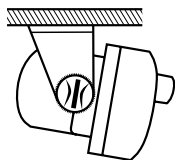
Overhead Mounting
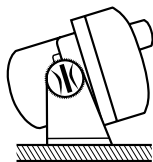
Upright Mounting

Flush Mounting (Optional MK600, MK001, MK002 flush mounting kits available)

Rear Panel Connections

may have to withstand heavy pounding when the vessel is in rough water or being towed on a trailer.

DC Connections

Connect the RED power lead to the Positive (+) side of the battery or to an accessory point in the vessel's fuse box.

Connect the BLACK power lead to the Negative (-) side of the battery or to a ground point in your vessel's fuse box.

Note: The RED power lead is fitted with a 10 Amp fuse. If the fuse blows, use only a standard 10 Amp (3AG type) fuse as a replacement. Use of higher rated fuses or 'slow blow' types could result in damage to your radio which would void the warranty.

Connect the antenna cable to the rear antenna socket on the radio using a PL259 coaxial connector.

If required, an SPK600 extension speaker may be installed near the steering position or outside the cabin to improve the reception clarity in those areas. The SPK600 is specifically designed for the GX600D with a watertight

connector to match the extension speaker socket on the rear of the radio.

Noise Suppression

The inherent design of VHF FM radios results in a high level of resistance to ignition and electrical interference. However in some installations it may be necessary to take additional steps to help reduce or eliminate noise interference. During installation, try to route the DC battery leads, the antenna lead or any accessory wires away from the engine compartment, ignition or alternator wiring. If the noise continues, it may be necessary to fit a suppression kit. Contact your local marine dealer for more information.

Similarly, if the interference you are experiencing is from other electronic equipment such as a depth sounder, try to keep the depth sounder's DC leads and transducer cable well away from your GX600D's wiring.

GX600D Wiring
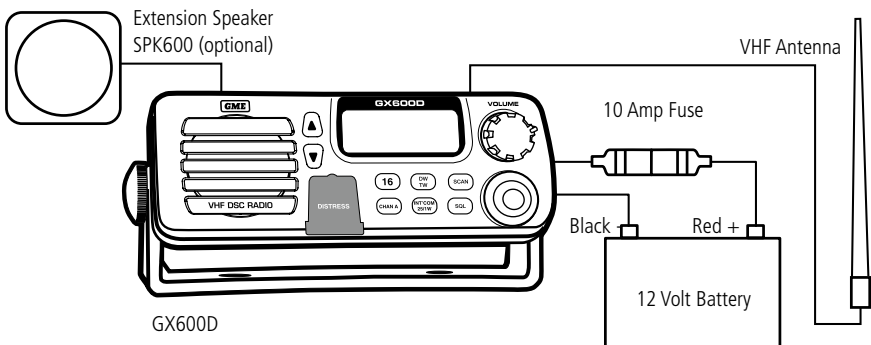
ELECTRICAL

General

Complies with:	AS/NZS4415.1.2003
Frequency Range:	155 – 165 MHz
Channel Spacing:	25 kHz
Modulation:	FM
Channels Sets:	• International, USA, Canada • Private – 20 Channels • USA Weather Channels
Supply Voltage:	• 12 Volt nominal • 10.5 – 15.6 Volt max. range • Negative Earth
Frequency Stability:	±1.5 kHz over environmental extremes
Scan Speed:	100 ms/channel (10 channels/sec)

Transmitter

Power Output:	• High: 25 Watts max • Low: 1 Watt max
Spurious Emissions:	< -75 dBc
Frequency Deviation:	± 5 kHz max +20 dB limiting @ 1 kHz
Frequency Response:	+ 6 dB per octave, 300 Hz – 3 kHz, +1 - 3 dB
Demodulated S/N:	> 50 dB weighted
Current Consumption:	• High Power: < 5 Amps • Low Power: 850 mA

Receiver

IF Frequencies:	• 1st: 21.4 MHz • 2nd: 450 kHz
Sensitivity:	-120 dBm for 12 dB SINAD unweighted
Squelch Sensitivity:	Adjustable, 10 preset levels
Spurious Rejection:	> 75 dB
Intermodulation Rejection:	> 73 dB
Adjacent Channel Rejection:	> 75 dB
Blocking Rejection:	> 100 dB
RF Bandwidth:	< 4 MHz
Switching Bandwidth:	> 10 MHz
Frequency Response:	-6 dB per octave de-emphasis, 300 Hz – 3 kHz, +1 - 3 dB

