- Compact and Simple Operation
- DSC position request and send functions with compatible STANDARD HORIZON GPS Chart plotters
- Versatile user-programmable scanning, priority scan and Dual Watch
- One-button access to Channel 16 and 9
- Oversized rotary channel knob, backlit display and keys.

TABLE OF CONTENTS

1   GENERAL INFORMATION

The Vertex Standard GX1000S ECLIPSE DCS is a VHF/FM transceiver designed for use in the frequency range of 156.025 to 163.275 MHz. The GX1000S ECLIPSE DCS can be operated from 11 to 16 VDC and has a switchable RF output power of 1 watt or 25 watts.

The GX1000S ECLIPSE DCS is capable of RTCM SC101 DSC (Digital Selective Calling) operation. The GX1000S ECLIPSE DCS operates on all currently-allocated marine channels which are switchable for use with either USA, International, or Canadian regulations. It has an emergency channel 16 which can be immediately selected from any channel by pressing the red [16/9] key. NOAA Weather channels can also be accessed immediately by pressing the [WX] key.

Other features of the transceiver include: scanning, priority scanning, submersible 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:

❐   GX1000S ECLIPSE DCS Transceiver
❐   Mounting Bracket and attaching hardware
❐   Panel Cover
❐   Owner's Manual
❐   Power Cord

3   OPTIONS

MMB-84   Flush-Mount Bracket

MLS-310   Amplified External Speaker

MLS-300   External Loudspeaker

101W   White External 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 0.6 m (2 feet).

Failure to observe these restrictions will result in exceeding the FCC RF exposure limits.

Antenna Installation:

The antenna must be located at least 0.6 m (2 feet) away from passengers in order to comply with the FCC RF exposure requirements.

ON-LINE WARRANTY REGISTRATION

Please visit www.standardhorizon.com to register the GX1000S 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 Marine Division of Vertex Standard Web site.

PRODUCT SUPPORT INQUIRIES

If you have any questions or comments regarding the use of the GX1000S, 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 7:00-5:00PST.

5 FCC RADIO LICENSE INFORMATION

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

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 (506) and land station licenses can be downloaded via the Internet at www.fcc.gov/forms. To obtain a form from the FCC, call (888) 225-5322.

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.

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

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	K6630303X3S
Industry Canada Type Approval	511B-30303X3S

6 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 Marine Division of Vertex Standard.

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.

7   GETTING STARTED

7.1   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.

7.2   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.

7.3   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 should be used for cable runs over 50 feet RG213 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   INSTALLATION

8.1   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
- the antenna must be mounted at least 3 feet from radio

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.

8.2   ELECTRICAL CONNECTIONS

CAUTION

Reverse polarity connections will damage the radio!

Connect the power cord and antenna to the radio. Antenna and Power Supply connections are as follows (see Figure 1):

1. Mount the antenna at least 3 feet away from the radio. At the rear of the radio, connect the antenna cable.

2. Connect the red power wire to a 13.8 VDC ±20% power source. Connect the black power wire to a negative ground.

3. If an optional remote extension speaker is to be used, refer to next section 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.

8.3   ACCESSORY CABLE

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 using proper waterproofing techniques.

- 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.
- GX1000S can read NMEA-0183 version 2.0 or higher.
- The NMEA supported sentences are:
  Input: GLL, GGA, RMC and GNS (RMC sentence is recommended)
  Output: DSC and DSE
                   (DSC sentences to Standard Horizon Plotter for Position Polling)

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

Phone: (800) 767-2450

          Email: marinetech@vxstdusa.com

8.4   CHECKING GPS CONNECTIONS

After connections have been made between the GX1000S and the GPS, a small satellite icon will appear on the LCD display. To see the additional GPS information, press and hold the [H/L] key. The GX1000S displays "LAT" and "LON" information alternately every two seconds.

8.5   CHANGING THE GPS TIME

From the Factory the GX1000S shows GPS satellite time or UTC time. A time offset is needed to show the local time in your area.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.
2.   Press the [CALL(SET)MENU] key, then select "OFFSET TIME" with the [▼]/[▲] keys.
3.   Press the [CALL(SET)MENU] key.
4.   Press the [▼]/[▲] keys to select time offset from UTC. See illustration below to find your offset time from UTC. If "0:00" is assigned, the time is the same as UTC (Universal Time Coordinated or GMT Greenwich Mean Time).
5.   Press the [CALL(SET)MENU] key to store the time offset.
6.   Press the [16/9] key to exit the menu mode and return to radio operation.

8.6   CHANGING THE TIME LOCATION

Sets the radio to show UTC time or local time with the offset inputted in section 8.6 Changing the GPS Time.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.
2.   Press the [CALL(SET)MENU] key, then select "TIME DISP" in the "Radio Setup" menu with the [▼]/[▲] keys.
3.   Press the [CALL(SET)MENU] key.
4.   Press the [▼]/[▲] keys to select "UTC" or "Local."
5.   Press the [CALL(SET)MENU] key to store   the selected setting.
6.   Press the [16/9] key to exit the menu mode and return to radio operation.

In the local time mode, the display shows the time by the 12-hour system. Meanwhile, the display shows the time by the 24-hour system in the UTC mode.

8.7   OPTIONAL MMB-84 FLUSH MOUNT INSTALLATION

1.   To assist in flush mounting, a template has been included. Use this template to find the mounting location.
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 6 inches or

15 cm deep).

There should be at least 1/2 inch (1.3 cm) between the transceiver's heat sink and any wiring, cables or structures.

