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CE Notification
CE Notified Body number (0168) valid for the VHF 100i/VHF 200i/VHF 300i/VHF 300i AIS only.
Introduction

The VHF 300 series radios equip you with the ability to communicate on all International, USA, and Canadian marine channels, as well as preset private channels. They also allow monitoring of ten WX (weather) channels.

NOTE: The International frequency band is the only band available for the VHF 300i and the VHF 300i AIS, unless you have the other bands enabled by a Garmin® authorized dealer.

The VHF 300 series radios have many enhanced features, including those listed in the following table.

<table>
<thead>
<tr>
<th>Feature</th>
<th>VHF 300</th>
<th>VHF 300i</th>
<th>VHF 300 AIS</th>
<th>VHF 300i AIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American usage</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>International usage</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Multilingual user interface: English, French, Italian, German, and Spanish</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Receives NOAA weather alerts</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Automatic Transmitter Identification System (ATIS) support</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Automatic Identification System (AIS) receiver</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Full Class D Digital Selective Calling (DSC)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Private channel customization (pre-set by your Garmin dealer)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Auto power on</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Position tracking to track up to three other boats</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Transmits position requests</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Local receiver mode to improve receiver performance in busy port environments</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Up to 25 watts of transmit power, selectable between 1 watt and 25 watts</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dedicated key for easy, one-touch access to Channels 16/9</td>
<td>●</td>
<td>Channel 16 only</td>
<td>●</td>
<td>Channel 16 only</td>
</tr>
<tr>
<td>NMEA 0183 interface capabilities</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>NMEA 2000® interface capabilities</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Additional capabilities with NMEA 2000 compatible Garmin chartplotters and Garmin autopilot system</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Feature</td>
<td>VHF 300</td>
<td>VHF 300i</td>
<td>VHF 300 AIS</td>
<td>VHF 300i AIS</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------</td>
<td>----------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Relocatable speaker and microphone</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Supports Garmin GHS™ full-function handsets</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hailer and foghorn output at 30 watts with automatic and manual foghorn signals and adjustable, base-fog frequencies</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Two-way hailer functionality for listening back when connected to a compatible horn speaker</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Intercom capabilities</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

**Manual Conventions**

In this manual, when you are instructed to select an item using the Channel knob, turn the channel knob to highlight the item, and then press the Channel knob to select the item.

Small arrows (>) in the text indicate that you should use the Channel knob to select each item in order. For example, if the text indicates “select COMMUNICATIONS > PROTOCOL,” you should complete these steps:

1. Turn the Channel knob to highlight COMMUNICATIONS, and then press the Channel knob to select COMMUNICATIONS.
2. Turn the Channel knob to highlight PROTOCOL, and then press the Channel knob to select PROTOCOL.
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**Getting Started**

**Garmin GHS Series Handsets**
Use a Garmin GHS handset to operate all VHF 300 model radios.

**PTT (Push-to-talk)**—press to exit the current menu and return to the Home screen to begin broadcasting.

**DISTRESS**—lift the spring-loaded door and press the DISTRESS key to start a Digital Selective Calling (DSC) distress call if you have programmed your radio with an MMSI number.

**Channel**—rotate to change the channel on the radio, or press to select a menu item. When on the Home screen, press to access WX (weather) channels (North American models only).

**CLEAR**—press to return to the previous screen when you are in the menu options. This key also cancels or mutes an incoming DSC call.

**DSC**—press to display a menu of DSC options. Press again to return to the Home screen. This key only works if you have programmed an MMSI number into the radio (page 14).

**16/9** (North American models) or **16+** (International models)—press and release to toggle between Channel 16, your second-priority channel, and your original channel.

**HI/LO**—press to select between local and distant receive settings or to bypass 1 W transmission power for some channels.

**MENU**—press to display a menu of configuration options. Press again to return to the Home screen.

**Volume/Squelch**—press to toggle the function of the Channel knob to adjust the volume and squelch levels.
Garmin GHS Series Handset Display

The Home screen is the most-viewed screen in the system. It displays all of your current information, such as the current channel, the frequency band, and the channel name.

**Channel**—current working channel.

**Frequency band**—current frequency band: International, Canadian, or USA.

**Latitude, Longitude, and Time**—current latitude, longitude, and time are displayed if the transceiver is connected to a GPS device. If the transceiver is not connected to a GPS device, you can manually enter the position and the time that you entered the position data.

**Speed Over Ground (SOG)/Course Over Ground (COG)**—current SOG or COG is displayed if the transceiver is connected to a GPS device.

**Soft keys**—used to select items. The function of these keys changes depending on what you are doing.

**System-status icons**—see the following table.

<table>
<thead>
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<th>Status</th>
<th>Description</th>
</tr>
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<tr>
<td>Battery status</td>
<td>RX Squelch level is broken by reception of an incoming signal</td>
</tr>
<tr>
<td>RX Transmitting</td>
<td>TX Transmitting at 25 watts</td>
</tr>
<tr>
<td>TX Transmitting at 1 watt</td>
<td>LOC Receiver mode for areas with radio frequency interference (such as harbors)</td>
</tr>
<tr>
<td>1W Transmitting at 1 watt</td>
<td>ATIS ATIS enabled</td>
</tr>
<tr>
<td>1W Transmitting at 1 watt</td>
<td>Auto channel changing disabled</td>
</tr>
<tr>
<td>1W Transmitting at 1 watt</td>
<td>External GPS connected</td>
</tr>
<tr>
<td>1W Transmitting at 1 watt</td>
<td>Outgoing voicemail</td>
</tr>
<tr>
<td>1W Transmitting at 1 watt</td>
<td>Incoming or missed DSC call</td>
</tr>
<tr>
<td>Position tracking enabled</td>
<td>Auto channel changing disabled</td>
</tr>
<tr>
<td>Weather alert</td>
<td>Auto channel changing disabled</td>
</tr>
</tbody>
</table>
Tips
Keep the following tips in mind when using your radio or handset:

• Press and release the PTT key at any time during a series of steps to return to the Home screen.
• Press the CLEAR key to view the previous screen.
• Select OK to save your changes and return to the Home screen.
• Select ← when entering data to return to a previous character.
Basic Operation

Turning the Radio On and Off

**IMPORTANT:** To use the DSC capabilities of your radio, you must first enter an MMSI number. See page 14 for more information.