Audio Output Power:	• 4 Watts average into external 4 Ohm speaker • 2 Watts average into internal speaker
Audio SN:	> 45 dB weighted
Conducted Spurious Emission:	< -70 dBm
Current Consumption:	• Muted: < 200 mA • Full volume: 700 mA

DSC RECEIVER

IF frequencies:	• 1st: 38.85 MHz • 2nd: 455 kHz

(Note: all DSC limits are for 10e-2 BER)

Sensitivity:	-120 dBm
Spurious Rejection:	> 75 dB
Intermodulation Rejection:	> 73 dB
Adjacent Channel Rejection:	> 75 dB
Blocking Rejection:	> 100 dB

MECHANICAL

Dimensions:	164 (W) x 65 (H) x 77 (D) mm
Flush Mounting:	46 mm panel depth minimum
Weight:	585 grams

ENVIRONMENTAL

Temperature Range:	- 10°C to + 55°C
Vibration:	MIL STD 810E, procedure I 3.4.8
Solar Radiation:	Case UV stabilised
Water and Dust Resistance:	• IP67 excluding external cabling
Compass Safe Distance:	300 mm

EXTERNAL CONNECTIONS

Microphone:	6 pin socket
DC Supply:	2 pin socket
External Speaker:	3.5 mm phono line socket
Remote Head:	4 pin Plug
GPS Interface:	3 wire cable

All specifications are typical and subject to change without notice or obligation.

1. STATUTORY WARRANTIES

1.1 The Trade Practices Act Part V, Division 2A and other legislation imply conditions, warranties and other obligations on us to consumers that cannot be excluded, restricted or modified. Those provisions apply to the extent required by law.

1.2 We exclude all other conditions, warranties and obligations which would otherwise be implied concerning the activities covered by this agreement.

1.3 We limit our liability where we are allowed to do so. Examples of where we are allowed to limit liability are -
(a) you acquire goods from us for re-supply;

(b) the goods or services we supply are not of a kind ordinarily acquired for personal, domestic or household use or consumption.

1.4 Where we are allowed to limit our liability, 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 payment of the cost of repairing the goods or of acquiring equivalent goods;

(iv) the payment of the cost of having the goods repaired; or

(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 payment of the cost of having the services supplied

2. ADDITIONAL WARRANTIES

2.1 The warranties in this clause are in addition to the statutory warranties referred to in the previous clause.

2.2 We warrant our goods to be free from defects in materials and workmanship for one year from the date of original sale (or another period we agree to in writing). During this period and as our sole liability to you under this warranty, we agree to, at our option, either repair or replace goods which we are satisfied are defective. We warrant replacement parts for the remainder of the period of warranty for the goods into which they are incorporated.

2.3 We warrant our other repairs to be free from defects in materials and workmanship for three months from the date of the original repair. During this period and as our sole liability to you for the repair, we agree to repair or replace (at our option) repaired goods which we are satisfied are defective.

2.4 We warrant that we will perform services with reasonable care and skill and agree to investigate any complaint made in good faith that we have performed services unsatisfactorily. If we are satisfied that the complaint is justified, and as our sole liability to you under this warranty, we agree to supply those services again at no extra charge to you.

2.5 If you want warranty service under this clause you must give us an original or copy of the sales invoice from the transaction or some other evidence showing details of the transaction.

3. OTHER LIMITATIONS

3.1 You may not rely on any representation, warranty or other provision by or for us which is not covered by clause [1] or repeated in this agreement in clear terms.

3.2 We are not liable (nor are our employees, contractors and agents) for any damage, economic loss or loss of profits whether direct, indirect, general, special or consequential -

(a) arising out of any breach of any implied or express term, condition or warranty; or

(b) suffered as a result of our negligence (or that of our employees, contractors or agents)
- apart from liability as set out in the previous two clauses.

3.3 The liability of a party under this agreement (whether arising in contract, tort or by statute) is to be reduced by the same proportion as represents the proportion of the loss or damage caused or contributed to by the other party, its contractors or agents.

A division of:

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Part Number: 310350   Drawing Number: 43464-3

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