FCC ID:K6630483X3D / IC:511B-30483X3S

STANDARD HORIZON

EXPLORER GX1600

25 Watt VHF/FM

Marine Transceivers

Owner's Manual

- Ultra Compact Class D DSC (Digital Selective Calling) Transceive with Individual, All Ship, Position Report, Position Request, and Distress.
- Automatically poll up to 4 ships
- Independent Channel 70 receiver built-in for continuous DSC watch
- Enter, Save, and Navigation to waypoint with Compass page※
- Navigation to a DSC Distress Call※
- Submersible JIS-8 / IPX8 (4.9 feet for 30 minutes)
- ClearVoice noise canceling speaker microphone with channel selection and 16/9 key
- Capable of connecting an optional RAM3 second station remote microphone
- Intercom between radio and RAM3
- DSC position request and report function when connected to compatible GPS chart plotter
- One button access to Channel 16 and 9
- User programmable soft keys
- Navigation (LAT/LON, SOG, and COG) information shown on display※
- E2O (Easy-To-Operate) menu system

※ When connected to an optional GPS

Vertex Standard Co., Ltd.

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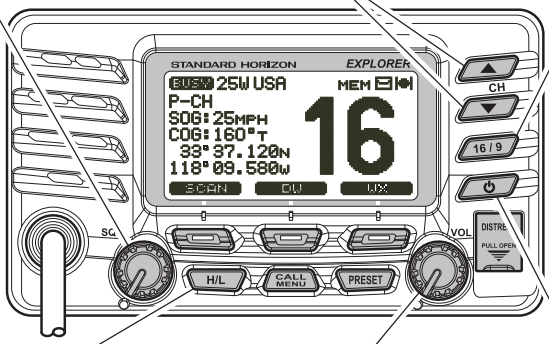
QUICK REFERENCE GUIDE

This transceiver is equipped with the E2O (Easy-To-Operate) system. You can do the basic operation in numerical order of the illustration below.

④[SQL] KNOB
Move this control clockwise to squelch or counter clockwise un-squelch the radio.

③[▼] / [▲] BUTTON
Selects the operating channel.

⑥[16/9] BUTTON
- Press to recall channel 16.
- Press and hold to recall channel 9.
- Press again to revert to the last selected channel.



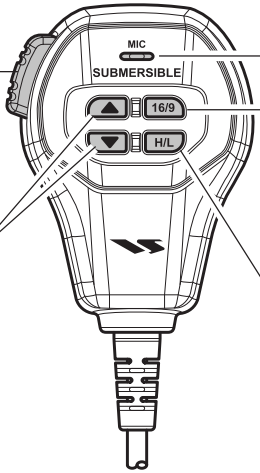
⑤[H/L] BUTTON
When pressed, toggles the transmit power between High (25W) and Low (1W).

②[VOL] KNOB
Adjust the speaker audio volume.

①[PWR] BUTTON
Press and hold this button to turn on or off the radio.

⑦[PTT] SWITCH
Place your mouth about 1/2 inch away from Mic hole and speak in a normal voice level while pressing this switch.

③[▼] / [▲] KEY
Selects the operating channel.



MIC HOLE

⑥[16/9] KEY
- Press to recall channel 16.
- Press and hold to recall channel 9.
- Press again to revert to the last selected channel.

⑤[H/L] KEY
When pressed, toggles the transmit power between High (25W) and Low (1W).

1 GENERAL INFORMATION

The STANDARD HORIZON ***EXPLOPER*** **GX1600** Marine VHF/FM Marine transceiver are designed to be used in USA, International and Canadian Marine bands. The **GX1600** can be operated from 11 to 16 VDC and has a switchable RF output power of 1 watt or 25 watts.

The **GX1600** VHF's are capable of DSC (Digital Selective Calling) Class D operation. Class D operation allows continuous receiving of Digital Selective Calling functions on channel 70 even if the radio is receiving a call. The **GX1600** VHF's operate on all currently-allocated marine channels which are switchable for use with USA, International, or Canadian regulations. Emergency channel 16 can be immediately selected from any channel by pressing the red 16/9 key. NOAA Weather channels can also be accessed immediately by pressing and holding the [**WX**] soft key.

Other features of the **GX1600** VHF's include: Speaker Microphone, optional **RAM3** second station remote-control microphone with display, intercom between radio and optional **RAM3**, scanning, priority scanning, submersible speaker mic, high and low voltage warning, and GPS repeatability.

2 PACKING LIST

When the package containing the transceiver is first opened, please check it for the following contents:

- **GX1600** Transceiver
- Mounting Bracket and hardware
- Owner's Manual
- DSC Warning Sticker
- Flush Mount Template
- Power Cord

3 OPTIONS

MMB-97 ..... Flush-Mount Bracket
CMP30B/W ..... Remote-Access Microphone (RAM3 Mic, Black/White)
CT-100 ..... 23-foot Extension Cable for RAM3 Mic
MLS-310 ..... 10W amplified External Speaker with on/off Volume control
MLS-300 ..... External Loud Speaker

4 SAFETY / WARNING INFORMATION

This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control the exposure conditions of its passengers and bystanders by maintaining the minimum separation distance of 0.89 m (2.92 feet). Failure to observe these restrictions will result in exceeding the FCC RF exposure limits.

Antenna Installation:

The antenna must be located at least 0.89 m (about 3 feet) away from passengers in order to comply with the FCC RF exposure requirements.

5 ON-LINE WARRANTY REGISTRATION (in USA or Canada only)

Please visit www.standardhorizon.com to register the **GX1600** Marine VHF. It should be noted that visiting the Web site from time to time may be beneficial to you, as new products are released they will appear on the STANDARD HORIZON Web site.

PRODUCT SUPPORT INQUIRIES

If you have any questions or comments regarding the use of the **GX1600**, you can visit the Marine Division of Vertex Standard Web site to send an E-Mail or contact the Product Support team at (800) 767-2450 M-F 7:00AM to 5:00PM PST.

6 FCC RADIO LICENSE INFORMATION

Standard Horizon radios comply with the Federal Communication Commission (FCC) requirements that regulate the Maritime Radio Service.

6.1 STATION LICENSE

An FCC ship station license is no longer required for any vessel traveling in U.S. waters (except Hawaii) which is under 20 meters in length. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone or marine satellite terminal is required to have a ship station license. FCC license forms, including applications for ship (605) and land station licenses can be downloaded via the Internet at http://www.fcc.gov/Forms/Form605/605.html. To obtain a form from the FCC, call (888) 225-5322.

6.2 RADIO CALL SIGN

Currently the FCC does not require recreational boaters to have a Ship Radio Station License. The USCG recommends the boats registration number and the state to be used when calling another vessel.

6.3 CANADIAN SHIP STATION LICENSING

You may need a license when traveling in Canada. If you do need a license contact their nearest field office or regional office or write:

Industry Canada
Radio Regulatory Branch
Attn: DOSP
300 Slater Street
Ottawa, Ontario
Canada, KIA 0C8

5.4 FCC / INDUSTRY CANADA INFORMATION

The following data pertaining to the transceiver is necessary to fill out the license application.

Type Acceptance ..... FCC Part 80
Output Power ..... 1 Watt (low) and 25 Watts (high)
Emission 16K0G3E, 16K0G2B
Frequency Range ..... 156.025 to 163.275 MHz
FCC Type Number K6630483X3D
Industry Canada Type Approval 511B-30483X3S

7 FCC NOTICE

NOTICE

Unauthorized changes or modifications to this equipment may void compliance with FCC Rules. Any change or modification must be approved in writing by STANDARD HORIZON.

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

8 GETTING STARTED

8.1 PROHIBITED COMMUNICATIONS

The FCC prohibits the following communications:

- False distress or emergency messages:
- Messages to “any boat” except in emergencies and radio tests;
- Messages to or from a vessel on land;
- Transmission while on land;
- Obscene, indecent, or profane language (potential fine of $10,000).

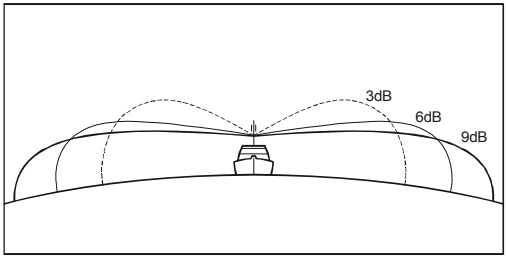
8.2 ABOUT VHF RADIO

The radio frequencies used in the VHF marine band lie between 156 and 158 MHz with some shore stations available between 161 and 163 MHz. The marine VHF band provides communications over distances that are essentially “line of sight” (VHF signals do not travel well through objects such as buildings, hills or trees). Actual transmission range depends much more on antenna type, gain and height than on the power output of the transmitter. On a fixed mount 25W radio transmission expected distances can be greater than 15 miles, for a portable 5W radio transmission the expected distance can be greater than 5 miles in “line of sight”.

8.3 SELECTING AN ANTENNA

Marine antennas are made to radiate signals equally in all horizontal directions, but not straight up. The objective of a marine antenna is to enhance the signal toward the horizon. The degree to which this is accomplished is called the antenna’s gain. It is measured in decibels (dB) and is one of the major factors in choosing an antenna. In terms of effective radiated power (ERP), antennas are rated on the basis of how much gain they have over a theoretical antenna with zero gain. A 3 foot, 3dB gain antenna represents twice as much gain over the imaginary antenna.

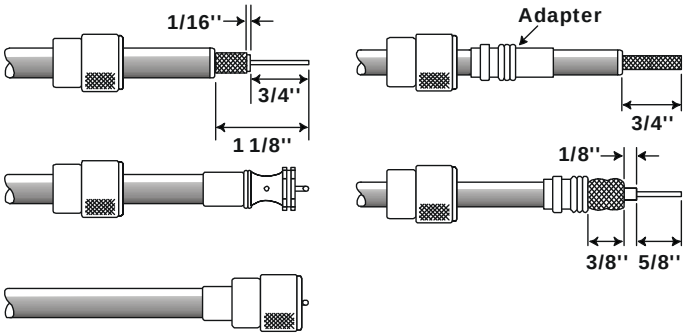
Typically a 3 foot 3dB gain stainless steel whip is used on a sailboat mast. The longer 8 foot 6dB fiberglass whip is primarily used on power boats that require the additional gain.



8.4 COAXIAL CABLE

VHF antennas are connected to the transceiver by means of a coaxial cable – a shielded transmission line. Coaxial cable is specified by it's diameter and construction.

For runs less than 20 feet, RG-58/U, about 1/4 inch in diameter is a good choice. For runs over 20 feet but less than 50 feet, the larger RG-8X or RG-213/U should be used for cable runs over 50 feet RG-8X should be used. For installation of the connector onto the coaxial cable refer to the figure below.



To get your coax cable through a fitting and into your boat's interior, you may have to cut off the end plug and reattach it later. You can do this if you follow the directions that come with the connector. Be sure to make good soldered connections.

8.5 EMERGENCY (CHANNEL 16 USE)

Channel 16 is known as the Hail and Distress Channel. An emergency may be defined as a threat to life or property. In such instances, be sure the transceiver is on and set to CHANNEL 16. Then use the following procedure:

1. Press the microphone push-to-talk switch and say "***Mayday***, ***Mayday***, ***Mayday***. This is _____ , _____ , _____ " (your vessel's name).
2. Then repeat once: "***Mayday***, _____ " (your vessel's name).
3. Now report your position in latitude/longitude, or by giving a true or magnetic bearing (state which) to a well-known landmark such as a navigation aid or geographic feature such as an island or harbor entry.
4. Explain the nature of your distress (sinking, collision, aground, fire, heart attack, life-threatening injury, etc.).
5. State the kind of assistance your desire (pumps, medical aid, etc.).
6. Report the number of persons aboard and condition of any injured.
7. Estimate the present seaworthiness and condition of your vessel.
8. Give your vessel's description: length, design (power or sail), color and other distinguishing marks. The total transmission should not exceed 1 minute.
9. End the message by saying "***OVER***". Release the microphone button and listen.
10. If there is no answer, repeat the above procedure. If there is still no response, try another channel.

NOTE

The **GX1600** have DSC Distress calling, that can transmit a distress call digitally to all ships with compatible DSC radios. Refer to section "**12 DIGITAL SELECTIVE CALLING**".

8.6 CALLING ANOTHER VESSEL (CHANNEL 16 OR 9)

Channel 16 may be used for initial contact (hailing) with another vessel. However, its most important use is for emergency messages. This channel must be monitored at all times except when actually using another channel. It is monitored by the U.S. and Canadian Coast Guards and by other vessels. **Use of channel 16 for hailing must be limited to initial contact only.** Calling should not exceed 30 seconds, but may be repeated 3 times at 2-minute intervals. In areas of heavy radio traffic, congestion on channel 16 resulting from its use as a hailing channel can be reduced significantly in U.S. waters by using **channel 9** as the initial contact (hailing) channel for non-emergency communications. Here, also, calling time should not exceed 30 seconds but may be repeated 3 times at 2-minute intervals.
Prior to making contact with another vessel, refer to the channel charts in this manual, and select an appropriate channel for communications after initial contact. For example, Channels 68 and 69 of the U.S. VHF Charts are some of the channels available to non-commercial (recreational) boaters. Monitor your desired channel in advance to make sure you will not be interrupting other traffic, and then go back to either channel 16 or 9 for your initial contact.