3. Cut out the rectangular hole and insert the transceiver.

4. Fasten the brackets to the sides of the transceiver with the lock washer nut combination; so that the mounting screw base faces the mounting surface (see Figure 2).

5. Turn the adjusting screw to adjust the tension so that the transceiver is tight against the mounting surface.

9   CONTROLS AND INDICATORS

NOTE

This section defines each control of the transceiver. See Figure 4 for location of controls. For detailed operating instructions refer to section "10 BASIC OPERATION."

1. POWER SWITCH / VOLUME CONTROL (VOL)

   Turns the transceiver on and off as well as adjusts the audio volume.

   Turn this knob clockwise to turn the radio on and to increase the audio volume level.

   Turn fully counter-clockwise to turn the radio off.

2. SQUELCH CONTROL (SQL)

   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.

3. [H/L] Key

   Press this key to toggle the transmit output power between 25 W (High) and 1 W (Low) power. When the [H/L] key is pressed while the transceiver is on channel 13 or 67, the power will temporarily switch from LO to HI power until the PTT is released.

   The [H/L] key does not function on transmit inhibited and low power only channels.

   NOTE: 1W low power is indicated by LO on the display, when 25W high power is selected the display do not show an indication.

   Secondary use

   Press and hold this key, the LCD displays NAV GPS Time and vessel's position (LAT/LON) when a GPS is connected to the accessory cable of the GX1000S. See section "8.4 CONNECTION OF GPS WITH NMEA OUTPUT" for details.

4. [WX] Key

   Immediately recalls the previously selected NOAA weather channel from any channel.

   Secondary use

   Holding down the [16/9] key while pressing the [WX] key changes from USA, International and

Canadian channel groups.

5. [16/9] Key

Immediately recalls channel 16 from any channel location. Holding down this key recalls channel 9. Pressing the [16/9] key again reverts to the previous selected working channel.

Secondary use

Press and hold the [16/9] key then press the [WX] key to switch the Channel Group.

6. KEYPAD

[▲(UP)]/[▼(DOWN)] Keys

The [▲] and [▼] keys are used to select a desired channel and to select items in the DSC OPERATION and SETUP menus.

[SCAN(MEM)] Key

Press this key to start and stop the scanning of programmed channels. Refer to section "10.12 SCANNING" for details.

Secondary use

To memorized a channel into scan memory, select the channel and press and hold the [SCAN(MEM)] key until "MEM" is shown on the display.

To delete a memorized channel from scan memory, select the channel and press and hold the [SCAN(MEM)] key until "MEM" is removed from the display.

[CALL(SET)MENU] Key

Press the [CALL(SET)MENU] key to access the DSC OPERATION menu. The "INDIVIDUAL CALL," "GROUP CALL," and "ALL SHIPS CALL" functions can be accessed from the DSC OPERATION menu.

NOTE: Before the DSC OPERATION menu can be selected a MMSI must be entered. Refer to section "11.2 MARITIME MOBILE SERVICE IDENTITY (MMSI)."

Secondary use

Press and hold the [CALL(SET)MENU] key to access the "Radio Setup" (refer to section "12 RADIO SETUP MODE") or "DSC Setup" menu (refer to section "11 DIGITAL SELECTIVE CALLING").

7. [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)."

8. DC INPUT CABLE

Connects the radio to a DC power supply capable of delivering 12V DC.

9. EXTERNAL SPEAKER CONNECTION CABLE

Connects the GX1000S to a external speaker.

10. GPS RECEIVER CONNECTION CABLE

Connects the GX1000S to a GPS receiver.

11. ANTENNA JACK

Connects an antenna to the transceiver. Use a marine VHF antenna with an impedance of 50 ohms.

12. PTT (Push-To-Talk) SWITCH

Keys the transmitter when the transceiver is in radio mode.

13. 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 cm) from the mic hole for best performance.

10   BASIC OPERATION

10.1   RECEPTION

1. After the transceiver has been installed, ensure that the power supply and antenna are properly connected.
2. Turn the VOL knob clockwise to turn on the radio.
3. Turn the SQL knob fully counterclockwise. This state is known as "squelch off".
4. Turn up the VOL knob until noise or audio from the speaker is at a comfortable level.
5. Turn the SQL knob clockwise until the random noise disappears. This state is known as the "squelch threshold."
6. Press the [▲] or [▼] key to select the desired channel. Refer to the channel chart on page 83 for available channels.
7. When a message is received, adjust the VOL knob to the desired listening level. The "BUSY" indicator in the LCD is displayed indicating that the channel is being used.

10.2   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 in 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. The oval slot on the bottom of microphone should be positioned within 1/2 inch (1.3 cm) from the mouth for optimum performance.

10.3   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.

10.4   SIMPLEX/DUPLEX CHANNEL USE

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

NOTE

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

10.5   INTERNATIONAL, USA, AND CANADA MODE

1.   To change the modes, hold the [16/9] key and press the [WX] key. The mode changes from International to Canadian to USA with each press of the [WX] key.

2.   "I" will be displayed for International mode, "C" will be displayed for Canadian mode, and "U" will be displayed on the LCD for USA mode.

3.   Refer to the VHF MARINE CHANNEL CHART for allocated channels in each mode.

10.6   NOAA WEATHER CHANNELS

NOTE

NOAA Weather channels are available in the waters of USA and Canada only.

1.   To receive a NOAA weather channel, press the [WX] key from any channel. The transceiver will go to the last selected weather channel.