To turn on the radio, press and hold the 16/9 key (North American models) or 16+ key (International models). If you have not entered a Mobile Maritime Safety Identity (MMSI) number, you must press the CLEAR key to access the Home screen. To turn off the radio, press and hold the 16/9 key or the 16+ key.

**TIP:** For information on enabling auto power-on, see page 31.

Adjusting the Volume

**TIP:** To set the appropriate volume level, first turn the squelch level to off, and then adjust the volume. See below for more information on adjusting the squelch level.

1. Press the VOL/SQL key until the screen displays “CURRENT VOLUME.”
2. Turn the Channel knob on the handset to adjust the level.

Adjusting the Squelch

1. Press the VOL/SQL key until the screen displays “CURRENT SQUELCH.”
2. When receiving, rotate the Volume knob counterclockwise until you hear audio.
3. Rotate the Volume knob clockwise until there is no background noise.

Selecting Channels

Turn the Channel knob clockwise or counterclockwise to change channels. See page 36 for lists of International, Canadian, and USA channels.

Transmitting with the Radio

1. Select the appropriate channel.
2. Check to ensure that the channel is clear before transmitting. The Federal Communications Commission (FCC) and international regulations require that you not obstruct the communications of others.
3. Press the PTT key on the handset to transmit on the current channel. The TX icon is displayed at the top of the screen.
4. Speak your message and release the PTT key.

**NOTE:** Five minutes is the maximum amount of time for transmission. After you have pressed PTT key for five minutes, PTT is disabled until you release the PTT key.
Bypassing the LO (1 W) Transmission Power Setting
In the USA frequency band, transmissions on Channels 13 and 67 are required to be low-power (1 watt) by default. You can bypass this power setting by pressing the 25W soft key during transmission.

1. If you are on USA Channels 13 or 67, when you press the PTT key, the screen displays a message to press 25W to bypass the 1 W transmission requirement.
2. Press the 25W soft key to broadcast on HI. The radio bypasses the 1 W transmission requirement until you release the PTT key.

Scanning and Saving Channels
IMPORTANT: If you turn on ATIS, the radio cannot scan or save channels. See page 12.

Scanning All Channels
When you scan channels, the radio searches for channels that are broadcasting. If a channel is broadcasting, the radio pauses on that channel until the broadcast stops. After four seconds of inactivity on the channel, the radio resumes scanning.

1. Select SCAN > ALL.
2. Choose from the following options:
   • SKIP—this option is displayed if active channels are detected. When you select this option, the system resumes the scan and does not include that channel in subsequent passes.
   • +CH16—Channel 16 is scanned every other channel (for example: 21, 16, 22, 16, and so on). “ALL SCAN +CH16” is displayed on the screen.
   • -CH16—Channel 16 is scanned in its normal order (for example, 14, 15, 16, 17, and so on). “ALL SCAN” is displayed on the screen.
   • EXIT—returns you to Home screen. The system ends the current scan and continues to receive on the channel where you ended the scan.

Saving Channels
You can save any channel other than the WX (weather) channels to the transceiver memory. You can scan your saved channels separately from scanning all of the channels that radio receives. There is no limit to the number of channels you can save.

To save a channel:
1. Select SCAN.
2. Turn the Channel knob to access different channels.
3. To save a channel, select SAV CH. A ★ star on the top of the screen denotes a saved channel.
To remove the saved status from a channel:
1. Select **SCAN**.
2. Turn the **Channel** knob to access different channels.
3. Select **SAV CH**.

**Scanning Saved Channels**
1. Select **SCAN**.
2. Select **SAVED**.

**NOTE:** This scan does not include Channel 16 unless you saved Channel 16 to memory. However, you can select +**CH16** to scan Channel 16 every other channel (for example: 21, 16, 32, 16). When this setting is active, the soft key displays -16. Select -**CH16** to scan your saved channels in their normal order (for example, 08, 10, 11, 14).

**Repeating the Last Received Communication**
When repeat is turned on, the radio records up to the last 90 seconds of the last received transmission. When repeat is turned off, recording is disabled; the radio plays back the last saved transmission from when repeat was on. During playback, the radio does not receive transmissions on the current channel.

The radio will not save the beginning (less than one second) of each received transmission. This prevents intermittent RF noise from overriding audio transmissions that have been received and saved.

**To turn repeat on or off:**
1. Select **REPEAT**. The radio plays back up to the last 90 seconds of the last received transmission.
2. Select **ON** or **OFF**.

**To repeat the last received transmission:**
1. Select **REPEAT**. The radio plays back up to the last 90 seconds of the last received transmission.
2. Select **REPEAT** again to play the message from the beginning.

**Monitoring Multiple Channels**
**IMPORTANT:** The radio disables multiple-channel monitoring (Dual watch and Tri watch) if you turn on ATIS. See page 12.