When the hailing channel (16 or 9) is clear, press the **PTT** button on the mic and state the name of the other vessel you wish to call and then ***"this is***" followed by the name of your vessel and your Station License (Call Sign) then release the **PTT** button on the mic. When the other vessel returns your call, immediately request another channel by pressing the **PTT** button on the mic and saying "***go to***," the number of the other channel, say "over" and release the **PTT** button on the mic. Then switch to the new channel. When the new channel is not busy, call the other vessel.

After a transmission, say "***over***," and release the microphone's push-to-talk (**PTT**) switch. When all communication with the other vessel is completed, end the last transmission by stating your Call Sign and the word "***out***." Note that it is not necessary to state your Call Sign with each transmission, only at the beginning and end of the contact.

Remember to return to Channel 16 when not using another channel. Some radios automatically monitor Channel 16 even when set to other channels or when scanning.

8.7 MAKING TELEPHONE CALLS

To make a radiotelephone call, use a channel designated for this purpose, The fastest way to learn which channels are used for radiotelephone traffic is to ask at a local marina. Channels available for such traffic are designated ***Public Correspondence*** channels on the channel charts in this manual. Some examples for USA use are Channels 24, 25, 26, 27, 28, 84, 85, 86, and 87. Call the marine operator and identify yourself by your vessel's name, The marine operator will then ask you how you will pay for the call (telephone credit card, collect, etc.) and then link your radio transmission to the telephone lines.

The marine telephone company managing the VHF channel you are using may charge a link-up fee in addition to the cost of the call.

8.8 OPERATING ON CHANNELS 13 AND 67

Channel 13 is used at docks and bridges and by vessels maneuvering in port. Messages on this channel must concern navigation only, such as meeting and passing in restricted waters.

Channel 67 is used for navigational traffic between vessels.

By regulation, power is normally limited to 1 Watt on these channels. Your radio is programmed to automatically reduce power to this limit on these channels. However, in certain situations it may be necessary to temporarily use a higher power. See page 30 (H/L key) for means to temporarily override the low-power limit on these two channels.

9 INSTALLATION

9.1 LOCATION

The radio can be mounted at any angle. Choose a mounting location that:

- is far enough from any compass to avoid any deviation in compass reading due to the speaker magnet
- provides accessibility to the front panel controls
- allows connection to a power source and an antenna
- has nearby space for installation of a microphone hanger
- choose a mounting location that is at least 3 feet (1 m) away from the radio's antenna.

Note: To insure the radio does not affect the compass or radios performance is not affected by the antenna location, temporarily connect the radio in the desired location and:

a. Examine the compass to see if the radio causes any deviation

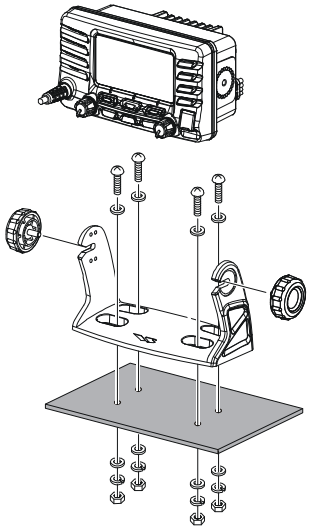
b. Connect the antenna and key the radio. Check to ensure the radio is operating correctly by requesting a radio check.

9.2 MOUNTING THE RADIO

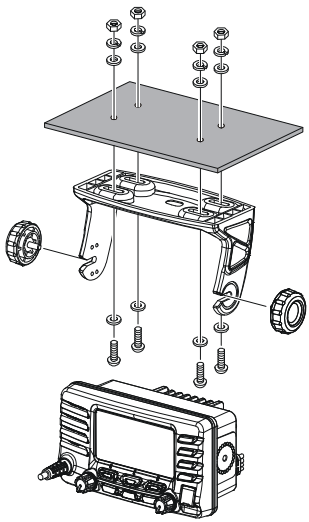
9.2.1 Supplied Mounting Bracket

The supplied mounting bracket allows overhead or desktop mounting.

Use a 13/64" (5.2-mm) bit to drill the holes to a surface which is more 0.4 inch (10 mm) thick and can support more than 3.3 lbs (1.5 kg) and secure the bracket with the supplied screws, spring washers, flat washers, and nuts.



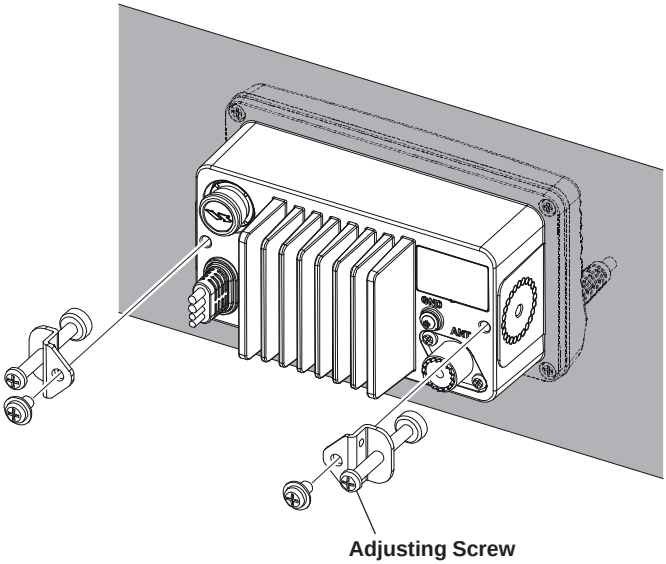
DESKTOP MOUNTING



OVERHEAD MOUNTING

9.2.2 Optional MMB-97 Flush Mount Bracket

1. Make a rectangular template for the flush mount measuring 2.83" H x 5.39" W (72 x 137 mm).
2. Use the template to mark the location where the rectangular hole is to be cut. Confirm the space behind the dash or panel is deep enough to accommodate the transceiver (at least 3.54 inches (90 mm) deep).
   There should be at least 1/2 inch (1.3 cm) between the transceiver's heatsink and any wiring, cables or structures.
3. Cut out the rectangular hole and insert the transceiver.
4. Fasten the brackets to the rear panel of the transceiver (see illustration below).
5. Turn the adjusting screw to adjust the tension so that the transceiver is tight against the mounting surface.



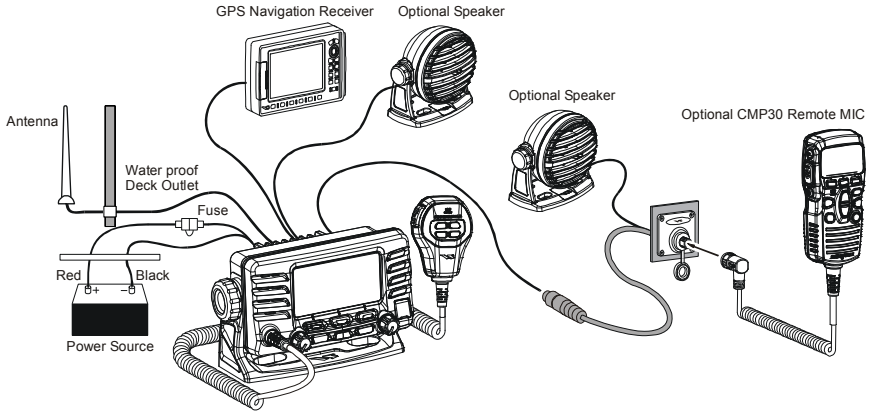
9.3 ELECTRICAL CONNECTIONS

CAUTION

Reverse polarity battery connections will damage the radio!

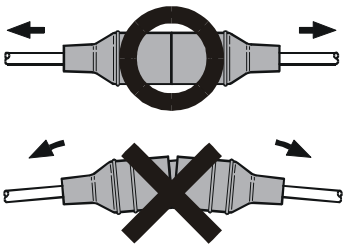
Connect the power cord and antenna to the radio. Antenna and Power Supply connections are as follows:

1. Mount the antenna at least 3 feet (1 m) away from the radio. At the rear of the radio, connect the antenna cable. The antenna cable must have a PL259 connector attached. RG-8/U coaxial cable must be used if the antenna is 25 feet (7.6 m) or more from the radio. RG58 cable can be used for distances less than 25 feet (7.6 m).
2. Connect the red power wire to a 11.0 V to 16.5 V DC power source (Normal: 13.8 VDC). Connect the black power wire to a negative ground.
3. If an optional remote extension speaker is to be used, refer to section 8.4 for connections.
4. It is advisable to have a Certified Marine Technician check the power output and the standing wave ratio of the antenna after installation.

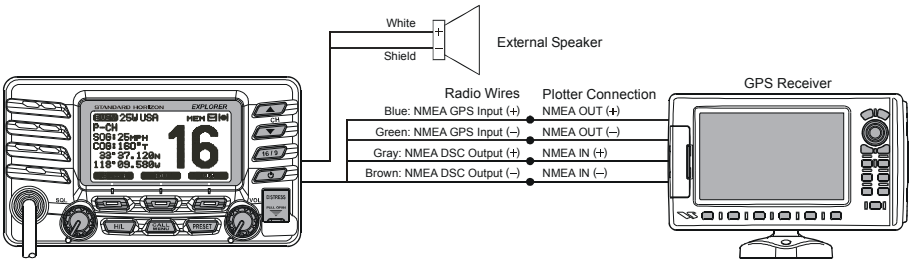


Fuse Replacement (125V/6A; 6φ, 30 mm)

To take out the Fuse from the Fuse Holder, hold both ends of the Fuse Holder and pull the Fuse Holder apart without bending the Fuse Holder. When you replace the Fuse, please confirm that the Fuse is tightly fixed on the metal contact located inside the Fuse Holder. If the metal contact holding the fuse is loose, the Fuse holder may heat up.



9.4 ACCESSORY CABLE



Wire Color/Description	Connection Examples
WHITE - External Speaker (+)	Connect to external 4 Ohm audio speaker
SHIELD - External Speaker (–)	Connect to external 4 Ohm audio speaker
BLUE - NMEA GPS Input (+)	Connect to NMEA (+) output of GPS
GREEN - NMEA GPS Input (–)	Connect to NMEA (–) output or common ground of GPS
GRAY - NMEA DSC Output (+)	Connect to NMEA (+) intput of GPS
BROWN - NMEA GPS Output (–)	Connect to NMEA (–) input or common ground of GPS

When connecting the external speaker or GPS navigation receiver, strip off about 1 inch (2.5 cm) of the specified wire's insulation, then splice the ends together.

GPS Connections (4800 baud)

NMEA INPUT (GPS Information)

- The GPS must have the NMEA Output turned on and set to 4800 Baud in the setup menu. If there is a selection for parity select none.
- For further information on interfacing /setting up your GPS. Please contact the manufacturer of the GPS receiver.
- **GX1600** can read NMEA-0183 version 2.0 or higher.
- The NMEA 0183 input sentences are GLL, GGA, RMC and GNS (RMC sentence is recommended).

  NMEA Output (DSC)

  The NMEA 0183 output sentences are DSC and DSE.

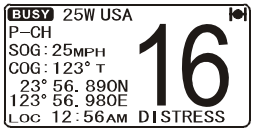
If you have further inquires, please feel free to contact Product Support at:

Phone: (800) 767-2450

Email: marinetech@vxstdusa.com

9.5 CHECKING GPS CONNECTIONS

After connections have been made between the **GX1600** and the GPS, a small satellite icon will appear on the top right corner of the display and your current location (Latitude/Longitude) is shown on the display.



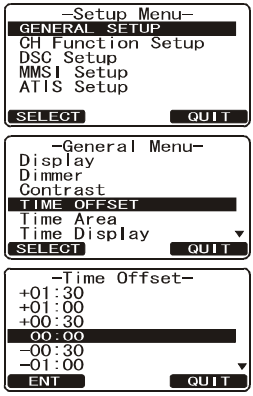
NOTE

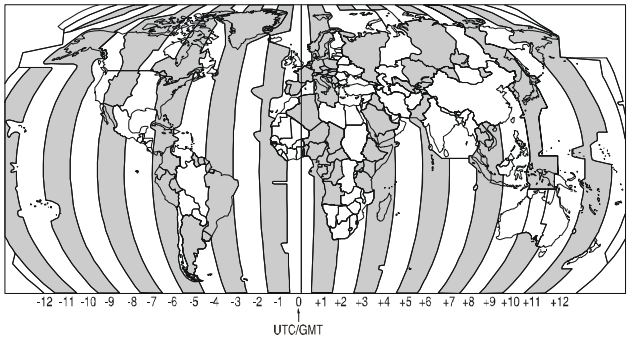
If there is a problem with the NMEA connection between the radio and the GPS, the GPS icon will blink continuously until the connection is corrected.

9.6 CHANGING THE GPS TIME

From the Factory the **GX1600** shows GPS satellite time or UTC time when an optional GPS is connected. A time offset is needed to show the local time in your area. The Time Offset must be changed in order for the radio to display the current time in your area. Please see the Offset Time Table at the bottom of this page.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the ▲/▼ key.
2. Press the [**SELECT**] soft key, then select "**TIME OFF-SET**" with the ▲/▼ key.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select time offset of your location. See illustration below to find your offset time. If "**00:00**" is assigned, the time is the same as UTC (Universal Time Coordinated or GPS Satellite Time).
4. Press the [**ENT**] soft key to store the time offset.
5. Press the [**QUIT**] soft key several times to return to radio operation.