2.   Press the [▲]/[▼] keys to select a different NOAA weather channel.

3.   To exit from the NOAA weather channels, press the [WX] key. The transceiver returns to the channel it was on prior to a weather channel.

10.6.1   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 "12.9 WX 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 "10.12 SCANNING."

2. Press the [SCAN(MEM)] key once to start memory scanning or priority scanning (determined from the "Radio Setup" selection, see page 56 for details).

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 [WX] key to stop the alert tone and receive the weather report.

NOTE

If the [WX] key is not pressed the alert tone will be emitted for 5 minutes and then the weather report will be received.

NOTE

The Weather Alert feature is also engaged while the transceiver is receiving on one of the NOAA weather channels.

10.6.2   NOAA Weather Alert Testing

NOAA tests the alert system every Wednesday between 11AM and 1PM. To test the GX1000S's NOAA Weather alert feature, on Wednesday between 11AM and 1PM, setup as in previous section and confirm the alert is heard.

10.7   EMERGENCY (CHANNEL 16 USE)

Channel 16 is known as the Hail and Distress Channel. An emergency is 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.

10.8   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 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, 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). When the other vessel returns your call, immediately request another channel by saying "go to," the number of the other channel, and "over." 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.

10.9   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.

10.10   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 20 ([H/L(NAV)] key) for means to temporarily override the low-power limit on these two channels.

10.11   DUAL WATCH (TO PRIORITY CHANNEL)

Dual watch allows the radio to monitor one channel and the assigned Priority channel. By default the priority channel is set to 16, however the priority channel may be changed by referring to section "12.6 PRIORITY CHANNEL SET."

1.   Adjust the SQL knob until the background noise disappears.

2.   Select the channel you wish to dual watch to "Priority channel."

3.   Press the [DW(IC)] key.

The display will scan between Priority channel and the channel that was selected in step 2.

If a transmission is received on the channel selected in step 2, the GX1000S will dual watch between the working channel and the Priority channel.

4.   To stop Dual Watch, press the [DW(IC)] key again.

10.12   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.

10.12.1   Selecting the Scan Type

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2. Press the [CALL(SET)MENU] key, then select "SCAN" in the "RADIO SETUP" menu with the [▼]/[▲] keys.

3. Press the [CALL(SET)MENU] key.

4. Press the [▼]/[▲] keys to select "PSCAN (Priority scan)" or "MSCAN (Memory scan)."

5. Press the [CALL(SET)MENU] key to store the selected setting.

6. Press the [16/9] key to exit the menu mode and return to radio operation.

10.12.2   Memory Scanning (M-SCAN)

1. Adjust the SQL knob until background noise disappears.

2. Select a desired channel to be scanned using the [▼]/[▲] keys. Press and hold the [SCAN(MEM)] key for one second, "MEM" will appear on the LCD which indicates the channel has been programmed into the transceivers memory.

3. Repeat step 2 for all the desired channels to be scanned.

4. To DELETE a channel from the transceiver's memory, select the channel then press and hold the [SCAN(MEM)] key for one second, "MEM" will disappear in the LCD.

5. To start scanning, just press the [SCAN(MEM)] key momentarily. "MSCAN" appears on the LCD. Scanning will proceed from the lowest to the highest programmed channel number and will stop on a channel when a transmission is received.

6. The channel number will blink during reception.

7. To stop scanning, press the [16/9] or [WX] key.

10.12.3   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 the Channel 16 by the Radio Setup Mode, refer to section "12.6 PRIORITY CHANNEL SET."

1. Adjust the SQL knob until background noise disappears.

2. Select a desired channel to be scanned using the [▼]/[▲] keys. Press and hold the [SCAN(MEM)] key for one second, "MEM" will appear on the display which indicates the channel has been programmed into the transceivers memory.

3. Repeat step 2 for all the desired channels to be scanned.

4. To DELETE a channel from the transceiver's memory, select the channel then press and hold the [SCAN(MEM)] key until "MEM" is removed from the display.

5. To start priority scanning, just press the [SCAN(MEM)] key momentarily. "PSCAN" appears on the LCD. Scanning will proceed between the memorized channels, and the priority channel. The

priority channel will be scanned after each programmed channel.

6.   To stop scanning, press the [16/9] or [WX] key.

10.13   NAVIGATION INDICATION

The transceiver has the ability to display Time and the position (LAT/LON), when connected to a GPS receiver.

1.   Press and hold the [H/L] key, displays "LAT" and "LON" information alternately every two seconds. If the GPS receiver is not receiving a fix, the display will be as shown in the illustration on the right.

     NOTE: When Ch16 is selected only lat/lon will shown.

2.   To hide the position information, press and hold the [H/L] key again.

11   DIGITAL SELECTIVE CALLING

11.1   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 GX1000S. To comply with FCC regulations this sticker must be mounted in a location that can be easily viewed from the location of the GX1000S. Make sure the chosen location is clean and dry before applying the sticker.

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). It is planned that DSC will eventually replace aural watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts.

This new system allows mariners to instantly send a distress call with GPS position (when connected to the transceiver) to the 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 SEND, and Group calls to or from another vessel equipped with a DSC transceiver.

11.2   DSC SCAN

When the radio is shipped from the factory it is programmed so CH70 (the DSC channel) is scanned at all times. There is a selection in the SETUP MENU to disable the DSC SCAN. However, turning off DSC SCAN will disable the radio from receiving DSC calls i.e.: Individual Call, All Ships Call, Distress Call and Position Requests. If you want to use any of the functions the selection must be left ON.