Use the Watch feature to monitor priority channels and the currently selected channel for broadcasting activity. Channel 16 is the first-priority channel on your radio. Channel 9 is the default second-priority channel, but you can select another channel as your second-priority channel. For more information on reprogramming the second-priority channel, see page 7.
Monitoring Two Channels (Dual Watch)
Dual watch allows you to cycle between monitoring the current channel you have selected and Channel 16.

1. Select MENU > CHANNEL > WATCH.
2. Select DUAL. “DUAL WATCH”, the currently selected channel, and Channel 16 are displayed on the screen—for example, “DUAL WATCH CH: 75 + 16”.
3. To exit Dual watch, select EXIT.

Monitoring Three Channels (Tri Watch)
Tri watch allows you to cycle between monitoring the current channel you have selected, Channel 16, and your second-priority channel.

1. Select MENU > CHANNEL > WATCH.
2. Select TRI. “TRI WATCH”, the currently selected channel, Channel 16, and your second-priority channel are displayed on the screen—for example, “TRI WATCH CH: 75 + 16 + 9”.
3. To exit Tri watch, select EXIT.

Reprogramming the Second-Priority Channel
You can program your radio to recognize a channel other than Channel 9 as your second-priority channel.

1. Select MENU.
2. Select CHANNEL > 2ND PRIORITY.
3. Turn the Channel knob to change the channel displayed on the screen.
4. When the correct channel is displayed, select OK.

Using 16/9 Mode
16/9 is a priority operation that is activated by pressing the 16/9 key (North American models) or the 16+ key (International models) on the handset. Pressing the 16/9 key or the 16+ key stops the current operation and changes your current working channel to Channel 16 on the first press, your second-priority channel on the second press, and your original channel on the third press. Entering this mode changes the transmit power to HI (25 W), and leaving this mode restores the previous setting.

1. Press the 16/9 key or the 16+ key to immediately switch to Channel 16 and change the transmit power to HI (25 W). To transmit on LO power in 16/9 mode, press the HI/LO key, and then select 1W. The radio displays 1W on the screen to indicate low-power transmission.
2. Press the 16/9 key or the 16+ key again to switch to your second-priority channel.
3. Press the 16/9 key or the 16+ key a third time to return to your previous current working channel and the previous transmit power setting.
Switching Between 1 W and 25 W Transmitting Modes

You can control the transmitting power of the radio. There are two options: LO (1 W) and HI (25 W). LO is typically used for local transmissions, while HI is typically used for distance and distress transmissions.

**NOTE:** When you press the **16/9** key (North American models) or the **16+** key (International models), the radio switches to HI power. While in 16/9 mode, Channel 16 and the second-priority channel (Channel 9 by default) automatically transmit on HI power. However, you can switch to LO power in 16/9 mode.

When two signals are broadcast on the same frequency, a VHF radio only receives the stronger of the two signals. Other than distress calls, transmit using the lowest power setting that allows you to communicate. This reduces the possibility of your transmissions interfering with the transmissions of disinterested parties.

In the USA frequency band, transmissions on Channels 13 and 67 are required to be low-power (1 watt) by default. You can bypass this power setting by pressing the **25W** soft key during transmission.

**To switch between LO and HI transmitting power:**
1. Press the **HI/LO** key.
2. Select **1W** or **25W** to toggle between LO and HI transmit power modes.

**TIP:** The radio returns to the Home screen automatically two seconds after changing the 1 W/25 W mode. You can also select **OK** to return to the Home screen.

Adjusting the Local/Distant Receiving Sensitivity

You can control the receiving sensitivity of the radio. If you are experiencing noise in high-traffic areas or areas with electromagnetic interference (caused by cell-phone towers, for example), set the receiving sensitivity to Local to decrease the sensitivity of the receiver. In remote areas and in open water, set the receiving sensitivity to Distant to ensure that you are using the maximum range of the receiver.

The **LOC** icon is displayed on the screen when set to Local receiving sensitivity.

1. Press the **HI/LO** key.
2. Select **LOCAL/DIST** to toggle between local and distant modes.
Using the Intercom
The intercom is part of the Public Address (PA) system of your radio. You can use multiple handset stations as an intercom system for two-way communication. Use the radio handset to initiate communication with a remote handset station, and use a remote handset station to initiate communication with the radio handset.

TIP: When the radio is in intercom mode, it does not receive traffic from your current channel.

Initiating an Intercom Call
1. Select PA > INTRCM.
2. Select a device from the list. Selecting ALL will transmit to every station. The other party must press the PTT key on the receiving unit to accept the call.
3. Press and hold the PTT key and speak your message.
4. Release the PTT key and listen for a response.
5. When you and the other party have finished talking, select EXIT to return to the Home screen.

Receiving an Intercom Call
1. The screen indicates which station is calling. Press and release the PTT key to accept the call.
2. When the other party has finished talking, press and hold the PTT key and speak your message.
3. When you and the other party have finished talking, select EXIT to return to the Home screen.

Using the Hailer
You must provide and install an optional hailer horn on the deck or tower to use the hailer feature. See the VHF 300 Series Installation Instructions for installation information.

The hailer, which is part of the PA system of your radio, allows you to make on-boat or ship-to-shore announcements. The hailer allows two-way communication; you can address the ship using the handset, and sounds received through the horn can be heard through the external speaker. For vessels with enclosed cabins, this allows you to hear what is happening on deck.

NOTE: When the radio is in hailer mode, it does not receive traffic from your current channel.
Basic Operation

To operate the hailer:
1. Select **PA > HAILER**. Sounds received through the horn can be heard through the radio speaker.
2. Press and hold the **PTT** key and speak your announcement.
3. Turn the **Channel** knob to adjust the horn volume.
4. Release the **PTT** key to listen.
5. Select **EXIT** to return to the Home screen.