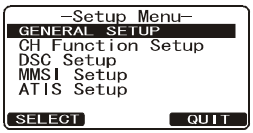


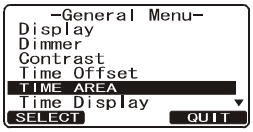
OFFSET TIME TABLE

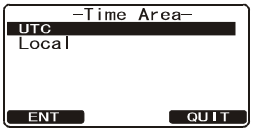
9.7 CHANGING THE TIME LOCATION

This menu selection allows the radio to show UTC time or local time with the offset.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the ▲/▼ key.
2. Press the [**SELECT**] soft key, then press the ▲/▼ key to "**TIME AREA**".
3. Press the [**SELECT**] soft key.
4. Press the ▲/▼ key to select "**UTC**" or "**LOCAL**".
5. Press the [**ENT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.



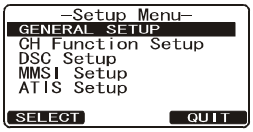


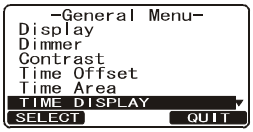


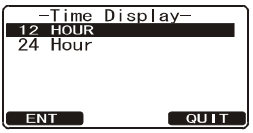
9.8 CHANGING THE TIME FORMAT

This menu selection allows the radio to setup to show time in 12-hour or 24-hour format.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the **CHANNEL** knob.
2. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**TIME DISPLAY**".
3. Press the [**SELECT**] soft key.
4. Press the ▲/▼ key to select "**12 HOUR**" or "**24 HOUR**".
5. Press the [**ENT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.



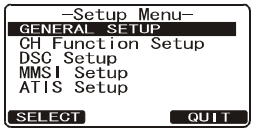


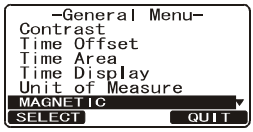


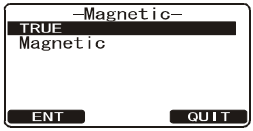
9.9 CHANGING COG TO TRUE OR MAGNETIC

Allows the GPS Course Over Ground to be selected to show in True or Magnetic. Factory default is True however by following the steps below the COG can be changed to Magnetic.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the ▲/▼ key.
2. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**MAGNETIC**".
3. Press the [**SELECT**] soft key.
4. Press the ▲/▼ key to select "**MAGNETIC**" or "**TRUE**".
5. Press the [**ENT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.







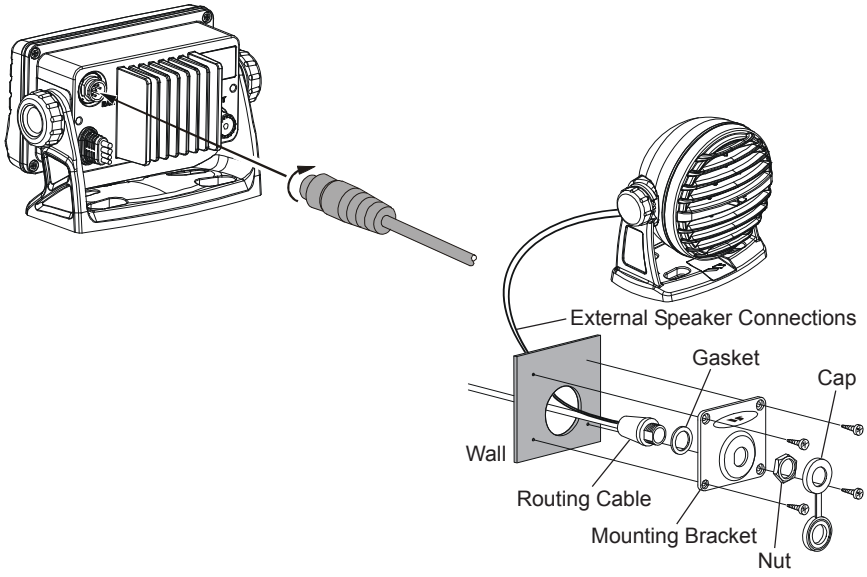
9.10 OPTIONAL CMP30 (RAM3) INSTALLATION

The **GX1600** is capable of using a **CMP30** (**RAM3**) Remote Station Microphone to remotely control the Radio and DSC functions. In addition the **GX1600** can operate as a full function intercom system between the **RAM3** and the radio.

1. Connect the Extension Cable to the Remote Mic eight pin connector on the rear panel, then tighten the Cable Nut (see illustration below).
2. Referring to illustration below, make a 1.2" (30 mm) hole in the wall, then insert the Extension Cable into this hole. Connect the Gasket and Mount Base to the Extension Cable Connector using the Nut.
3. Drill the four Screw holes (approx. 2 mm) on the wall, then install the Mounting Base to the wall using four screws.
4. Put the Rubber Cap on to the Nut. The installation is now complete.

NOTE

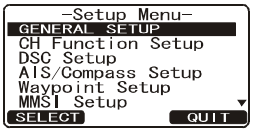
The routing cable can be cut and spliced, however care needs to be taken when reconnecting the wires to ensure water integrity.
Before cutting the cable make sure it is not plugged into the radio. After cutting you will notice there are the following wires:
Yellow, Green, Brown, Purple, Blue, Green, Red※, Shield※
※ The red and shield wires are wrapped in foil. Remove the foil, and separate the Red and shield wires.

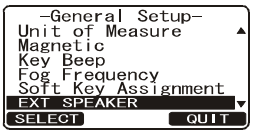


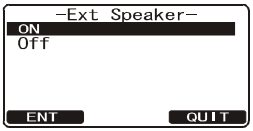
Connecting an External Speaker to the RAM3 Mic Cable

In noisy locations and optional external speaker may be connected to the white speaker wires on the **RAM3** routing cable. The **RAM3** can drive the internal speaker or the external speaker one at a time. When connecting an external speaker, follow the procedure below to turn off the **RAM3** audio and enable the external speaker wires on the **RAM3** routing cable.

1. On the RAM3 mic, press and hold the [**CALL**(**MENU**)] key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the [▲] / [▼] key.
2. Press the [**ENT**] key.
3. Press the [▼] key to until "**EXT SPEAKER**" is shown and press the [**SELECT**] soft key.
4. Press the [▲] or [▼] key to select "**OFF**" (External speaker off) or "**ON**" (External speaker on).
5. Press the [**ENT**] soft key to save the selection.
6. Press the [**16/9**] key to exit this mode.



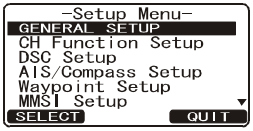


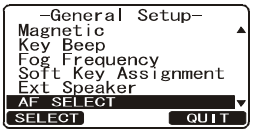


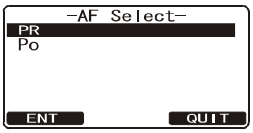
External Speaker AF Selection

The "**AF Select**" menu allows you to set the audio output level of the **RAM3** external speaker wires (on routing cable) to a fixed level regardless of the volume level setting of the **RAM3** which is useful when using the optional **MLS-310** amplified speaker with on/off volume control.

1. On the RAM3 mic, press and hold the [**CALL**(**MENU**)] key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the [▲] / [▼] key.
2. Press the [**ENT**] key.
3. Press the [▼] key to until "**AF SELECT**" is shown and press the [**SELECT**] soft key.
4. Press the [▲] or [▼] key to select "**PR**" (External Speaker Level is "Fixed") or "**PO**" (External Speaker Level is "Adjustable").
   "Fixed" use when **MLS-310** is connected.
   "Adjustable" use when **MLS-300** or other speaker without volume control is connected.
5. Press the [**ENT**] key to save the selection.
6. Press the [**16/9**] key to exit this mode.







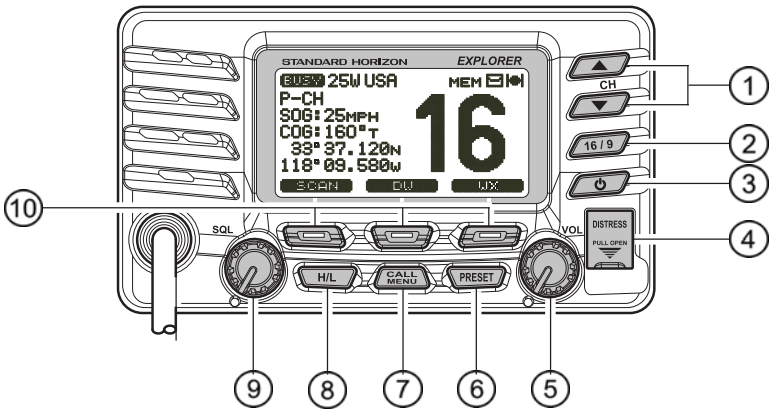
MEMO

10 CONTROLS AND INDICATORS

NOTE

This section defines each control of the transceiver. See illustration at the next page for location of controls. For detailed operating instructions refer to chapter 10 of this manual.

10.1 FRONT PANEL



① / Key

The / key is used to select channels and to choose menu items (such as the DSC menu, Radio Setup and DSC Setup menu). The [**UP**(▲)] / [**DOWN**(▼)] keys on the microphone can also be used to select channels and menu items.

SECONDARY USE

While holding down the [**SCAN**] soft key and pressing / key, you can confirm memory channels that have been programmed for scanning.

② 16/9 Key

Press the 16/9 key briefly to recall channel 16 from any channel location. Press and hold the 16/9 key to recall channel 9. Pressing the 16/9 key again reverts to the previous selected working channel.

③ Key

Turns the transceiver on and off. To turn the transceiver on, press and hold this key until the LCD turns on. To turn it off, press and hold this key until the LCD turns off. When the power is turned on, the transceiver is set to the last-selected channel.

④ [**DISTRESS**] Key
Used to send a DSC Distress Call. To send the distress call refer to section "**11.3.1 Transmitting a DSC Distress Call**."

⑤ **VOL** Knob (Volume Control Knob)
Adjusts the audio volume level. Turn this knob clockwise to increase the audio volume level.
SECONDARY USE
When in the Intercom mode, controls the listen volume.

⑥ PRESET Key
Press this key to recall the user preset memory channels (shown as memory channel number "0" - "9" on the display). Press the or key to select the desired preset channel.
Press and hold this key for two seconds to memorize the selected channel into the preset memory.

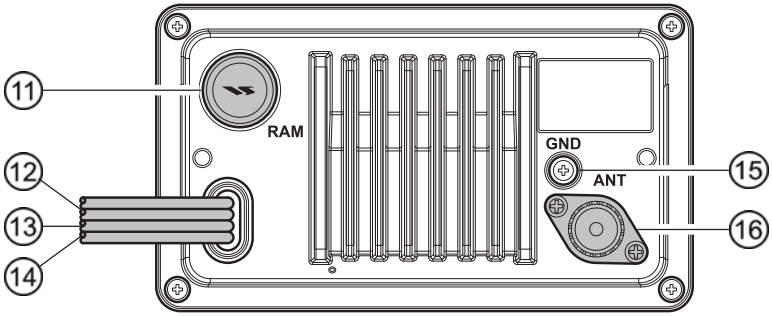
⑦ CALL MENU Key
Press the [**CALL**(**MENU**)] key to access the "DSC MENU".
SECONDARY USE
Press and hold the [**CALL**(**MENU**)] key to access the "SETUP MENU".

⑧ H/L Key
Press the H/L key to toggle between 25 W (High) and 1 W (Low) power. When the TX output power is set to "Low" while the transceiver is on channel 13 or 67, the output power will temporarily switch from "Low" to "High" power until the **PTT** is released. The H/L key does not function on transmit inhibited and low power only channels.

⑨ **SQL** Knob (Squelch Control)
Adjusting this control clockwise, sets the point at which random noise on the channel does not activate the audio circuits but a received signal does. This point is called the squelch threshold. Further adjustment of the squelch control will degrade reception of wanted transmissions.

⑩ Soft Keys
The 3 soft keys functions can be customized by the Setup Menu mode section "**12.12 SOFT KEYS**". When one of the soft keys is pressed briefly, the functions will appear above each key on the display.

10.2 REAR PANEL



⑪ **RAM3** Connector (Remote Station Microphone Connector)
Connects the **GX1600** to the **CMP30** (**RAM3**) Remote Station Microphone. Refer to section "**17 CMP30** (**RAM3**) **REMOTE MIC OPERATION**" for details

⑫ DC Input Cable
Connects the radio to a DC power supply capable of delivering 11 to 16V DC.

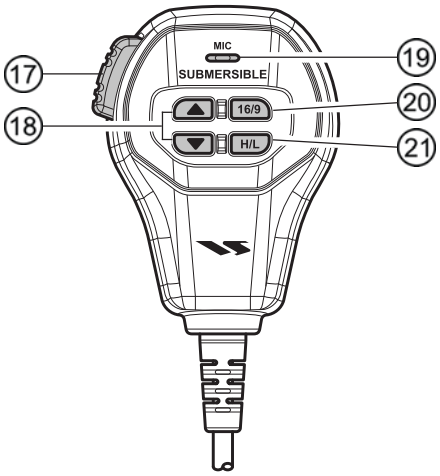
⑬ External Speaker Connection Cable (White & Shield)
an external speaker. See section "**3 OPTIONS**" for a list of optional STANDARD HORIZON Speakers.