To Change DSC SCAN Method:

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.
2. Press the [▼] key to select "DSC SETUP" menu.
3. Press the [CALL(SET)MENU] key, then select "DSC SCAN" with the [▲]/[▼] keys.
4. Press the [CALL(SET)MENU] key.
5. Press the [▲]/[▼] keys to select "on" or "oF (off)."
6. Press the [CALL(SET)MENU] key to store the selected setting.
7. Press the [16/9] key to exit the menu mode and return to radio operation.

11.3   MARITIME MOBILE SERVICE IDENTITY (MMSI)

11.3.1   What is an MMSI?

An MMSI is a nine digits 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 THE GX1000S DSC FUCTIONS.

How can I obtain an MMSI assignment?

Boat US offers online registration of a MMSI. Visit www.boatus.com/mmsi

11.3.2 Programming the MMSI

WARNING

User MMSI can be input only ONCE, please be careful not to input the incorrect MMSI number. If you try to enter the MMSI more than one time, the radio will show the display to the right. If the MMSI number has been entered incorrectly, the transceiver will have to be sent to Factory Service to be reset. Refer to the section "15.2. FACTORY SERVICE" for the address.

When finished programming the MMSI number, press and hold the [CALL(SET)MENU] key until the confirmation message appears, then press the [CALL(SET)MENU] key to store the number in memory and return to radio operation mode.

If the user needs to change the MMSI number after it has been entered, the radio will have to be returned to Factory Service.

1. Press and hold down the [CALL(SET)MENU] key until the "Radio Setup" menu appears.
2. Press the [▼] key to select "DSC SETUP" menu.

3. Press the [CALL(SET)MENU] key, then select "USER MMSI" with the [▲]/[▼] keys.

4. Press the [CALL(SET)MENU] key. The display will show a series of dashes or the last MMSI number if programmed.

5. Press the [▲]/[▼] keys to select the first number of your MMSI, then press the [CALL(SET)MENU] key to step to the next number.

6. Repeat step 5 to set your MMSI (up to nine digits).

7. When finished programming the number, press and hold the [CALL(SET)MENU] key to show the display at the right.

8. Press the [CALL(SET)MENU] key to save the MMSI number into memory.

9. Press the [16/9] key to exit the menu mode and return to radio operation.

11.4 DSC DISTRESS CALL

The GX1000S is capable of transmitting and receiving DSC Distress messages to all DSC radios. The GX1000S may be connected to a GPS to also transmit the Latitude, Longitude of the vessel.

11.3.1 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 GX1000S, refer to section "8.4 CONNECTION OF GPS WITH NMEA OUTPUT."

1. Lift the red spring loaded DISTRESS cover and press the [DISTRESS] key. The "DISTRESS" menu will appear on the LCD.

2. Press and hold the [DISTRESS] key. The radios display will count down (5-4-3-2-1) and then transmit the Distress call.

3. When the distress signal is sent, CH70 and "TX" icon will appear on the LCD. After the message has been sent, the radio will sound a Distress Alarm and display will flash.

4. The transceiver will watch for a DSC acknowledgment transmission on CH70 and also receive calls on CH16.

5. If an acknowledgement is received, select channel 16 and advise your distress situation.

6. If no acknowledgment is received, the distress call is repeated in 4 minute intervals until a DSC acknowledgment is received.

7. When a DSC Distress acknowledgment is received, a distress alarm sounds and channel 16 is automatically selected. The LCD 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.

8. To cancel the DSC distress alarm signal from the speaker, press any key.

Transmitting a DSC Distress Call with Nature of Distress

The GX1000S is capable of transmitting a DSC Distress Call 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" menu will appear on the LCD.
2. Press the [▲]/[▼] keys to select the desired nature of distress category.
3. Press and hold the [DISTRESS] key. The radios display will count down (5-4-3-2-1) and then transmit the Distress call.
4. When the distress signal is sent, CH70 and "TX" icon will appear on the LCD. After the message has been sent, the radio will sound a Distress Alarm and display will flash.
5. The transceiver will watch for a DSC acknowledgment transmission on CH70 and also receive calls on CH16.
6. If an acknowledgement is received, select channel 16 and advise your distress situation.
7. If no acknowledgment is received, the distress call is repeated in 4 minute intervals until a DSC acknowledgment is received.
8. When a DSC Distress acknowledgment is received, a distress alarm sounds and channel 16 is automatically selected. The LCD 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.
9. To cancel the DSC distress alarm signal from the speaker, press any key.

Cancel a DSC Distress Call

If a DSC Distress call was sent by error the GX1000S allows you to send a message to other vessels to cancel the Distress Call that was made in error.

1. Press the [CALL(SET)MENU] key. The "DSC Operation" menu will appear.
2. Press the [▲]/[▼] keys to select "CANCEL."
3. Press the [CALL(SET)MENU] key to transmit the Distress Cancel Call.

11.4.2   Receiving a DSC Distress Call

1. When a DSC Distress call is received, an emergency alarm sounds.
   Then channel 16 is automatically selected.
2. Press any key to stop the alarm.

3. Press the [▲]/[▼] keys to change the display to show the position of the vessel in distress.

4. If the position of the vessel distress data does not include position, the LCD will show the display on the right.

NOTE

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

11.5   ALL SHIPS CALL

The All Ships Call function allows contact to be established with other vessel stations without having their ID 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."