Using the Foghorn
You must provide and install an optional hailer horn on the deck or tower to use the foghorn feature. See the *VHF 300 Series Installation Instructions* for installation information.

The foghorn is part of the PA system of your radio. You can sound the foghorn through a hailer horn or an external speaker. Your radio can sound the horn automatically using standard, pre-defined patterns, or you can sound the horn manually.

Similar to the hailer, when you are manually operating the foghorn, sounds received through the horn can be heard through the external speaker between soundings.

Automatically Sounding the Foghorn
1. Select **PA > FOG**.
2. Select **AUTO** from the list.
3. Select an item from the following options. The radio alternates between sounding the pattern of tones or rings and receiving radio traffic.

   - UNDERWAY
   - SAILING/FISHING
   - UNDER TOW
   - AT ANCHOR
   - STOPPED
   - RESTRICT/TOW
   - PILOT
   - AGROUND

4. Turn the **Channel** knob to adjust the volume of the horn.
5. Select **EXIT** to turn off the automatic soundings and return to the Home screen.

Manually Sounding the Foghorn
**NOTE:** When you manually sound the horn, the radio will not alternate to receive radio traffic between horn soundings.

To sound the fog horn:
1. Select **PA > FOG**.
2. Select **MANUAL** from the list. Sounds received through the horn can be heard through the radio speaker.
3. Press the PTT key on the handset to sound the horn. The horn will stop when you release the PTT key.

4. Turn the Channel knob to adjust the volume of the horn.

5. Select EXIT to return to the Home screen.

**Adjusting the Sound Frequency of the Foghorn**
You can increase or decrease the sound frequency of the foghorn. The pitch of the tone will rise with an increase in the frequency, and will fall with a decrease in frequency. The minimum setting is 200 Hz and the maximum setting is 850 Hz. The default setting is 350 Hz. Regulations dictate the correct frequency of foghorns. Typically, these regulations correlate the required foghorn frequency with the size of the vessel.

1. Select the MENU key.
2. Select SYSTEM > FOG FREQUENCY.
3. Use the Channel knob to adjust the frequency in 50 Hz increments.
4. Select ACCEPT to save your changes and return to the Home screen. Select CANCEL to disregard the changes and return to the previous screen.

**Listening to NOAA Weather Broadcasts and Enabling Weather Alerts**

**NOTE:** This functionality is not available with the VHF 300i or VHF 300i AIS. NOAA broadcasts on the WX channels are only available in the USA and certain regions in Canada.

There are 10 WX (weather) channels that are pre-programmed into your radio to monitor weather broadcasts from the National Oceanic and Atmospheric Organization (NOAA). WX channels are listen-only channels.

These broadcasts are in a continuous loop and are updated regularly. Because the NOAA weather centers broadcasting the information are regional, the weather information will be relevant to your broadcast area.

**Accessing WX (Weather) Mode**
1. While viewing the Home screen, press the Channel knob. “WX” is displayed to indicate that you are listening to WX frequencies.
2. Turn the Channel knob to change the channel.
3. Select EXIT to return to the Home screen. The radio returns to the channel you were listening to before you entered WX mode.
**Enabling WX (Weather) Alerts**

You can enable your radio to continually monitor NOAA weather alerts. If the radio detects an incoming weather alert, it will automatically tune to the WX channel that is broadcasting the alert. The radio will not receive WX alerts if the transmitter is active.

**NOTE:** When you enable weather alerts, the radio only monitors the last monitored weather channel.

1. Press the **Channel** knob to access WX mode.
2. Select **ALERT**.
3. Select **EXIT** or press the **Channel** knob to return to the Home screen.

The 🎨 icon indicates that WX alerts are enabled.

**Disabling WX (Weather) Alerts**

1. Press the **Channel** knob to access WX mode.
2. Select **ALERT**.
3. Select **EXIT** to return to the Home screen.

**Automatic Transmitter Identification System**

The Automatic Transmitter Identification System (ATIS) is a vessel identification system that can be used on certain inland waterways in certain countries throughout Europe. Your Garmin dealer can program your VHF 300i or VHF 300i AIS to use ATIS if you plan to use your radio on waterways that are within the bounds of the Regional Arrangement Concerning the Radiotelephone Service on Inland Waterways (the Basel Agreement). The use of ATIS is prohibited outside the European inland waterways covered by the Basel Agreement.

When you enable ATIS, a data signal identifying your station is sent at the end of every transmission. Data identifying your position is not sent; however, your position is calculated through the method of triangulation by coastal stations receiving your transmissions.

To enable ATIS, enter your ATIS identification number (see below), and then turn on ATIS (see page 13). Contact your Garmin dealer to determine your ATIS identification number and to learn about ATIS requirements for your region.

Your radio disables the following functions when you enable ATIS:

- Digital Selective Calling (DSC)
- Dual watch and Tri watch
- Channel scanning

The following International channels are restricted to transmit on low-power (1 watt) when you enable ATIS: 6, 8, 10, 11, 12, 13, 14, 71, 72, 74, and 77.
Entering Your ATIS Identification Number

IMPORTANT: Use caution when entering your ATIS identification number because you can only enter it once. If you need to change your ATIS identification number after entering it, you must take the radio to your Garmin dealer for reprogramming.