⑭ Accessory Connection Cable (Green, Blue, Gray, & Brown)
Connects the **GX1600** to a GPS receiver. Refer to section "**8.4 ACCESSORY CABLE**".

⑮ **GND** Terminal (Ground Terminal)
Connects the **GX1600** to a good ground, for safe and optimum performance.
Use the screw supplied with the radio only.

⑯ **ANT** Jack (Antenna Jack)
Connects an antenna to the transceiver. Use a marine VHF antenna with an impedance of 50 ohms.

10.3 MICROPHONE



⑰ **PTT** (Push-To-Talk) Switch
When in radio mode and the **PTT** switch pressed, the transmitter is enabled for voice communications to another vessel.
When a optional **RAM3** second station microphone is connected and intercom mode is selected, pressing the **PTT** switch enables voice communications from the **GX1600** to the **RAM3** second station microphone.

⑱ ▲ / ▼ Keys
The ▲ and ▼ keys on the microphone function the same as the ▲ and ▼ keys on the front panel of the transceiver.

⑲ Microphone
Transmits the voice message with reduction of background noise, using Clear Voice Noise Reduction Technology.

NOTE

Be sure your mouth is about 1/2 inch (1.3 cm) from the mic hole for best performance.

⑳ 16/9 Key
The 16/9 key on the microphone functions the same as the 16/9 key on the front panel of the transceiver.
Immediately recalls channel 16 from any channel location. Holding down this key recalls channel 9. Pressing the 16/9 key again reverts to the previously selected working channel.

㉑ H/L Key
The H/L key on the microphone functions the same as the H/L key on the front panel of the transceiver.
Press this key to toggle the transmit output power between 25 W (High) and 1 W (Low) power.

11 BASIC OPERATION

11.1 RECEPTION

1. After the transceiver has been installed, ensure that the power supply and antenna are properly connected.
2. Press and hold the key until the radio turns on.
3. Rotate the **SQL** knob fully counterclockwise. This state is known as “squelch off”.
4. Rotate the **VOL** knob until noise or audio from the speaker is at a comfortable level.
5. Rotate the **SQL** knob clockwise until the random noise disappears. This state is known as the “squelch threshold.”
6. Press the / key to select the desired channel. Refer to the channel chart on page 121 for available channels.
7. When a message is received, adjust the volume to the desired listening level. The “ BUSY ” indicator on the display indicates communications is being received.

11.2 TRANSMISSION

1. Perform steps 1 through 6 of RECEPTION.
2. Before transmitting, monitor the channel to ensure it is clear.
   THIS IS AN FCC REQUIREMENT!
3. Press the **PTT** (push-to-talk) switch. The “ TX ” indicator on the LCD is displayed.
4. Speak slowly and clearly into the microphone.
5. When the transmission is finished, release the **PTT** switch.

NOTE

This is a noise-canceling microphone. Position the Oval Slot label “**MIC**” within 1/2 inch (1.3 cm) from the mouth for optimum performance.

11.3 TRANSMIT TIME - OUT TIMER (TOT)

When the **PTT** switch on the microphone is held down, transmit time is limited to 5 minutes. This limits unintentional transmissions due to a stuck microphone. About 10 seconds before automatic transmitter shutdown, a warning beep will be heard from the speaker(s). The transceiver will automatically go to receive mode, even if the **PTT** switch is continually held down. Before transmitting again, the **PTT** switch must first be released and then pressed again.

11.4 SIMPLEX/DUPLEX CHANNEL USE

Refer to the VHF MARINE CHANNEL CHART (page121) for instructions on use of simplex and duplex channels.

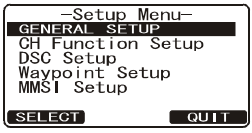
NOTE

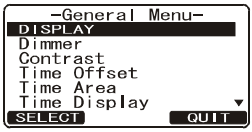
All channels are factory-programmed in accordance with FCC (USA), Industry Canada (Canada), and International regulations. Mode of operation cannot be altered from simplex to duplex or vice-versa.

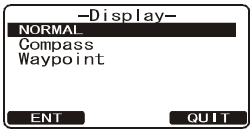
11.5 DISPLAY TYPE

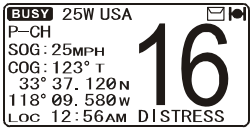
The **GX1600** display can be setup to show displays other than the default "NORMAL" VHF display by using the procedure below:

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears, then select "**GENERAL SETUP**" with the ▲/▼ key.
2. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**DISPLAY**".
3. Press the [**SELECT**] soft key.
4. Press the ▲/▼ key to select desired screen "**NORMAL**", "**COMPASS**", or "**WAYPOINT**".
5. Press the [**SELECT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.

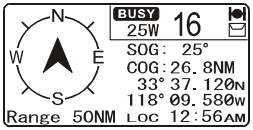




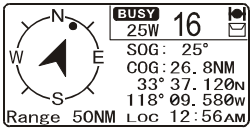




"**NORMAL**" DISPLAY



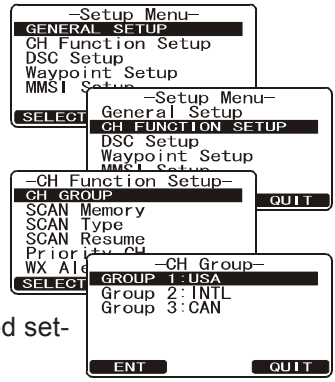
"**COMPASS**" DISPLAY



"**WAYPOINT**" DISPLAY

11.6 USA, CANADA, AND INTERNATIONAL MODE

To change the channel group from USA to Canada or International:



1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**CH FUNCTION SETUP**".
2. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**CH GROUP**".
3. Press the [**SELECT**] soft key.
4. Press the ▲/▼ key to select desired channel group "**USA**", "**INTL**", or "**CANADA**".
5. Press the [**ENT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.

11.7 NOAA WEATHER CHANNELS

1. To receive a NOAA weather channel, press the one of the Soft keys momentarily, then press the [**WX**] soft key from any channel. The transceiver will go to the last selected weather channel.
2. Press the ▲/▼ key to select a different NOAA weather channel.
3. To exit from the NOAA weather channels, press the one of the Soft keys momentarily, then press the [**WX**] soft key. The transceiver returns to the channel it was on prior to a weather channel.

11.7.1 NOAA Weather Alert

In the event of extreme weather disturbances, such as storms and hurricanes, the NOAA (National Oceanic and Atmospheric Administration) sends a weather alert accompanied by a 1050 Hz tone and subsequent weather report on one of the NOAA weather channels. When the Weather Alert feature is enabled (see section "**13.6 WEATHER ALERT**"), the transceiver is capable of receiving this alert if the following is performed:

1. Program NOAA weather channels into the transceiver's memory for scanning. Follow the same procedure as for regular channels under section "**11.9.2 Programming Scan Memory**."
2. Press the [**SCAN**] soft key once to start memory scanning.
3. The programmed NOAA weather channels will be scanned along with the regular-programmed channels. However, scanning will not stop on a normal weather broadcast unless a NOAA alert is received.
4. When an alert is received on a NOAA weather channel, scanning will stop and the transceiver will emit a loud beep to alert the user of a NOAA broadcast.

5. Press the any key to stop the alert and receive the weather report.

NOTE

If the key is not pressed the alert will sound for 5 minutes and then the weather report will be received.

NOTE

While listening to a weather channel, the radio can decode a weather alert and sound an alarm.

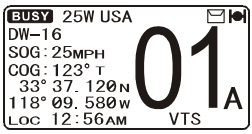
11.7.2 NOAA Weather Alert Testing

NOAA tests the alert system ever Wednesday between 11AM and 1PM. To test the **GX1600**'s NOAA Weather feature, on Wednesday between 11AM and 1PM, setup as in section "**11.7.1 NOAA Weather Alert**" and confirm the alert is heard.

11.8 DUAL WATCH (TO CHANNEL 16)

Dual watch is used to scan two channels for communications. One channel is a normal VHF channel and the other is the priority, channel 16. When a signal is received on the normal channel the radio briefly switches between the normal channel and Channel 16 to look for a transmission. If the radio receives communications on channel 16 the radio stops and listens to Channel 16 until communication ends and then starts Dual watch scan again.

1. Adjust the **SQL** knob until the background noise disappears.
2. Select the channel you wish to dual watch to the priority channel 16.
3. Press the one of the Soft keys, then press the [**DW**] soft key.
   The display will scan between CH16 and the channel that was selected in step 2.
   If a transmission is received on the channel selected in step 2, the **GX1600** will dual watch to CH16.



4. To stop Dual Watch, press the one of the soft keys, then press the [**DW**] soft key again.

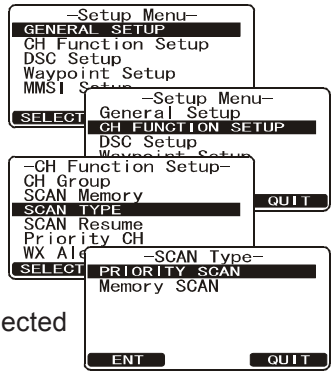
NOTE

The priority channel may be changed from Ch16 to another channel. Refer to section "**14.5 PRIORITY CHANNEL**".

11.9 SCANNING

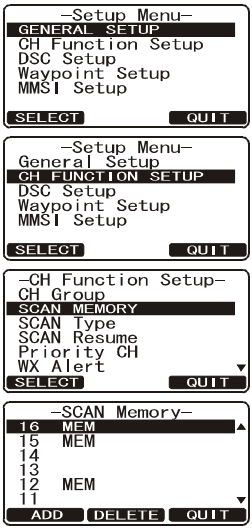
Allows the user to select the scan type from Memory scan or Priority scan. “Memory scan” scans the channels that were programmed into memory. “Priority scan” scans the channels programmed in memory with the priority channel.

11.9.1 Selecting the Scan Type



1. Press and hold down (CALL MENU) key until “**Setup Menu**” appears.
2. Press the ▲/▼ key to select “**CH FUNCTION SETUP**”.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select “**SCAN TYPE**”.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select “**PRIORITY SCAN**” or “**MEMORY SCAN**”.
6. Press the [**SELECT**] soft key to store the selected setting.
7. Press the [**QUIT**] soft key several times to return to radio operation.

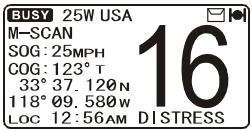
11.9.2 Programming Scan Memory



1. Press and hold down the (CALL MENU) key until “**Setup Menu**” appears.
2. Press the ▲/▼ key to select “**CH FUNCTION SETUP**”.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select “**SCAN MEMORY**”.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select a desired channel to be scanned, the press the [**ADD**] soft key. “**MEM**” icon appears on the display, which indicates the channel has been selected to the scan channel.
6. Repeat step 5 for all the desired channels to be scanned.
7. To DELETE a channel from the list, select the channel then press the [**DELETE**] soft key. “**MEM**” icon disappears from the display.
8. When you have completed your selection, press the [**QUIT**] soft key several times to return to radio operation.

11.9.3 Memory Scanning (M-SCAN)

1. Adjust the **SQL** knob until background noise disappears.
2. Press the one of the Soft keys momentarily, then press the [**SCAN**] soft key. "**M-SCAN**" appears on the display. Scanning will proceed from the lowest to the highest programmed channel number and Preset channel (described in the next chapter) and will stop on a channel when a transmission is received.

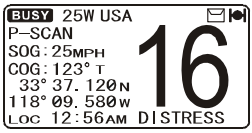


3. The channel number will blink during reception.
4. To stop scanning, press the 16/9 key.

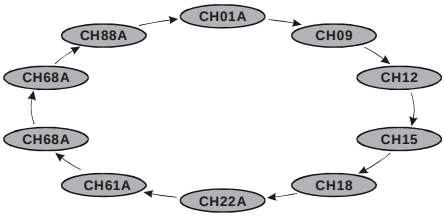
11.9.4 Priority Scanning (P-SCAN)

In the default setting, Channel 16 is set as the priority channel. You may change the priority channel to the desired channel from Channel 16 by the Radio Setup Mode, refer to section "**14.5 PRIORITY CHANNEL**".

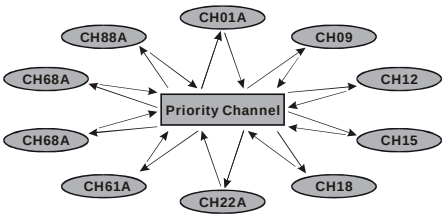
1. Adjust the **SQL** knob until background noise disappears.
2. Press the one of the Soft keys momentarily, then press the [**SCAN**] key. "**P-SCAN**" appears on the display. Scanning will proceed between the memorized channels and Preset channel (described in next chapter) and the priority channel. The priority channel will be scanned after each programmed channel.