11.5.1   Transmitting an All Ships Call

1. Press the [CALL(SET)MENU] key. The "DSC Operation" menu will appear.

2. Press the [▲]/[▼] keys to select "ALL SHIPS."

3. Press the [CALL(SET)MENU] key. (To cancel, press the [▲]/[▼] keys to select "EXIT.")

4. Press the [▲]/[▼] keys to select the call ("URGENT," "SAFETY," or "ROUTINE").

5. Press the [CALL(SET)MENU] key to transmit the selected type of all ships DSC call.

6. After the ALL SHIPS CALL is transmitted, the transceiver will switch to CH16.

7. 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. Say your call sign and announce the channel you wish to switch to for communications.

11.5.2 Receiving an All Ships Call

1. When an all ships call is received, an emergency alarm sounds.
   The radio will automatically change to channel 16.

2. Press any key to stop the alarm.

3. Press the [CALL(SET)MENU] key to see the MMSI of the vessel transmitting the All Ships Call.

4. Monitor channel 16 or traffic channel until the URGENCY voice communication is completed.

11.6 INDIVIDUAL CALL

This feature allows the GX1000S 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).

11.6.1 Setting up the Individual / Position Call Directory

The GX1000S 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, Position Requests and Position Send 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(SET)MENU] key until "RADIO SETUP" menu appears.
2. Press the [▼] key to select "DSC SETUP" menu.
3. Press the [CALL(SET)MENU] key, then select "INDIV DIR" with the [▲]/[▼] keys.
4. Press the [CALL(SET)MENU] key, then select "ADD" with the [▲]/[▼] keys.
5. Press the [CALL(SET)MENU] key.
6. Press the [▲]/[▼] keys to scroll through the first letter of the name of the vessel or person you want to reference in the directory.
7. Press the [CALL(SET)MENU] 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 [CALL(SET)MENU] key to move to the next space. This method can also be used to enter a blank space in the name. To clear the previous letter, press the [SCAN(MEM)] key.
9. After the eleventh letter or space has been entered, press and hold the [CALL(SET)MENU] key to advance to the MMSI Maritime Mobile Service Identity Number entry.
10. Press the [▲]/[▼] keys to scroll through numbers, 0-9. To enter the desired number and move one space to the right press the [CALL(SET)MENU] key. Repeat this procedure until all nine space of the MMSI number are entered.
11. If a mistake was made entering in the name or the MMSI number repeat pressing the [SCAN(MEM)] key until the wrong character is selected, then move the channel knob to correct the entry.
12. To store the data entered, press and hold the [CALL(SET)MENU] key.
13. To enter another individual address, repeat steps 4 through 12.

14. Press the [16/9] key to exit the menu mode and return to radio operation.

11.6.2   Setting up Individual Reply

Allows setting 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(SET)MENU] key until "RADIO SETUP" menu appears.
2. Press the [▼] key to select "DSC SETUP" menu.
3. Press the [CALL(SET)MENU] key, then select "INDIVIDUAL REPLY" with the [▲]/[▼] keys.
4. Press the [ENT]key.
5. Press the [▲]/[▼] keys to select "Au (automatically)" or "oF (oFF)."
6. Press the [CALL(SET)MENU] key to store the selected setting.
7. Press the [16/9] key to exit the menu mode and return to radio operation.

11.6.3   Setting up the Individual / Group Call Ringer

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

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appear.
2. Press the [▼] key to select "DSC SETUP" menu.
3. Press the [CALL(SET)MENU] key, then select "INDIVIDUAL RINGER" with the [▲]/[▼] keys.
4. Press the [CALL(SET)MENU] key.
5. Press the [▲]/[▼] keys to select ringing time of a Individual Call.
   - 4:   2 minutes
   - 3:   15 times
   - 2:   10 times
   - 1:   5 times
6. Press the [CALL(SET)MENU] key to store the selected setting.
7. Press the [16/9] key to exit the menu mode and return to radio operation.

11.6.4   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.

1. Press the [CALL(SET)MENU] key. The "DSC Operation" menu will appear.
2. Press the [▲]/[▼] keys to select "INDIVIDUAL." (To cancel, select "EXIT" with the [▲]/[▼] keys.)
3. Press the [CALL(SET)MENU] key. The transceiver will beep, and the "Individual directory" will

appear.

4. Press the [▲]/[▼] keys to select the "Individual" you want to contact.

5. Press the [CALL(SET)MENU] key, then press the [▲]/[▼] keys to select the operating channel you want to communicate on and press the [CALL(SET)MENU] key.

6. Press the [CALL(SET)MENU] key again to transmit the individual DSC signal.

7. After INDIVIDUAL CALL is transmitted, the transceiver will wait 8 seconds for the acknowledgment. If the reply signal is not received, the transceiver will transmit again.

8. After the second INDIVIDUAL CALL is transmitted, if the reply signal is not received, the display will be as shown in the illustration on the right. To send the call again, press the [ENT] key.

9. 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.

10. Press any key to listen to the channel to make sure it is not busy, then key the microphone and call the other vessel you desire to communicate with.

11.6.5   Receiving an Individual Call

When receiving an individual call, an acknowledgment must be sent back to the calling station. The GX1000S default setting is Automatic, but has a selection that allows you to manually send a reply before the radio will switch to the requested calling channel. This selection is useful if you want to see who is calling and requesting you to switch to a channel for communications, similar to caller id on a cellular phone.