1. Press the MENU key.
2. Select ATIS > MY ATIS ID.
3. For each number in the sequence, turn the Channel knob clockwise to increase the number, and counterclockwise to decrease the number.
4. Press the Channel knob to accept the number and move to the next number in the sequence.
5. Select ACCEPT when you have entered your ATIS number. The radio prompts you to reenter your number.
6. Enter your ATIS ID number again, and press ACCEPT. If the ATIS ID numbers you entered do not match, the screen displays “ATIS ID NUMBERS DO NOT MATCH”. Select RETRY and enter the numbers again.

Viewing Your ATIS ID Number

1. Press the MENU key.
2. Select ATIS > MY ATIS ID.
3. Select OK to return to the previous screen, or press the MENU key to return to the Home screen.

Turning ATIS Functionality On and Off

1. Press the MENU key.
2. Select ATIS > ATIS.
3. Select ON or OFF. When ATIS is enabled, the ATIS icon is displayed on the screen.
4. Select OK to save your changes and return to the Home screen. Press the MENU key to return to the Home screen without saving your changes.
Digital Selective Calling

Digital Selective Calling (DSC) is a key component of the Global Maritime Distress and Safety System (GMDSS). DSC provides VHF radios with the ability to place and receive digital calls directly with other vessels and shore stations, including the USA and Canadian Coast Guards. Your radio includes full Class D DSC capabilities.

If you have a GPS device connected to the transceiver, your latitude and longitude and the current time are transmitted when you send a distress call or other type of DSC call. If you have manually entered your position information, your latitude, longitude, and time of entry are transmitted with the call. Having your location automatically transmitted prevents you from needing to identify your location in an emergency situation.

Channel 70 is reserved exclusively for DSC calls, and your radio uses a dedicated receiver to maintain a constant watch on Channel 70. You do not need to change the channel to make a DSC call, since your radio automatically changes to Channel 70 to transmit a DSC call. Your radio sends the DSC data over Channel 70 in less than one second, and then tunes to the appropriate channel for voice communications. The icon is displayed when you have an incoming or missed DSC call.

IMPORTANT: To use the DSC capabilities of your radio, you must first enter a Mobile Maritime Safety Identity (MMSI) number. An MMSI number identifies each DSC radio, like a telephone number.

IMPORTANT: The radio disables DSC if you turn on ATIS. See page 12.

Entering Your MMSI Number

The Mobile Maritime Safety Identity (MMSI) number is a nine-digit code that acts as a DSC self-identification number, and is required in order to use the DSC capabilities of your radio. You can obtain an MMSI number from the telecommunications authority or ship registry for your country. In the USA, you can obtain an MMSI number from the following sources:

- Federal Communications Commission (FCC)—assignments are recognized internationally
- BoatU.S., Sea Tow, or United States Power Squadrons®—assignments are for USA waters only

After obtaining your MMSI number, you must program the number into your radio to enable DSC.
**IMPORTANT:** Use caution when entering your MMSI number, because you can only enter it once. If you need to change your MMSI number after entering it, you must take the radio to your Garmin dealer for reprogramming.

**To enter your MMSI number:**
1. Press the **MENU** key.
2. Select **DSC > MY MMSI**.
3. For each number in the sequence, turn the **Channel** knob clockwise to increase the number, and counterclockwise to decrease the number. Press the **Channel** knob to move to the next number in the sequence. Select ← to return to a previous character.
4. Select **ACCEPT** when you have entered your MMSI number. The radio prompts you to confirm your entry.
5. Enter your MMSI number again, and select **ACCEPT**. If the MMSI numbers you entered do not match, the screen displays "MMSI NUMBERS DO NOT MATCH". Select **RETRY** and repeat the process. If you do not want to enter your MMSI number at this time, select **CANCEL**.

**Viewing Your MMSI Number**
1. Press the **MENU** key.
2. Select **DSC > MY MMSI**.
3. Select **OK** to return to the previous screen, or press the **MENU** key to return to the Home screen.

**DSC Distress Calls**
When you make a DSC distress call, your call is transmitted to all DSC-capable radios within receiving range. Your current GPS position (latitude and longitude) and the current time are included in the transmission if you have a GPS device connected to your transceiver. If you have manually entered your position information with the time, that data is transmitted with the call. For information on manually updating your position information, see page 26.

**NOTE:** Familiarize yourself with the standard distress-call format and protocol to ensure that your calls are clear and effective.

**Sending an Undesignated Distress Call**
When you send an undesignated distress call, the nature of your emergency is not transmitted to the receiving stations. Sending an undesignated distress call is a shorter and quicker procedure that can save you time during an emergency.

1. Lift the spring-loaded door, and press and hold the **DISTRESS** key for at least three seconds. The transceiver beeps, and the screen displays "DISTRESS CALL COUNTING DOWN". The channel pane counts down the seconds from 3 to 1.
2. The radio automatically sounds an alarm, switches to Channel 70, and transmits your call on HI (25 W) power. You can press any key to turn off the alarm sound.

3. After transmitting your distress call, the radio automatically tunes to Channel 16 on HI (25 W) power. Press the PTT key on the handset and speak your message. The radio waits for an acknowledgement (ACK) on Channel 70 from a listening station.

Sending a Designated Distress Call

When you send a designated distress call, the nature of your emergency is transmitted to the receiving stations.

1. Lift the spring-loaded door and press the DISTRESS key.

2. Use the Channel knob to select the type of distress call:
   - UNDESIGNATED
   - FIRE
   - FLOODING
   - COLLISION
   - GROUNDING
   - CAPSIZING
   - SINKING
   - ADRIFT
   - ABANDONING
   - PIRACY
   - MAN OVERBOARD

   NOTE: To exit this screen without sending a designated distress call, press the CLEAR key to return to the Home screen, or press the 16/9 key (North American models) or the 16+ key (International models) to tune to Channel 16.