3. To stop scanning, press the 16/9 key.



MEMORY SCAN (M-SCAN)



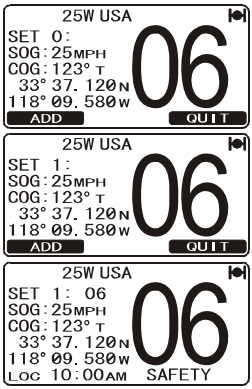
PRIORITY SCAN (P-SCAN)

11.10 PRESET CHANNELS (0 ~ 9): INSTANT ACCESS

10 Preset Channels can be programmed for instant access. Press the one of the Soft keys, then press the [PRESET] key. Pressing the [PRESET] activates the user assigned channel bank. If the [PRESET] key is pressed and no channels have been assigned, an alert beep will be emitted from the speaker.

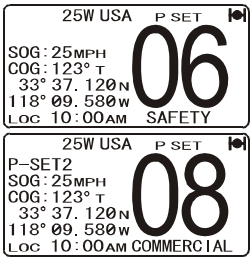
11.10.1 Programming a Preset Channel

1. Press the [▲]/[▼] key to select the channel to be programmed.
2. Press and hold the [PRESET] key until the channel number is blinking.
3. Press the [▲]/[▼] key to select the desired Preset Channel ("SET 0" - "SET 9") you wish to program. When recalls the Preset Channel which already programmed, the operating channel number is shown at the right side of the Preset channel number.
4. Press the [**ADD**] soft key momentarily to program the channel into the Preset channel.
5. Repeat steps 1 through 4 to program the desired channels into Preset Channels "0" ~ "9".



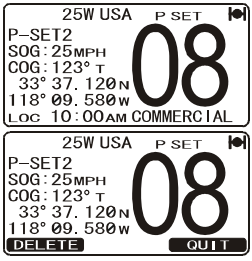
11.10.2 Operation

1. Press the [PRESET] key to recall the Preset Channel. The "P SET" icon will appear at the channel number.
2. Press the [▲]/[▼] key to select the desired Preset Channel ("0" ~ "9"). The Preset Channel number appears ("P-SET0" - "P-SET9") while selecting the Preset Channel.
3. Press the [PRESET] key key again to return to the last selected "regular" channel. The "P SET" icon will disappear from the display.



11.10.3 Deleting a Preset Channel

1. Recall the Preset Channel in accordance with the previous chapter.
2. Press the [▲]/[▼] key to select the Preset Channel to be delete.
3. Press and hold the [PRESET] key until the channel number is blinking.
4. Press the [**DELETE**] soft key momentarily to delete the channel from the Preset Channel.
5. Repeat steps 2 through 4 to delete the desired channels from Preset Channels "0" ~ "9".
6. To finish the deleting the Preset Channel, press the [**QUIT**] soft key

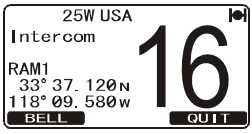


11.11 INTERCOM OPERATION

To access the following Intercom functions one of the soft keys must be setup as IC. Refer to section "**12.12 SOFT KEYS**".

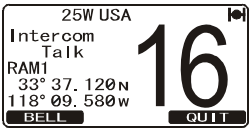
In addition an optional **RAM3** must be connected to perform intercom functions between the radio and the **RAM3**.

11.11.1 Communication

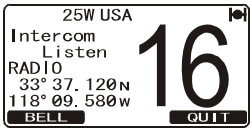


1. Press the one of the Soft keys momentarily, then press the [**IC**] soft key to enable the intercom mode.
   Note: Depending on the programming of the [**IC**] soft key, the [**NEXT**] soft key may have to be pressed to see the [**IC**] soft key.
2. When the intercom mode is enabled, "**Intercom**" is displayed on the radio and **CMP30** (**RAM3**) Remote Station Microphone.
3. Press the **PTT** switch on the radio. "**Talk**" will be shown on the display.
   Note: A warning beep will be heard when the Radios **PTT** and **CMP30** (**RAM3**) **PTT** are pushed at the same time.
4. Speak slowly and clearly into the microphone, hold the microphone about 1/2 inch away from your mouth.

GX1600

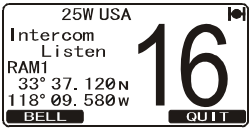


RAM3

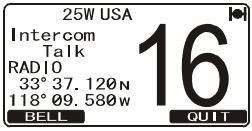


(**GX1600**'s **PTT** switch is pressed)

GX1600



RAM3



(**CMP30**'s **PTT** switch is pressed)

5. When finished, release the **PTT** switch.
6. Press the [**QUIT**] soft key to exit intercom mode and revert to radio mode.

10.12.2 Calling

Press the [**BELL**] soft key when in intercom mode on either the radio or **CMP30** (**RAM3**) mic will produce a calling beep to the other station.

12 DIGITAL SELECTIVE CALLING

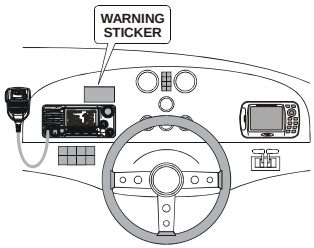
12.1 GENERAL

WARNING

This radio is designed to generate a digital maritime distress and safety call to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel 70 distress and safety watch system. The range of signal may vary but under normal conditions should be approximately 20 nautical miles.

NOTE

A DSC Warning sticker is included with the **GX1600**. To comply with FCC regulations this sticker must be mounted in a location that can be easily viewed from the location of the **GX1600**.



Digital Selective Calling is a semi-automated method of establishing a radio call, it has been designated by the International Maritime Organization (IMO) as an international standard for establishing VHF, MF and HF radio calls. It has also been designated as part of the Global Maritime Distress and Safety System (GMDSS).

Digital Selective Calling allows mariners to instantly send a distress call with GPS position (when connected to the transceiver) to the US Coast Guard and other vessels within range of the transmission. DSC will also allow mariners to initiate or receive Distress, Urgency, Safety, Routine, Position Request, Position Report, Automatic Position Polling and Group calls to or from another vessel equipped with a DSC transceiver.

12.2 MARITIME MOBILE SERVICE IDENTITY (MMSI)

12.2.1 What is an MMSI?

An MMSI is a nine digit number used on Marine Transceivers capable of using Digital Selective Calling (DSC). This number is used like a telephone number to selectively call other vessels.

THIS NUMBER MUST BE PROGRAMMED INTO THE RADIO TO OPERATE DSC FUNCTIONS.

How can I obtain an MMSI assignment?

In the USA, visit the following websites to register:

http://www.boatus.com/mmsi/ or

http://seatow.com/boating_safety/mmsi.asp

In the Canada, visit

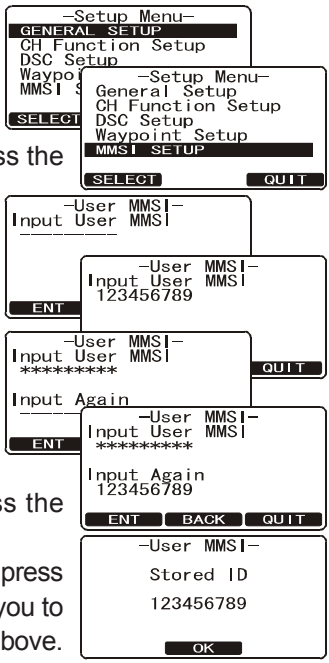
http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01032e.html or

http://www.usps.org/php/mmsi/rules.php

12.2.2 Programming the MMSI

WARNING

A user MMSI can be inputted only once. Therefore **please be careful not to input the incorrect MMSI number.** If you need to change the MMSI number after it has been entered, the radio will have to be returned to Factory Service. Refer to the section "**18.2 FACTORY SERVICE**."



1. Press and hold down the CALL MENU key until the "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**MMSI SETUP**".
3. Press the [**SELECT**] soft key. (To cancel, press the [**ENT**] soft key.)
4. Press the ▲/▼ key to select the first number of your MMSI, then press the [**ENT**] soft key to step to the next number.
5. Repeat step 4 to set your MMSI number (nine digits).
6. If a mistake was made entering in the MMSI number, press the [**BACK**] soft key until the wrong number is selected, then press the ▲/▼ key to correct the entry and press the [**ENT**] soft key.
7. When finished programming the MMSI number, press and hold the [**ENT**] soft key. The radio will ask you to input the MMSI number again. Use steps 4 - 6 above.
8. After the second number has been input, press and hold the **CHANNEL** knob to store the MMSI.
9. Press the [**OK**] soft key to return to radio operation.

NOTE

To view your MMSI after programming to ensure it is correct, perform steps 1~3. Look that the MMSI number shown on the display is correct.

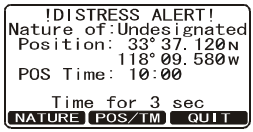
12.3 DSC DISTRESS CALL

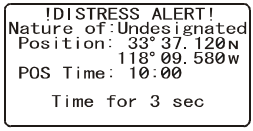
The **GX1600** is capable of transmitting and receiving DSC Distress messages to all DSC radios. The **GX1600** may be connected to a GPS to also transmit the Latitude, Longitude of the vessel.

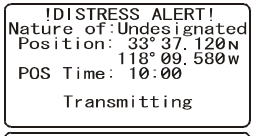
12.3.1 Transmitting a DSC Distress Call

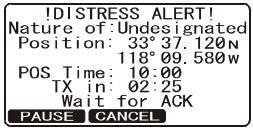
NOTE

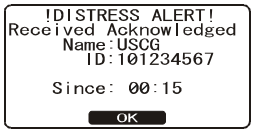
To be able to transmit a DSC distress call an MMSI number must be programmed, refer to section "**11.2.2 Programming the MMSI**." In order for your ships location to be transmitted a GPS must be connected to the **GX1600**, refer to section "**8.4 ACCESSORY CABLE**."











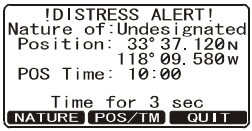
1. Lift the red spring loaded DISTRESS cover and press the [**DISTRESS**] key. The "**DISTRESS ALERT**" menu will appear on the display.
2. Press and hold the [**DISTRESS**] key. The radios display will count down (3-2-1) and then transmit the Distress call. The backlight of the display and keypad flashes while the radios display is counting down.
3. When the distress signal is sent, the transceiver watches for a transmission between CH16 and CH70 until an acknowledgment signal is received.
4. If an acknowledgment is received, select channel 16 and advise your distress situation.
5. If no acknowledgment is received, the distress call is repeated in 4 minute intervals until a DSC acknowledgment is received.
6. When a DSC Distress acknowledgment is received, a distress alarm sounds and channel 16 is automatically selected. The display shows the MMSI of the ship responding to your distress.
   RECEIVED ACK: acknowledgment signal is received.
   RECEIVED RLY: relay signal is received from another vessel or coast station.
7. Press the **PTT** button and state your name, vessel name, number of persons on board and the distress situation, then say over. wait for a reply from the acknowledging ship.
8. To turn off the Distress alarm until the radio retransmits the distress call, press the [**16/9**] key.

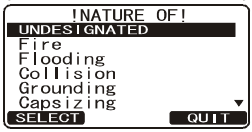
Transmitting a DSC Distress Alert with Nature of Distress

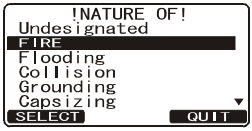
The **GX2000/GX2100** is capable of transmitting a DSC Distress Alert with the following "Nature of Distress" categories:

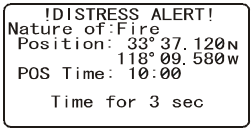
Undesignated, Fire, Flooding, Collision, Grounding, Capsizing, Sinking, Adrift, Abandoning, Piracy, MOB

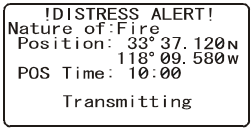
1. Lift the red spring loaded DISTRESS cover and press the [**DISTRESS**] key. The "**DISTRESS ALERT**" menu will appear on the display.
2. Press the [**NATURE**] soft key, then press the ▲/▼ key to select the desired nature of distress category.
3. Press and hold the [**DISTRESS**] key. The radios display will count down (3-2-1) and then transmit the Distress call. The backlight of the display and keypad flashes while the radios display is counting down.
4. When the distress signal is sent, the transceiver watches for a transmission between CH16 and CH70 until an acknowledgment signal is received.
5. If no acknowledgment is received, the DSC distress call is repeated in 4 minute intervals until an acknowledgment is received.
6. When a DSC Distress acknowledgment is received, a distress alarm sounds and channel 16 is automatically selected. The display shows the MMSI of the ship responding to your distress.
   RECEIVED ACK: acknowledgment signal is received.
   RECEIVED RLY ACK: relay acknowledgment signal is received from another vessel or coast station.
7. Press the **PTT** button and state your name, vessel name, number of persons on board and the distress situation, then say over. wait for a reply from the acknowledging ship.
8. To turn off the Distress alarm until the radio retransmits the distress call, press the 16/9 key.

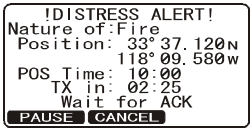


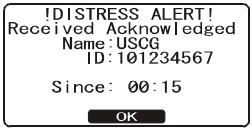








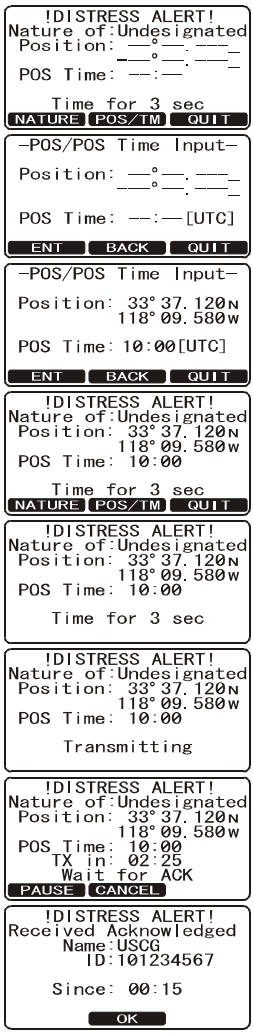




Transmitting a DSC Distress Alert with Manual Position of Input

When the **GX1600** is not connected to a GPS receiver, you may input the latitude/longitude of your vessel manually and may send DSC Distress Alert.