1. When an individual call is received, an individual call ringing alarm sounds.
   The radio automatically switches to the requested channel.

2. Press any key to stop the alarm.

3. Press the PTT on the mic and talk to the calling ship.

11.6.6   Setting Up the Call Waiting Function

Allows the GX1000S to be setup to reply (ABLE) or set the radio so it transmits a call that advises the calling vessel the person is UNABLE to reply to the call at this time. This function is similar to an answering machine. When set up in UNABLE and a individual call is received the Individual call from the other vessel is logged in the CALL WAITING directory for you to review and call back at a later time.

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2. Press the [▼] key to select "DSC SETUP" menu.

3. Press the [CALL(SET)MENU] key, then select "INDIVIDUAL ACK" with the [▲]/[▼] keys.

4. Press the [CALL(SET)MENU] key.

5. Press the [▲]/[▼] keys to select "Ab (Able)" or "Un (Unable)."

6. Press the [CALL(SET)MENU] key to store the selected setting.

7. Press the [16/9] key to exit the menu mode and return to radio operation.

11.7   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 GX1000S. Standard Horizon has taken this feature one step further, if any Standard Horizon GPS is connected to the GX1000S, 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 transceiver and must not have its transceiver set to deny position requests.   (Refer the section "11.5.1 Setting up the Individual / Position Call Directory" to enter information into the individual directory).

11.7.1 Setting up Position Reply

The GX1000S can be set up to automatically or manually send your position to 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(SET)MENU] key until "RADIO SETUP" menu appears.

2. Press the [▼] key to select "DSC SETUP" menu.

3. Press the [CALL(SET)MENU] key, then select "POS REQUEST REPLY" with the [▲]/[▼] keys.

4. Press the [CALL(SET)MENU] key.

5. Press the [▲]/[▼] keys to select "AU (Auto)" or "oF (off: Manual)."
   In "AU (Auto)" mode, after a DSC POS Request is received, the radio will automatically transmit your vessels position. In "oF (off: Manual)" mode, the display of the GX1000S will show who is requesting the position.

6. Press the [CALL(SET)MENU] key to store the selected setting.

7. Press the [16/9] key to exit the menu mode and return to radio operation.

11.7.2 Transmitting a Position Request to Another Vessel

1. Press the [CALL(SET)MENU] key. The "DSC Operation" menu will appear in the display.

2. Press the [▲]/[▼] keys to select "POS REQUEST."

3. Press [CALL(SET)MENU] key to show the Position request directory. This directory uses the INDIVIDUAL Directory information.

4. Press the [▲]/[▼] keys to select a name, then press the [CALL(SET)MENU] key.
5. Press the [CALL(SET)MENU] key to transmit the position request DSC call.
6. When the GX1000S receives the position from the polled vessel it is shown on the radio display and also transferred to the GPS Chart plotter.
7. If the GX1000S does not receive a reply, the display will be as shown in the illustration on the right. To send again, press the [CALL(SET)MENU] key.

NOTE

If the GX1000S does not receive position data from the polled vessel, the LCD will show "NO POSITION DATA."

11.7.3 Receiving a Position Request

When a position request call is received from another vessel, a ringing alarm will sound and POS REQUEST will be shown in the LCD. Operation and transceiver function differs depending on "POS REPLY" in the "DSC SETUP" menu setting.

Automatically reply:

1. When a position request call is received, a calling alarm sounds 4 times. Then requested position coordinates are transmitted automatically to the vessel requesting your vessels position.
2. To exit from position request display, press any key.

Manually reply:

1. When a position request call is received from another vessel, the LCD will be as shown in the illustration at the right.
2. A ringing alarm sounds 4 times. Then select type of reply function "SEND" or "NO REPLY" by using the [▲]/[▼] keys.
3. The GX1000S display will show "SEND" or "NO REPLY" allowing you to send your vessels location by using the [▲]/[▼] keys.
4. When "SEND" is selected, press the [CALL(SET)MENU] key. And your position will be transmitted to the requesting vessel.
5. Press the [16/9] key to exit from position request display.

11.8 POSITION SEND

The feature is similar to Position Request, however instead of requesting a position of another vessel this function allows you to send your position to another vessel. Your vessel must have an operating GPS receiver connected for the GX1000S to send the position.

11.8.1 Transmitting a DSC Position Send Call

1. Press the [CALL(SET)MENU] key. The "DSC Operation" menu will appear in the display.

2. Turn the [▲]/[▼] keys to select the "POS Send."

3. Press the [CALL(SET)MENU] key to select the Individual directory.

4. Press the [▲]/[▼] keys to select a name in the directory, then press the [CALL(SET)MENU] key.

5. Press the [CALL(SET)MENU] key to send your position to the selected vessel.

11.8.3 Receiving a DSC Position Send Call

When another vessel transmits their location to the GX1000S the following will happen:

1. A ringing sound will be produced when the call is received.

2. Press the [16/9] key to stop ringing

3. The position from the calling vessel will be shown on the display of the radio and also transferred to any Standard Horizon GPS Chart plotter if connected.

12   RADIO SETUP

12.1   LAMP ADJUSTING

Allows setting up the backlight intensity or to turn it off.

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2. Press the [CALL(SET)MENU] key, then select "DIMMER" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3. Press the [CALL(SET)MENU] key.

4. Press the [▲]/[▼] keys to select the desired level. The dimmer level can be set from "0" to "7." When "0" is selected, the lamp is extinguished.