3. Press and hold the DISTRESS key for at least three seconds.

4. The transceiver beeps, and the screen displays “DISTRESS CALL COUNTING DOWN”. The channel pane counts down the seconds from 3 to 1.

5. The radio automatically sounds an alarm, switches to Channel 70, and transmits your call on HI (25 W) power. You can press any key to turn off the alarm sound.

6. After transmitting your distress call, the radio automatically tunes to Channel 16 on HI (25 W) power. Press the PTT key on the handset and speak your message. The radio waits for an acknowledgement (ACK) from a listening station.
Waiting for a Distress Call Acknowledgement
If the radio does not receive a distress call acknowledgement, the radio retransmits the distress call at a random time between 3.5 and 4.5 minutes. This process is repeated continually until the radio receives an acknowledgement.

Receiving a distress call acknowledgement:
1. When the radio receives a distress call acknowledgment, the radio beeps and the screen displays “DISTRESS ACK”. Press any key to turn off the beeping.
2. Select 🔄 to view additional information. If the MMSI of the station transmitting the ACK signal is an entry in your directory, the name associated with the MMSI number is indicated on the screen. If not, the screen displays the MMSI number.
3. Select ACCEPT.

Stopping Automatic Retransmission of Distress Calls
To stop the radio from automatically retransmitting a distress call, select CANCEL. The radio remains tuned to Channel 16. Selecting CANCEL does not communicate to other stations that you no longer have an emergency. Selecting CANCEL only stops the automatic repetition of the call. For information on revoking a distress call, see below.

Revoking a Distress Call
A DSC distress call is not transmitted until you press and hold the DISTRESS key for at least three seconds. However, if you inadvertently make a DSC distress call or are no longer in distress, it is important to cancel the call immediately by transmitting a voice message to All Stations on Channel 16.

1. Select CANCEL to cancel the distress alert, and wait until the screen displays “DISTRESS CANCEL HAS BEEN SENT.”
2. Press the 16/9 key. The radio tunes to the Channel 16.
3. Press the PTT key on the handset and speak a voice message to cancel the false distress alert. The following is an example of an appropriate cancellation message:

“All Stations, All Stations, All Stations, this is ________ (vessel name), MMSI number ________, Position ________ North (or South), ________ West (or East). Cancel my distress alert of ________ (date and time). This is ________ (vessel name), MMSI number ________, Out.”
Placing Calls

Placing Individual Calls
1. Press the DSC key.
2. Select INDIVIDUAL.
3. Select from the following options to select the place from which the MMSI number is retrieved:
   - MANUAL—a screen is displayed that allows you to enter the MMSI number manually. Select a number and move to the next character. When you have entered the correct MMSI number, select ACCEPT.
   - DIRECTORY—the directory is displayed. Select an entry.
   - RECENT CALLS—a screen is displayed that allows you to select from your recent calls. Select an entry.
4. After you have selected the vessel or entered the MMSI number manually, select the channel on which you want to communicate. The radio transmits this request with your call. See below for information on selecting a channel.
5. Select CALL.

The radio transmits the call on Channel 70 and returns to the current working channel. The radio listens for an acknowledgement on Channel 70 while staying on the working channel. After an acknowledgement is received, the radio automatically tunes to the channel you selected.

Placing Group Calls
You can contact a group of specific vessels, such as a sailing club or flotilla, by making a group call. Before placing a call to a group, ensure that the MMSI number of the group is entered into the memory. For more information on entering a group, see page 26.
1. Press the DSC key.
2. Select GROUP > CALL.
3. Select an entry.
4. After you have selected the group, select the channel on which you want to communicate. The radio will transmit this request with your call. See below for information on selecting a channel.
5. Select CALL. The radio transmits the call on Channel 70 and tunes to the channel you selected.
Selecting the Channel for Individual Calls or Group Calls
When placing an individual or group call, you can select from the following channels on which you want to communicate. The radio transmits this request with your call.

- **USA:** 6, 8, 9, 10, 13, 17, 67, 68, 69, 71, 72, 73, or 77
- **Canadian and International:** All of the channels listed previously, plus Channel 15

In most cases, the selection of a DSC channel is limited to those channels that are available in all frequency bands. When selecting the channel, select CUSTOM to select a different channel than the ones listed above. If you select a custom channel, be aware that the station you are calling may not be able to comply with the specified channel. Ensure that you select a channel that is appropriate for communication.

Placing All-Ships Calls
All-ships calls are transmitted to all stations within receiving distance of your radio. You can make two types of all-ships calls:

- Safety calls are used to broadcast significant navigational or weather-related information.
- Urgency calls are used to communicate situations about the safety of a vessel or person when danger is not imminent. Discerning whether a situation warrants a distress call or an urgency call is the responsibility of the captain.

To place an all-ships call:
1. Press the DSC key.
2. Select ALL SHIPS.
3. Select SAFETY or URGENCY to indicate the reason for your call.
4. Select CALL. The radio transmits the call on Channel 70, and then you can select a new channel (6, 8, 9, 10, 13, 17, 67, 68, 69, 71, 72, 73, or 77).

Placing Position Request Calls
Position data received from stations that respond to position request calls is sent over the NMEA network, so that you can track the vessels on your Garmin chartplotter, for example. For more information on NMEA 0183 and NMEA 2000, see page 29.

1. Press the DSC key.
2. Select POS. REQUEST.
3. Select from the following options to select the place from which the MMSI number is retrieved:
   - MANUAL—a screen is displayed that gives you the ability to enter the MMSI number manually. Select a number and move to the next character. When you have entered the correct MMSI number, select ACCEPT.
   - DIRECTORY—the directory is displayed. Select an entry.
4. Select **ACCEPT** when you have entered your MMSI number.