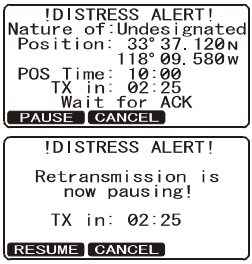
1. Lift the red spring loaded DISTRESS cover and press the [**DISTRESS**] key. The "**DISTRESS ALERT**" menu will appear on the display.
2. Press the [**POS/TM**] soft key.
3. Enter the latitude/longitude of your vessel and your local UTC time in the 24-hour notation. Press the ▲/▼ key to select the number and press the [**ENT**] soft key to move the cursor to the next character. You may backspace the cursor by pressing the [**BACK**] soft key, if you make a mistake.
4. When you have completed your selection, press and hold in the [**ENT**] soft key for two seconds to save the setting.
5. Press and hold the [**DISTRESS**] key. The radios display will count down (3-2-1) and then transmit the Distress call. The backlight of the display and keypad flashes while the radios display is countdown.
6. When the distress signal is sent, the transceiver "shadow-watches" for a transmission between CH16 and CH70 until an acknowledgment signal is received.
7. If no acknowledgment is received, the distress call is repeated in 4 minute intervals until an acknowledgment is received.
8. When a DSC Distress acknowledgment is received, a distress alarm sounds and channel 16 is automatically selected. The display shows the MMSI of the ship responding to your distress.
   RECEIVED ACK: acknowledgment signal is received.
   RECEIVED RLY ACK: relay acknowledgment signal is received from another vessel or coast station.
9. Press the **PTT** button and state your name, vessel name, number of persons on board and the distress situation, then say over. wait for a reply from the acknowledging ship.
10. To turn off the Distress alarm until the radio retransmits the distress call, press the 16/9 key.



Pausing a DSC Distress Call

After a DSC Distress call is transmitted, the DSC distress call is repeated every 4 minutes until the call is canceled by the user or until the radio is turned on and off again. The **GX1600** has provision to suspend (Pause) the retransmitting of the distress call by the procedure below.

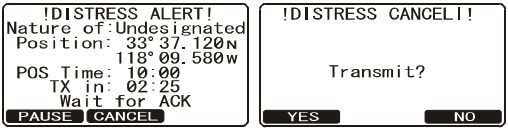
1. After the distress call is transmitted, the radio will show the top display to the right.
   Looking at this display you will notice TX in: 02:25, this is the time when the radio will re-transmit the DSC distress call.
2. To suspend re-transmitting the DSC call, press the [**PAUSE**] soft key.
3. To resume counting down to transmit the DSC Distress call, press the [**RESUME**] soft key.



Cancel a DSC Distress Call

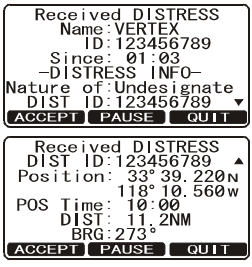
If a DSC Distress call was sent by error the **GX1600** allows you to send a message to other vessels to cancel the Distress Call that was made.

Press the [**CANCEL**] soft key, then press [**YES**] soft key.

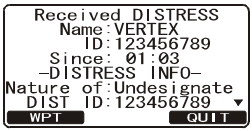


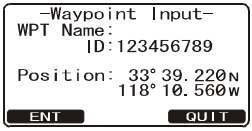
12.3.2 Receiving a DSC Distress Call

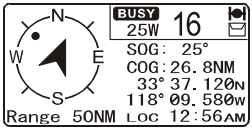
1. When a DSC Distress call is received, an emergency alarm sounds.
2. Press any key to stop the alarm.
3. The display shows the position of the vessel in distress. To show additional information of the vessel in distress, press the ▼ key (refer to the second display).
   On the display you will notice 3 soft key selections. These selections are described below:
   ACCEPT: Press this key to accept the DSC distress call and to switch to Channel 16.
   Note: If a key is not pressed for 30 seconds or longer the radio will automatically select Channel 16.
   PAUSE: Press this key to temporarily disable automatic switching to channel 16.
   QUIT: Press this key to quit the automatic channel 16 switching and revert to the last selected working channel.



4. Press the [**WPT**] soft key to enter the "**Waypoint Input**" menu, then enter the desired waypoint name (up to 11 characters), described previously (select the letter/number by pressing the ▲/▼ key and move the cursor by pressing the [**ENT**]/[**BACK**] soft key).
6. The ID is the MMSI from the vessel in distress.
7. When you are finished entering the waypoint name, press and hold the [**ENT**] soft key to replace the display to the "WAYPOINT" Screen. The display indicates the distance and direction of the distressed vessel, and also the compass indicates the distressed vessel by dot (●).







8. To return to the radio operation:
   1) Press and hold down the CALL MENU key until "**Setup Menu**" appears.
   2) Press the ▲/▼ key to select "**DSC SETUP**" menu.
   3) Press the [**SELECT**] soft key, then select "**GENERAL SETUP**" with the ▲/▼ key.
   4) Press the [**SELECT**] soft key, then select "**NORMAL**" with the ▲/▼ key.
   5) Press the [**SELECT**] soft key to return to radio operation.

NOTE

You must continue monitoring channel 16 as a coast station may require assistance in the rescue attempt.

12.4 ALL SHIPS CALL

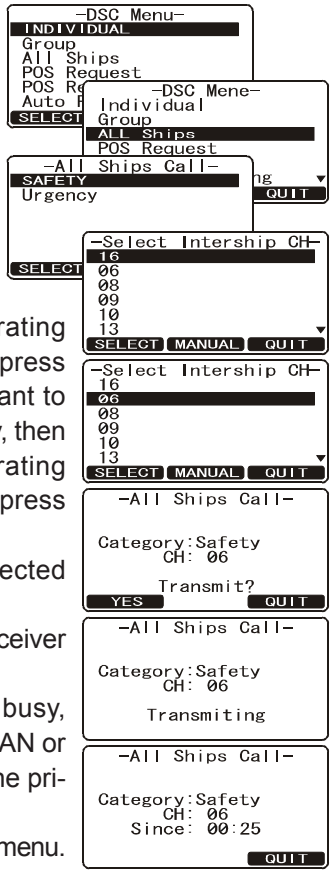
The All Ships Call function allows contact to be established with DSC equipped vessels without having their MMSI in the individual calling directory. Also, priority for the call can be designated as Urgency or Safety.

URGENCY Call: This type of call is used when a vessel may not truly be in distress, but have a potential problem that may lead to a distress situation. This call is the same as saying PAN PAN PAN on channel 16.

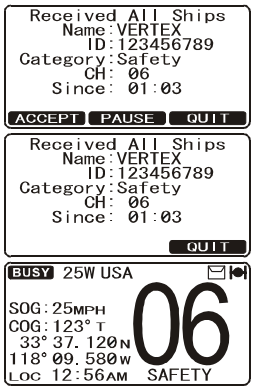
SAFETY Call: Used to transmit boating safety information to other vessels. This message usually contains information about an overdue boat, debris in the water, loss of a navigation aid or an important meteorological message. This call is the same as saying Securite, Securite, Securite."

12.4.1 Transmitting an All Ships Call

1. Press the [**CALL**(**MENU**)] key. The "**DSC Menu**" will appear.
2. Rotate the **CHANNEL** knob to select "**All SHIPS**".
3. Press the [**SELECT**] soft key. (To cancel, press the [**QUIT**] soft key.)
4. Press the ▲/▼ key to select the nature of call ("**SAFETY**" or "**URGENCY**"), then press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. If the channel you want to use is not listed, press the [**MANUAL**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key.
6. Press the [**YES**] soft key to transmit the selected type of all ships DSC call.
7. After the All Ships Call is transmitted, the transceiver will switch to the selected channel.
8. Listen to the channel to make sure it is not busy, then key the microphone and say PAN PAN PAN or "Securite, Securite, Securite" depending on the priority of the call.
9. Press the [**QUIT**] soft key to exit the ALL ship call menu.



12.4.2 Receiving an All Ships Call



1. When an all ships call is received, an emergency alarm will sound.
   The display shows the MMSI of the vessel transmitting the All Ships Call and the radio will change to the requested channel after 10 seconds.
2. Press any key to stop the alarm.
3. Monitor the requested channel until the ALL SHIPs voice communication is completed.
   On the display you will notice 3 soft key selections. These selections are described below:
   ACCEPT: Press this key to accept the DSC All Ship call and to switch to requested channel.
   Note: If a key is not pressed for 30 seconds or longer the radio will automatically change to the requested channel.
   PAUSE: Press this key to temporarily disable automatic switching to the requested channel.
   Note: In some cases automatically switching to a requested channel might disrupt import ongoing communications. This feature allows commercial users to suspend channel switching and stay on the working channel selected before the All Ships call was received.
   QUIT: Press this key to quit the automatic channel switching and revert to the last selected working channel.
4. Press the [**QUIT**] soft key to return to the channel display.

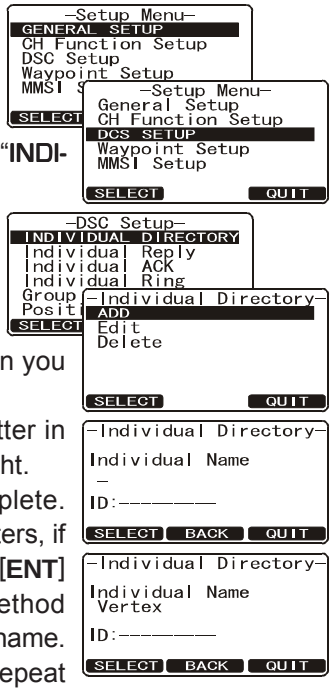
12.5 INDIVIDUAL CALL

This feature allows the **GX1600** to contact another vessel with a DSC VHF radio and automatically switch the receiving radio to a desired communications channel. This feature is similar to calling a vessel on CH16 and requesting to go to another channel (switching to the channel is private between the two stations). Up to 80 Individual contacts may be programmed.

12.5.1 Setting up the Individual / Position Call Directory

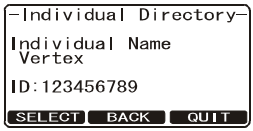
The **GX1600** has a DSC directory that allows you to store a vessel or person's name and the MMSI number associated with vessels you wish to transmit Individual calls, Auto Polling, Position Request, and Position Report transmissions.

To transmit an Individual call you must program this directory with information of the persons you wish to call, similar to a cellular phones telephone directory.



1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**INDIVIDUAL DIRECTORY**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key.
5. Select "**ADD**" with the ▲/▼ key, then press the [**SELECT**] soft key.
6. Press the ▲/▼ key to scroll through the first letter of the name of the vessel or person you want to reference in the directory.
7. Press the [**ENT**] soft key to store the first letter in the name and step to the next letter to the right.
8. Repeat step 6 and 7 until the name is complete. The name can consist of up to eleven characters, if you do not use all eleven characters press the [**ENT**] soft key to move to the next space. This method can also be used to enter a blank space in the name. If a mistake was made entering in the name repeat pressing the [**BACK**] soft key until the wrong character is selected, then press the ▲/▼ key to correct the entry.
9. After the eleventh letter or space has been entered, press and hold the [**ENT**] soft key to advance to the MMSI (Maritime Mobile Service Identity Number) number entry.
10. Press the ▲/▼ key to scroll through numbers, 0-9. To enter the de-

sired number and move one space to the right by pressing the [**ENT**] soft key. Repeat this procedure until all nine space of the MMSI number are entered.

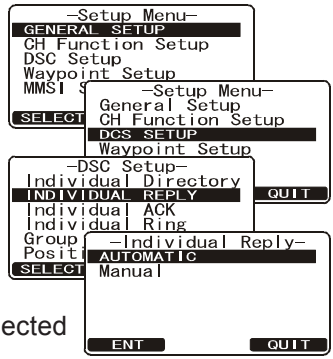


11. If a mistake was made entering in the MMSI number repeat pressing the [**BACK**] soft key until the wrong number is selected, then press the ▲/▼ key to correct the entry.
12. To store the data entered, press and hold the [**ENT**] soft key.
13. To enter another individual address, repeat steps 5 through 12.
14. Press the [**QUIT**] soft key several times to return to radio operation.

12.5.2 Setting up Individual Reply

This menu item sets up the radio to automatically (default setting) or manually respond to a DSC Individual call requesting you to switch to a working channel for voice communications. When Manual is selected the MMSI of the calling vessel is shown allowing you to see who is calling. This function is similar to caller id on a cellular phone.