5. Press the [CALL(SET)MENU] key to store the selected level.

6. Press the [16/9] key to exit the menu mode and return to radio operation.

12.2   LCD CONTRAST

This selection sets up the display for best viewabilty for the varying mounting locations (overhead or below).

1. Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2. Press the [CALL(SET)MENU] key, then select "CONTRUST" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3. Press the [CALL(SET)MENU] key.

4. Press the [▲]/[▼] keys to select the desired level. The contrast level can be set from "0" to "7."

5. Press the [CALL(SET)MENU] key to store the selected level.

6. Press the [16/9] key to exit the menu mode and return to radio operation.

12.3   SCAN TYPE

This selection selects the scan mode between "Memory Scan" and "Priority Scan."

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "SCAN" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select "MSCAN (Memory Scan)" or "PSCAN (Priority Scan)."

5.   Press the [CALL(SET)MENU] key to   store the selected setting.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

12.4   TIME OFFSET

This selection sets the time offset between local time and UTC (time GPS sends to radio). Time is displayed when GPS position (LAT/LON) is displayed by press and holding the [H/L] key.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "OFFSET TIME" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select time offset from UTC. See illustration below to find your offset time from UTC. If "0:00" is assigned, the time is the same as UTC (Universal Time Coordinated or GMT Greenwich Mean Time).

5.   Press the [CALL(SET)MENU] key to store the time offset.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

12.5   TIME LOCATION

This selection selects the time display between local time and UTC (time GPS sends to radio). Time is displayed when GPS position (LAT/LON) is displayed by press and holding the [H/L] key.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "TIME DISP" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select "UTC" or "LOCAL."

5.   Press the [CALL(SET)MENU] key to store   the selected setting.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

In the local time mode, the display shows the time by the 12-hour system. Meanwhile, the display shows the time by the 24-hour system in the UTC mode.

12.6   PRIORITY CHANNEL SET

Allows selection of the priority channel.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "PRI-CH" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select the channel to be a priority.

5.   Press the [CALL(SET)MENU] key to store the selected setting.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

12.7   KEY BEEP (ON/OFF)

This selection allows the beep tone when a key is pressed to be turned off.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "KEY BEEP" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select "ON" or "OFF."

5.   Press the [CALL(SET)MENU] key to set the key beep condition.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

NOTE

Emergency alarm and beeps for DSC operation cannot be turned OFF.

12.8   WX ALERT

This selection allows the radios NOAA Weather alert to be turned off. Default setting is ON.

1.   Press and hold down the [CALL(SET)MENU] key until "RADIO SETUP" menu appears.

2.   Press the [CALL(SET)MENU] key, then select "WX ALERT" in the "RADIO SETUP" menu with the [▲]/[▼] keys.

3.   Press the [CALL(SET)MENU] key.

4.   Press the [▲]/[▼] keys to select the desired WX alert mode. The WX alert mode can be set to "ON WX," "ON SCAN," "ON SCAN/WX," or "OFF."

5.   Press the [CALL(SET)MENU] key to store the selected setting.

6.   Press the [16/9] key to exit the menu mode and return to radio operation.

13   MAINTENANCE

The inherent quality of the solid-state components used in this transceiver will provide many years of

continuous use. Taking the following precautions will prevent damage to the transceiver.

・ Keep the microphone connected or the jack covered at all times to prevent corrosion of electrical contacts;

・ Never key the microphone unless an antenna or suitable dummy load is connected to the transceiver.

・ Ensure that the supply voltage to the transceiver does not exceed 16 VDC or fall below 11 VDC.

・ Use only STANDARD HORIZON-approved accessories and replacement parts.

In the unlikely event of serious problems, please contact your Dealer or our repair facility. Address and phone numbers for this facility, as well as warranty information, are contained in section "17 WARRANTY."

13.1   REPLACEMENT PARTS

Occasionally an owner needs a replacement mounting bracket or knob.

These can be ordered from our Parts Department by writing or calling:

Marine Division of Vertex Standard

US Headquarters

10900 Walker Street, Cypress, CA 90630, U.S.A.

Telephone (714) 827-7600

Commonly requested parts, and their part numbers are listed below.

・ Panel Cover: RA0777900

・ Power Cord: T9023306

・ VOL/SQL Knob (Black): RA0757600

・ VOL/SQL Knob (White): RA0763500

・ Mounting Bracket (Black): RA0784000

・ Mounting Bracket (White): RA0784100

・ Mounting Bracket Knob (Black): RA045910A

・ Mounting Bracket Knob (White): RA043770A

・ Microphone Hanger (Black): RA0458800

・ Microphone Hanger (White): RA0436000

13.2   FACTORY SERVICE

In the unlikely event that the radio fails to perform or needs servicing, please contact the following:

Standard Horizon

Attention Marine Repair Department

10900 Walker Street, Cypress, CA 90630

Telephone (800) 366-4566

An "RA" Return Authorization number is not necessary to send a product in for service. Include a brief note describing the problem along with your name, return address, phone number, and proof of purchase.