5. Select **CALL**. The radio transmits the call on Channel 70, and then switches to your current working channel. The screen displays "POS REQUEST WAITING FOR ACKNOWLEDGE".

---

**Receiving Calls**

**Receiving Distress Calls and Distress Relay Calls**
The radio sends data relative to the call over the NMEA network based on how you have MMSI filtering configured. See page 30 for more information.

1. When receiving a distress call or a distress relay call, the screen displays the “DISTRESS” or “DISTR RELAY” and information about the call (for example, the MMSI number and the nature of the distress). Select ➤ to view additional information.

2. If necessary, select **OK** to tune to Channel 16. See page 27 for more information on configuring the auto channel-change setting. If you select **CANCEL**, the radio does not change channels and continues to receive on the current channel.

3. Select **OK** to return to the Home screen on the new channel.

**Receiving All-Ships Urgency Calls**

1. When receiving an all-ships urgency call, "ALL SHIPS" is displayed on the screen. "URGENCY" is shown as the type of call.

2. If necessary, select **OK** to switch to Channel 16. See page 27 for more information on configuring the auto channel change setting. If you select **CANCEL**, the radio does not change channels and continues to receive on the current channel.

3. Select **OK** to return to the Home screen on the new channel.

**Receiving All-Ships Safety Calls**

1. When receiving an all-ships safety call, "ALL SHIPS" is displayed on the screen. "SAFETY" is shown as the type of call. Select **OK** to change the channel. If you select **CANCEL**, the radio does not change channels and continues to receive on the current channel.

2. Select **OK** to return to the Home screen on the new channel.

**Receiving Individual Routine Calls**

1. When receiving an individual routine call, "INDIVIDUAL" is displayed on the screen. "ROUTINE" is shown as the type of call. If the channel request is for an invalid channel, "INVALID CH REQUEST" is displayed on the screen.

2. If the channel request is for a valid channel, select **OK** to change channels. If you select **CANCEL**, the radio does not change channels and continues to receive on the current channel.
Receiving Position Request Calls
You can configure your radio reply automatically to incoming position requests, to prompt
you to review and approve the incoming requests before replying, or to ignore incoming
requests (see page 27 for more information).

If you enable automatic position replies, the screen displays “SENDING POSITION
CALLING” and sends your position when receiving a position request. After the call has
been transmitted successfully, the screen displays “POSITION SENT”.

When receiving a position request, “POS. REQUEST FROM [VESSEL NAME or MMSI
NUMBER]” is displayed on the screen. If GPS data is available, press OK to send the
position reply. If GPS data is not available, the screen displays “NO GPS DATA. UNABLE
TO COMPLY”.

Receiving Position Send Calls
When receiving a position send call (position report), “POS. SEND FROM [VESSEL
NAME or MMSI NUMBER]” is displayed on the screen with the position data. Select OK
to return to the Home screen.

Receiving Group Calls
1. When receiving a group call, “GROUP ROUTINE” is displayed on the screen. The radio
prompts you to change to the requested channel. If the channel request is for an invalid
channel, “INVALID CH REQUEST” is displayed on the screen.
2. Select OK to change the working channel.
3. Select OK to return to the Home screen on the new channel.

Position Tracking
When you enable position tracking, your radio uses interval position-request calls to track
up to three vessels. Regulations allow transmission of one position-request call every five
minutes. You can call up to three vessels that your radio will alternate calling at five-minute
intervals. If a vessel does not respond to five consecutive position-request calls, the vessel is
removed from the position-tracking list.

The following timetable shows the polling sequence when you have three vessels in the
position-tracking list. The radio continues to send position-request calls until you stop
position tracking by selecting EXIT.

<table>
<thead>
<tr>
<th>Time</th>
<th>0 minutes</th>
<th>5 minutes</th>
<th>10 minutes</th>
<th>15 minutes</th>
<th>20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel Polled</td>
<td>Ship 1</td>
<td>Ship 2</td>
<td>Ship 3</td>
<td>Ship 1</td>
<td>Ship 2</td>
</tr>
</tbody>
</table>
Position data received from stations that respond to position-request calls is sent over the NMEA network, so that you can track the vessels using your Garmin chartplotter. For more information on NMEA 0183 and NMEA 2000, see page 29.

**Selecting the Vessels and Activating the Call**
1. Press the DSC key.
2. Select **POS. TRACKING > ADD ENTRY**. You can have no more than three vessels on the position tracking list at one time. If you select **ADD ENTRY** and the radio sounds a triple error beep, you must delete an entry before adding another.
3. Select the vessels from the directory.
4. Select **BEGIN TRACKING**. The icon is displayed to indicate that position tracking is in progress.
5. Select **EXIT** to stop position tracking.

**Viewing and Deactivating Vessels on the Position Tracking List**
1. Press the DSC key.
2. Select **POS. TRACKING**.
3. To view the vessels on the list, select **VESSELS**.
4. To configure the radio to keep a vessel on the list, but to not call that vessel for position tracking information, select the vessel.
5. Select **OFF**.

**Deleting a Vessel from the Position Tracking List**
1. Press the DSC key.
2. Select **POS. TRACKING > DELETE**.
3. Select the vessel.
4. Select **YES** to delete the vessel from the list. Select **NO** to return to the previous screen without deleting.
Working with the Call Logs

For every DSC call that your radio receives, the calling station, type of call, and date and time of the call are recorded in the call logs. The latitude and longitude of the calling station are also recorded if they are transmitted with a call.