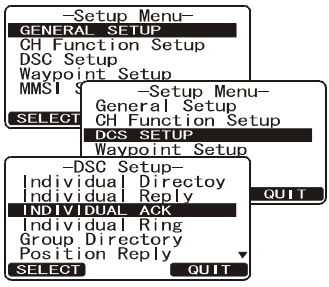
1. Press and hold down the CALL/MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**INDIVIDUAL REPLY**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select "**AUTOMATIC**" or "**MANUAL**".
6. Press the [**SELECT**] soft key to store the selected setting.
7. Press the [**QUIT**] soft key several times to return to radio operation.



12.5.3 Enabling the Individual Acknowledgment

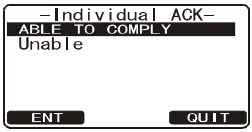
The **GX1150** can select either reply message "Able" (default) or "Unable" when the Individual Reply setting (described previous section) is set to "AUTOMATIC".

1. Press and hold down the CALL/MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**INDIVIDUAL ACK**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select "**ABLE TO**



COMPLY" or "**UNABLE**".

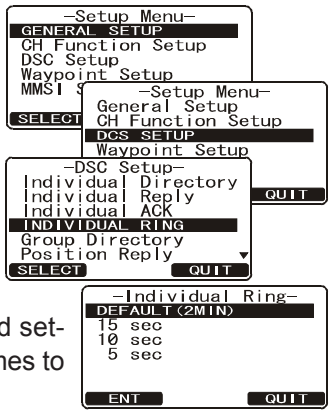
6. Press the [**ENT**] soft key to store the selected setting, then press the [**QUIT**] soft key several times to return to radio operation.



12.5.4 Setting up Individual/Group Call Ringer

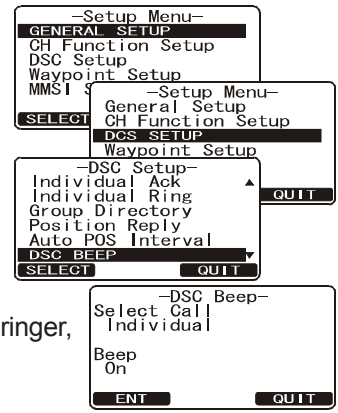
When a Individual Call or Group Call is received the radio will produce a ringing sound for 2 minutes. This selection allows the Individual Call ringer time to be changed.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**INDIVIDUAL RING**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select ringing time of a Individual Call.
6. Press the [**ENT**] soft key to store the selected setting, then press the [**QUIT**] soft key several times to return to radio operation.



The **GX1600** has the capability to turn off the Individual and Group call ringer.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**DSC BEEP**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key.
5. Press the ▲/▼ key to select "**Individual**" if you wish to disable the Individual call ringer, or "**Group**" if you wish to disable the Group call ringer, then press the [**SELECT**] soft key.
6. Press the ▲/▼ key to select "**Off**".
7. Press the [**ENT**] soft key to store the selected setting.
8. Press the [**QUIT**] soft key several times to return to radio operation.



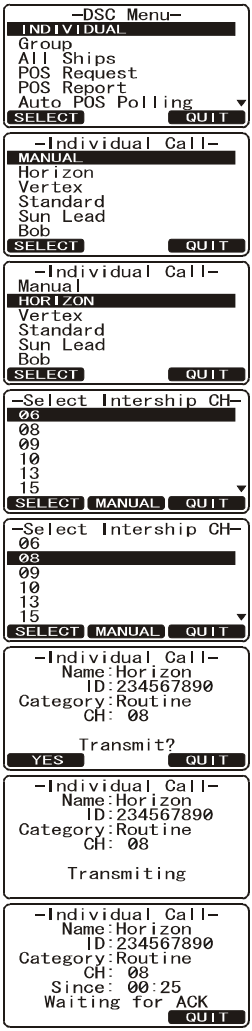
To re-enable the ringer tone, repeat the above procedure, pressing the ▲/▼ key to select "**On**" in step "6" above.

12.5.5 Transmitting an Individual Call

This feature allows the user to contact another vessel with a DSC radio. This feature is similar to calling a vessel on CH16 and requesting to go to another channel.

Pre-Programmed Calling

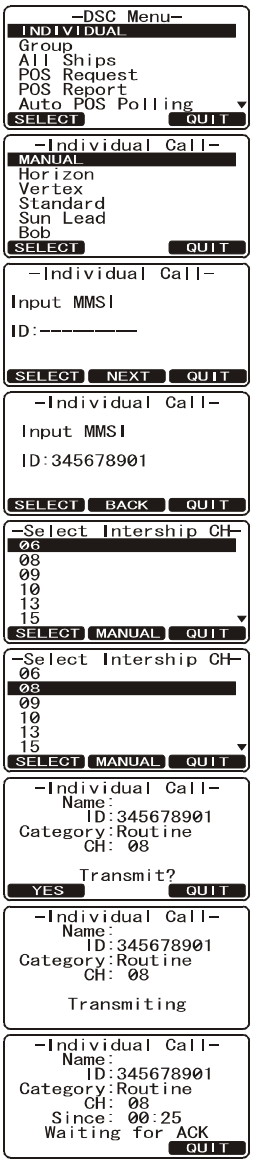
1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the ▲/▼ key to select "**INDIVIDUAL**". (To cancel, press the [**QUIT**] soft key.)
3. Press the [**SELECT**] soft key. The transceiver will beep, and the "Last Individual Call" will appear.
4. Press the ▲/▼ key to select the "Individual" you want to contact.
5. Press the [**SELECT**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. If the channel is not shown in the list, press the [**MANUAL**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key.
6. Press the [**YES**] soft key to transmit the individual DSC signal.
7. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected on step 5 above and a ringing tone sounds.
8. Press the [**QUIT**] soft key to listen to the channel to make sure it is not busy, then press the microphone's **PTT** switch and talk into the microphone to the other vessel.



Manual Calling

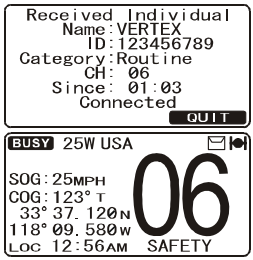
You may enter an MMSI number manually to contact without storing it in the Individual Directory.

1. Press the CALL MENU key. The "**DSC Menu**" menu will appear.
2. Press the ▲/▼ key to select "**INDIVIDUAL**". (To cancel, press the [**QUIT**] soft key.)
3. Press the [**SELECT**] soft key. The transceiver will beep, and the "Last Individual Call" will appear.
4. Press the [**NEW ID**] soft key, then select "**MANUAL**" with the ▲/▼ key.
5. Press the [**SELECT**] soft key.
6. Press the ▲/▼ key to select the first number of the MMSI which you want to contact, then press the [**SELECT**] soft key to step to the next number.
7. Repeat step 6 to set the MMSI number (nine digits).
8. If a mistake was made entering in the MMSI number, repeat pressing the [**BACK**] key until the wrong number is selected, then press the ▲/▼ key to correct the entry.
9. When finished entering the MMSI number, press and hold the [**SELECT**] soft key.
10. Press the [**SELECT**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. If the channel is not shown in the list, press the [**MANUAL**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key.
11. Press the [**YES**] soft key to transmit the individual DSC signal.
12. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected on step 5 above and a ringing tone sounds.
13. Press the [**QUIT**] soft key to listen to the channel to make sure it is not busy, then press the microphone's **PTT** switch and talk into the microphone to the other vessel.



12.5.6 Receiving an Individual Call

When a Individual DSC call is received, the radio will automatically respond (Default setting) to the calling ship, and switch to the requested channel for voice communications. Refer to section "**11.5.2 Setting up Individual Reply**" to change the reply to manual if you want to see who is calling before replying to the call.



1. When an individual call is received, an individual call ringing alarm sounds.
   The radio automatically switches to the requested channel. The display shows the MMSI of the vessel calling.
2. Press any key to stop the alarm.
3. Press the [**QUIT**] soft key to return to radio operation
4. Press the microphone's **PTT** switch and talk into the microphone to the other vessel.

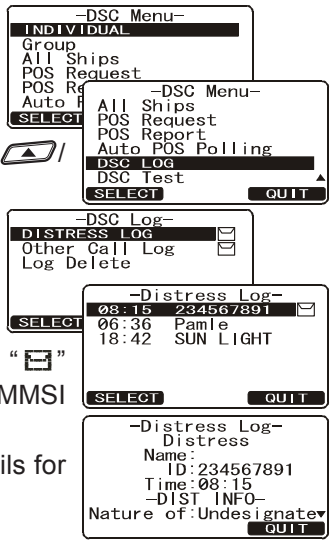
12.6 DSC LOG OPERATION

The **GX1600** logs received distress calls and individual calls. The DSC Log feature is similar to an answer machine where calls are recorded for review and a "✉" icon will appear on the radios display. The **GX1600** can store up to the latest 27 Distress, and up to the latest 64 other calls (Individual, Group, All Ship etc.).

12.6.1 Reviewing and Relaying a Logged DSC Distress Call

The **GX1600** radios allows logged DSC distress call to be reviewed and relayed to a specific MMSI.

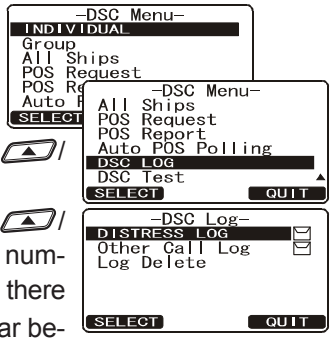
1. Press the CALL MENU key. The "**DSC menu**" will appear.
2. Press the ▲/▼ key to select "**DSC LOG**" menu.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**DISTRESS LOG**".
4. Press the [**SELECT**] soft key, then press the ▲/▼ key to select the station (name or MMSI number) you want to review and/or relay the distress call to other vessels.
   Note: When there is an unread received call, "✉" icon will appear behind the station name (or MMSI number).
5. Press the [**SELECT**] soft key, to review details for the selected station.



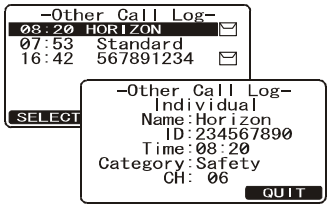
12.6.2 Reviewing a Logged All Ship or Individual Call

Reviewing a logged All ship or Individual call.

1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the ▲/▼ key to select "**DSC LOG**" menu.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**OTHER CALL LOG**".
4. Press the [**SELECT**] soft key, then press the ▲/▼ key to select the station (name or MMSI number) you want to review and/or call back. When there is an unread received call, "✉" icon will appear behind the station name (or MMSI number).

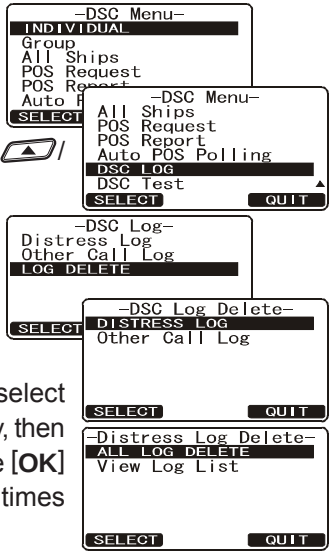


5. Press the [**SELECT**] soft key, to review details for the selected station.

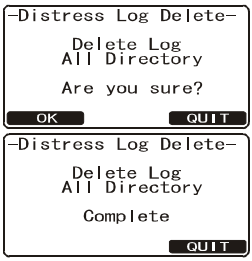


12.6.3 Deleting a Call from the "DSC LOG" Directory

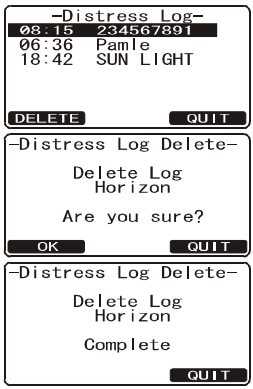
1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the ▲/▼ key to select "**DSC LOG**" menu.
3. Press the [**SELECT**] soft key, then press the ▲/▼ key to select "**LOG DELETE**" menu.
4. Press the [**SELECT**] soft key, then press the ▲/▼ key to select the category ("**DISTRESS LOG**" or "**OTHER CALL LOG**") to be deleted.
5. Press the [**SELECT**] soft key.
   1) If you want to delete all stations at a time, select the "**ALL LOG DELETE**" with the ▲/▼ key, then press the [**SELECT**] soft key, then press the [**OK**] soft key. Press the [**QUIT**] soft key several times to return to radio operation.
   2) If you want to delete one of the logged stations, select the "**VIEW LOG LIST**" with the ▲/▼ key, then press the [**SELECT**] soft key. Press the ▲/▼ key to select the station (name or MMSI number) to be deleted, then press the [**DELETE**] soft key. The display will show "**Are your sure?**" press the [**OK**] soft key.
6. Press the [**QUIT**] soft key several times to return to radio operation.



"ALL LOG DELETE"



"VIEW LOG LIST"



12.7 GROUP CALL

This feature allows the user to contact a group of specific vessels (example members of a yacht club) using DSC radios with Group call function to automatically switch to a desired channel for voice communications. This function is very useful for yacht clubs and vessels traveling together that want to collectively make announcements on a predetermined channel. Up to 32 Group MMSI may be programmed.

11.7.1 Setup a Group Call

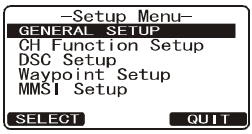
For this function to operate, the same Group MMSI must be programmed into all the DSC VHF radios within the group of vessels that will be using this feature. To understand Group MMSI programming, first a Ship MMSI has to be understood.