13.3 TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	REMEDY
Transceiver fails to power up.	No DC voltage to the transceiver, or blown fuse.	a. Check the 12VDC battery connections and the fuse. b. The VOL knob needs to be clockwise rotation to turn the radio on.
Transceiver blows fuse when connected to power supply.	Reversed power wires.	Check the power cable for DC voltage, or replace the fuse (6A 250V). Make sure the red wire is connected to the positive (+) battery post, and the black wire is connected to the negative (-) battery post. If the fuse still blows, contact your Dealer.
Popping or whining noise from the speaker while engine runs.	Engine noise.	Reroute the DC power cables away from the engine. Add noise suppressor on power cable. Change to resistive spark plug wires and/or add an alternator whine filter.
Sound is not emitted from the internal or external speaker.	Accessory cable.	Check the connections of the accessory cable (Possible short circuit on the External speaker cable WHITE/SHIELD).
Receiving station report low transmit power, even with transceiver set to HI power.	Antenna.	Have the antenna checked or test the transceiver with another antenna. If the problem persists, contact your Dealer for servicing.
"HI BATTERY" or "LO BATTERY"	The power supply voltage is too high or too low.	Confirm that the connected power supply voltage is not 17 volts or lower than 10 volts. Confirm that the generator has not

message is appeared when the power is turned on.		malfunctioned.
Your position is not displayed.	Accessory cable.	Check the accessory cable connection. Some GPS use the battery ground line for NMEA connection.
	Setting of the GPS navigation receiver.	Check the output signal format of the GPS navigation receiver. This radio requires NMEA0183 format with GLL, RMB, GGA, or GNS sentence as an output signal. If the GPS has a baud rate setting make sure to select 4800 and parity to NONE.

14 CHANNEL ASSIGNMENTS

Tables on the following columns list the VHF Marine Channel assignments for U.S.A. and International use. Below are listed some data about the charts.

1. VTS. Where indicated, these channels are part of the U.S. Coast Guard's Vessel Traffic System.

2. Alpha channel numbers, that is, channel numbers followed by the letter A (such as Channel 07A) are simplex channels on the U.S.A. or Canadian channel assignments whose counterparts in the International assignments are duplex channels. International channels do not use "alpha" numbers. If you call the Coast Guard on Channel 16, they will sometimes ask you to "go to channel 22 Alpha." This is a channel assigned to U.S.A, and Canadian Coast Guards for handling distress and other calls. If your radio is set for International operation you will go to Channel 22 instead of 22A, and will not be able to communicate with the Coast Guard. To use Channel 22A, your radio must be set for USA or Canada operation, usually by a U/I/C (USA/International/Canada) control or combination of controls. Channel 22 (without an "A") is an International duplex channel for port operations. Some radios indicate an "A" adjacent to the alpha channels on the display; on others "alpha" is not indicated but the proper channel is selected based on the U/I/C setting.

3. Bridge-to-Bridge channels (for example, Channel 13) are for use by bridge operators on intercoastal waterways and rivers. It is also used by marine vessels in the vicinity of these bridges for navigation and for communicating with the bridge operators. Note that a limit of 1 Watt is specified for these channels. See page 28 for additional information.

4. The S/D column on the chart indicates either S (simplex) or D (duplex). Simplex means

transmitting and receiving on the same frequency. Only one party at a time can talk, unlike a telephone. Be sure to say "over" and release your microphone push-to-talk switch at the end of each transmission. Duplex operation involves the use of one frequency for transmitting and a separate frequency for receiving. On channels specified as duplex on the charts, correct mode of operation is established automatically by your radio when you select a channel; you cannot change the mode. And you still must release the push-to-talk switch after each transmission in order to listen to the radio.

5. Channels normally used by recreational boaters are those that include the term "non-commercial" in the Channel Use column of the chart. Some of these are shared with other users and some are used only in certain geographic regions.

6. Marine vessels equipped with VHF radios are required to monitor Channel 16.

15   SPECIFICATIONS

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

16.1   GENERAL

Channels	All USA, International and Canadian
Input Voltage	13.8 VDC ±20%
Current Drain	Standby 0.4 A
	Receive 1.5 A
	Transmit 5.5 A (Hi); 1.5 A (Lo)
Dimensions	3.1" H x 7" W x 5.7" D
	(80 H x 180 W x 145 D mm)
Flush-Mount Dimensions	2.5" H x 6.3" W x 5.1" D
	(64 H x 160 W x 130 D mm)
Weight	2.2 lbs (1 kg)

16.2   TRANSMITTER

Frequency Range	156.025 to 157.425 MHz
RF Output	25 W (Hi); 1 W (Lo)
Conducted Spurious Emissions	80 dB (Hi); 60 dB (Lo)
Audio Response	within +1/–3 of a 6 dB/octave
	pre-emphasis characteristic at 300 to 3000 Hz
Audio Distortion	5 %
Modulation	16K0G3E, for DSC 16K0G2B

Frequency Stability	±0.0005% (-20°C to +50°C)	
FM Hum and Noise	50 dB	

16.3   RECEIVER

Frequency Range	156.050 to 163.275 MHz	
Sensitivity	12 dB SINAD	0.25 µV
	12 dB SINAD (70 CH Receiver)	0.3 µV
	Squelch Sensitivity (Threshold)	0.2 µV
Modulation Acceptance Bandwidth	±7.5 kHz	
Selectivity (TYP.)	–80 dB	
	(Spurious and Image Rejection)	
	–75 dB	
	(Intermodulation and Rejection at 12 dB SINAD)	
Audio Output	4.5 W	
Audio Response	within + 2/–8 of a 6 dB/octave	
	de-emphasis characteristic at 300 to 3000 Hz	
Frequency Stability (-20°C to +50°C)	±0.0005 %	
Channel Spacing	25 kHz	
DSC Format	ITU Class D	
NMEA Input/Output	Output - DSC, DSE	
	Input - GLL, GGA, RMC and GNS	