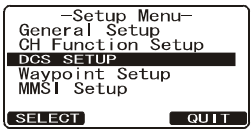
Ship MMSI: The first three digits called a MID (Mobile Identity Group) of a Ship MMSI denote the country the ship registered for a MMSI. The last 6 digits are specific to the Ships ID.
Ship MMSI Example: If your MMSI is “366123456”, “366” is MID which denote the country and “123456” is your ships MMSI.

Group MMSI:

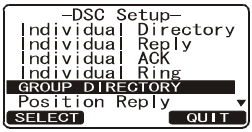
- ❒ Group MMSI numbers are not assigned by the FCC or other organizations licensed to assign ship MMSI numbers.
- ❒ The first digit of a Group MMSI is always set to “0” by International rules. All Standard Horizon radios are preset so when programming a Group MMSI the first digit is set to “0”.
- ❒ The USCG recommends programming the MID of a ships MMSI into the Second, Third and Fourth digits of the Group MMSI as it denotes the area the ship is located in.
- ❒ The last 5 digits are decided upon by persons in the Group. This is an important step as all radios in the Group must contain the same Group MMSI so they can be contacted by each other. There is a chance that another group of vessels may program in the same Group MMSI. If this happens, simply change one or more of the last 5 digits of the Group MMSI.

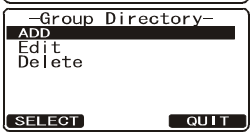
1. Press and hold down the CALL MENU key until “**Setup Menu**” appears.
2. Press the ▲/▼ key to select “**DSC SETUP**” menu.
3. Press the [**SELECT**] soft key, then select “**GROUP DIRECTORY**” with the ▲/▼ key.
4. Press the [**SELECT**] soft key, then select “**ADD**” with the ▲/▼ key.

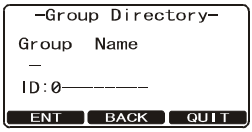


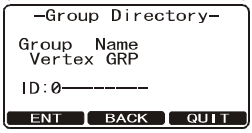


5. Press the [**SELECT**] soft key.
6. Press the ▲/▼ key to scroll through the first letter of the name of the group you want to reference in the directory.
7. Press the [**SELECT**] soft key to store the first letter in the name and step to the next letter to the right.
8. Repeat step 6 and 7 until the name is complete. The name can consist of up to eleven characters, if you do not use all eleven characters press the [**SELECT**] soft key to move to the next space. This method can also be used to enter a blank space in the name. If a mistake was made entering in the name repeat pressing the [**BACK**] soft key until the wrong character is selected, then press the ▲/▼ key to correct the entry.









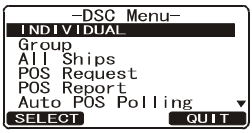
9. After the eleventh letter or space has been entered, press and hold the [**SELECT**] soft key to advance to the GROUP MMSI (Maritime Mobile Service Identity Number) number entry.
10. Press the ▲/▼ key to select the second number of the MMSI (nine digits: first digit permanently set to "0") which you want to contact, then press the [**SELECT**] soft key to step to the next number. Repeat this procedure until all eight space of the MMSI number are entered.

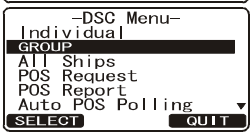
11. If a mistake was made entering in the MMSI number repeat pressing the [**BACK**] soft key until the wrong number is selected, then press the ▲/▼ key to correct the entry.
12. To store the data entered, press and hold the [**SELECT**] soft key.
13. To enter another group address, repeat steps 5 through 12.
14. Press the [**QUIT**] soft key several times to return to radio operation.

12.7.2 Transmitting a Group Call

Pre-Programmed Calling

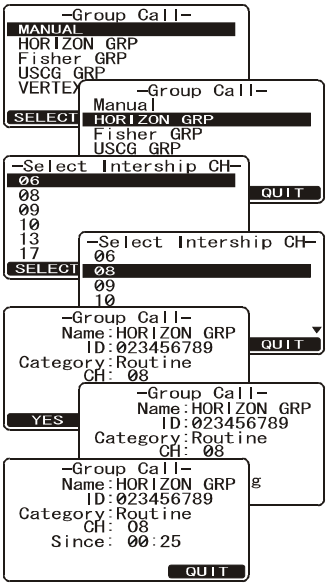
1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the ▲/▼ key to select "**GROUP**". (To cancel, press the [**QUIT**] key.)
3. Press the [**SELECT**] soft key. The transceiver will beep, and the "Last Group Call" will appear.
4. Press the ▲/▼ key to select the "Group" you want to contact.
5. Press the [**SELECT**] soft key, then press the ▲/





key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. If the channel you want is not shown, press the [**MANUAL**] soft key, then press the / key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key.

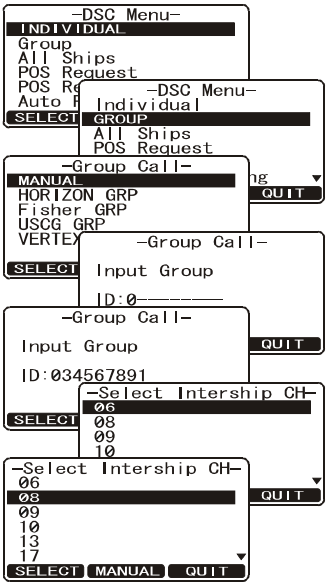
6. Press the [**YES**] soft key to transmit the Group Call signal.
7. When the Group Call signal is sent, the display will be as shown in the illustration at the right.
8. After the Group Call is transmitted, all the radios in the group will switch to the designated channel.
9. Listen to the channel to make sure it is not busy, then press the microphone's **PTT** switch and call the other vessel you desire to communicate with.



Manual Calling

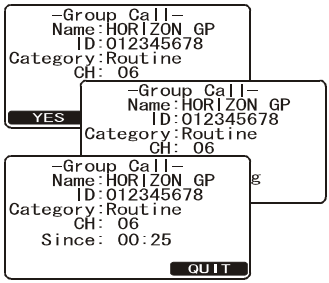
This feature allows you to contact a group of vessels by entering in their Group MMSI manually.

1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the / key to select "**GROUP**". (To cancel, press the [**QUIT**] soft key.)
3. Press the [**SELECT**] soft key. The transceiver will beep, and the "Last Group Call" will appear.
4. Select "**MANUAL**" with the / key.
5. Press the [**SELECT**] soft key.
6. Press the / key to select the first number of the MMSI (nine digits: first digit permanently set to "0") which you want to contact, then press the [**SELECT**] soft key to step to the next number.
7. Repeat step 6 to set the MMSI number.
8. If a mistake was made entering in the MMSI number, repeat pressing the [**BACK**] soft key



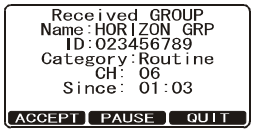
until the wrong number is selected, then press the ▲/▼ key to correct the entry.

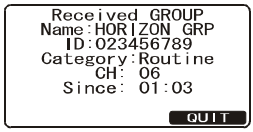
9. When finished entering the MMSI number, press and hold the [**SELECT**] soft key.
10. Press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. If the channel you want is not shown, press the [**MANUAL**] soft key, then press the ▲/▼ key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key.
11. Press the [**YES**] soft key to transmit the Group Call signal.
12. After the Group Call is transmitted, all the radios in the group will switch to the designated channel.
13. Listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to the group of vessels.



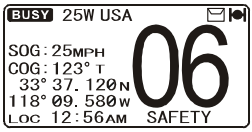
12.7.3 Receiving a Group Call

1. When a group call is received, the **GX1600** will produce a ringing alarm sound.
2. The display shows the GROUP MMSI number.
3. Press the any key to stop the alarm.
4. Monitor the channel for the person calling the Group for a message.
   On the display you will notice 3 soft key selections. These selections are described below:
   ACCEPT: Press this key to accept the DSC Group Ship call and to switch to requested channel.
   Note: If a key is not pressed for 30 seconds or longer the radio will automatically change to the requested channel.
   PAUSE: Press this key to temporarily disable automatic switching to the requested channel.
   Note: In some cases automatically switching to a requested channel might disrupt import ongoing communications. This feature allows commercial users to suspend channel switching and stay on the working channel selected before the Group call was received.
   QUIT: Press this key to quit the automatic channel switching and revert to the last selected working channel.
5. If you want to respond, monitor the channel to make sure it is clear, then press the microphone's **PTT** switch and talk into the microphone to the group of vessels.





6. Press the [**QUIT**] soft key to return to radio operation.



NOTE

After a Group call is received, the time the call was made and the ships MMSI or vessels name will appear on the display.

12.8 POSITION REQUEST

Advancements in DSC have made it possible to poll the location of another vessel and show the position of that vessel on the display of the **GX1600**. Standard Horizon has taken this feature one step further, if any compatible GPS chart plotter is connected to the **GX1600**, the polled position of the vessel is shown on the display of the GPS chart plotter making it easy to navigate to the location of the polled vessel. This is a great feature for anyone wanting to know the position of another vessel. For example your buddy that is catching fish, or finding the location of a person you are cruising with.

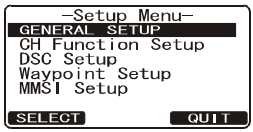
NOTE

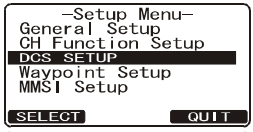
The other vessel must have an operating GPS receiver connected to its DSC radio and must not have its radio set not to deny position requests. (Refer the section "**11.5 INDIVIDUAL CALL**" to enter information into the individual directory).

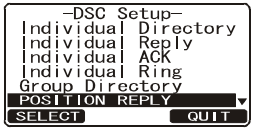
11.8.1 Setting up a Position Reply

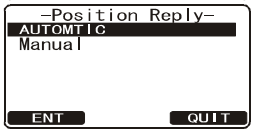
The **GX1600** can be set up to automatically (default setting) or manually send your position when requested by another vessel. This selection is important if you are concerned about someone polling the position of your vessel that you may not want to. In the manual mode you will see the MMSI or persons name shown on the display allowing you to choose to send your position to the requesting vessel.

1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**POSITION REPLY**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key, then select "**AUTOMATIC**" or "**MANUAL**". In "**AUTOMATIC**" mode, after a DSC POS Request is received, the radio will automatically transmit your vessels position. In "**MANUAL**" mode, the display of the **GX1600** will show who is requesting the position and the YES soft key on radio has to be pressed to send your position to the requesting.
5. Press the [**ENT**] soft key to store the selected setting.
6. Press the [**QUIT**] soft key several times to return to radio operation.



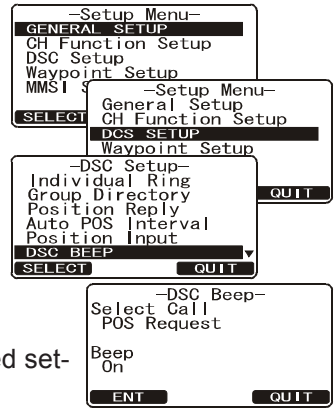






12.8.2 Setting up a Position Request Ringer

The **GX1600** has the capability to turn off the Position Request ringer.

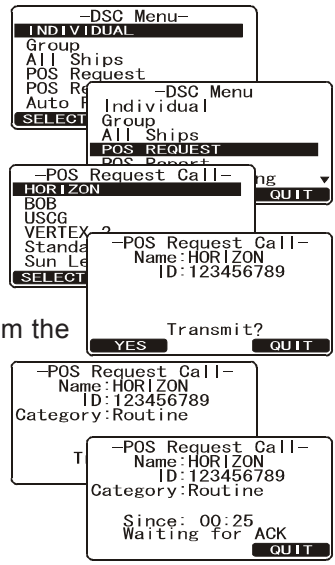


1. Press and hold down the CALL MENU key until "**Setup Menu**" appears.
2. Press the ▲/▼ key to select "**DSC SETUP**" menu.
3. Press the [**SELECT**] soft key, then select "**DSC BEEP**" with the ▲/▼ key.
4. Press the [**SELECT**] soft key, then select "**POS Request**" with the ▲/▼ key.
5. Press the [**ENT**] soft key, then select "**Off**" with the ▲/▼ key.
6. Press the [**ENT**] soft key to store the selected setting.
7. Press the [**QUIT**] soft key several times to return to radio operation.

To re-enable the ringer tone, repeat the above procedure, pressing the ▲/▼ key to select "**On**" in step "5" above.

12.8.3 Transmitting a Position Request to Another Vessel

Pre-Programmed Request



1. Press the CALL MENU key. The "**DSC Menu**" will appear.
2. Press the ▲/▼ key to select "**POS REQUEST**".
3. Press the ▲/▼ key to select a name that was stored in the Individual DSC directory, then press the [**SELECT**] soft key.
4. Press the [**YES**] soft key to transmit the Position Request DSC call.
5. When the **GX1600** receives the position from the polled vessel it is shown on the radio display and also transferred to a GPS Chart plotter with NMEA DSC and DSE sentences.
6. Press the [**QUIT**] soft key to return to radio operation.

NOTE

If the **GX1600** does not receive a position data from the polled vessel, the display will show "NO POSITION DATA."