There are three categories for calls that are logged: distress, position, and other. The following table indicates where each type of call is located in the call logs.

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Call Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distress</td>
<td>Distress</td>
</tr>
<tr>
<td>Distress relay</td>
<td>Distress</td>
</tr>
<tr>
<td>Distress ACK</td>
<td>Distress</td>
</tr>
<tr>
<td>Position send</td>
<td>Position</td>
</tr>
<tr>
<td>Position request</td>
<td>Position</td>
</tr>
<tr>
<td>Group</td>
<td>Other</td>
</tr>
<tr>
<td>All Ships</td>
<td>Other</td>
</tr>
<tr>
<td>Individual</td>
<td>Other</td>
</tr>
</tbody>
</table>

If you have entered the calling station in your directory, the name of the station is displayed in the list of calls. If not, the MMSI number is displayed. A symbol indicating the station type may be displayed to the left of the station name or MMSI number. The following table indicates the meaning of these symbols and the MMSI number format for different station types.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
<th>MMSI Number Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>↘</td>
<td>Ship station</td>
<td>xxxxxxxxxx</td>
</tr>
<tr>
<td>⬅</td>
<td>Group call</td>
<td>0xxxxxxxx</td>
</tr>
<tr>
<td>⬇</td>
<td>Coastal station</td>
<td>00xxxxxxx</td>
</tr>
</tbody>
</table>

Viewing the Calls Stored in the Call Logs

1. Press the DSC key.
2. Select CALL LOG > DISTRESS LOG, POSITION LOG, or OTHER LOG.
3. Select the call. Information about the call is displayed on the screen. Select ↻ to scroll and view all of the information.
Placing a Call from a Call Log
All calls placed from the call log are individual routine calls.

1. Press the DSC key.
2. Select CALL LOG > DISTRESS LOG, POSITION LOG, or OTHER LOG.
3. Select the MMSI number or the station name.
4. Select CALL. The screen indicates individual routine as the call type.
5. Select the channel on which you want to communicate. The radio transmits this request with your call. See page 19 for information on selecting a channel.
6. Select CALL.

Saving a Vessel to the Directory from a Call Log
1. Press the DSC key.
2. Select CALL LOG > DISTRESS LOG, POSITION LOG, or OTHER LOG.
3. Select the MMSI number. Select a station name if you want to edit the name in the directory.
4. Select SAVE.
5. To edit the name, turn the Channel knob to change the character. Press the Channel knob to select the character and move to the next character in the name. Select ← to return to a previous character. You can enter up to 10 characters.
6. Select ACCEPT to save your changes. Select CANCEL to exit the edit screen without saving your changes.

Deleting a Call Log Entry
1. Press the DSC key.
2. Use the Channel knob to select CALL LOG > POSITION LOG, DISTRESS LOG, or OTHER LOG.
3. Use the Channel knob to select the MMSI number or station.
4. Select ↙.
5. Select DELETE.
6. Select YES to delete the call. Select NO to cancel this action and return to the previous screen.
**Using the Directory**

**Viewing the Directory**
1. Press the DSC key.
2. Select DIRECTORY.
3. Select a station name in your directory.
4. Press the CLEAR key to return to the previous screen. Press the MENU key to return to the Home screen.

**Adding an Individual Entry to the Directory**
1. Press the DSC key.
2. Select DIRECTORY > ADD ENTRY.
3. Enter the MMSI number.
4. Enter a name. You can enter up to 10 characters.
5. Select ACCEPT to save your changes to the directory. Select BACK to return to the previous screen without saving your changes. Press the MENU key at any time to return to the Home screen.

**Editing an Individual Entry in the Directory**
1. Press the DSC key.
2. Select DIRECTORY > EDIT ENTRY.
3. Select an entry in the directory.
4. Change the characters in the MMSI field or the Name field.
5. Select ACCEPT to save your changes to the directory. Select BACK to return to the previous screen without saving your changes. Press the MENU key to return to the Home screen.

**Deleting an Individual Entry from the Directory**
1. Press the DSC key.
2. Select DIRECTORY > DELETE.
3. Select the entry to delete.
4. Select YES to delete the entry. Select NO to quit the action and return to the directory list. Press the CLEAR key at any time to return to the previous screen without saving your changes. Press the MENU key to return to the Home screen.
Adding and Modifying Group Entries

Adding a Group
1. Press the DSC key.
2. Select GROUP > ADD ENTRY.
3. Enter the MMSI number.
4. Enter a name.
5. Select ACCEPT to save your changes. Select CANCEL to return to the previous screen without saving the changes. Press the MENU key to return to the Home screen.

Editing a Group
1. Press the DSC key.
2. Select GROUP > EDIT ENTRY.
3. Change the characters in the MMSI field or the Name field.
4. Select ACCEPT to save your changes. Select CANCEL to return to the previous screen without saving the changes. Press the MENU key to return to the Home screen.

Deleting a Group
1. Select the DSC key.
2. Select GROUP > DELETE.
3. Select YES to delete the entry. Select NO to quit the action and return to the previous screen.

Configuring DSC Settings

Manually Entering Position Information
If you do not have a GPS device connected to your radio, manually enter your position and time of entry so that this information will be transmitted with DSC calls. When you enter the position and time manually, “MANUAL POS” is displayed on the screen.

Your radio has two alarms to indicate that you need to update your position data:

- When the position data you entered manually is over four hours old, the radio beeps and displays “DATA IS OVER 4 HOURS OLD” on the screen.
- After 23.5 hours, manually-entered position data is considered invalid. The radio displays “DATA IS INVALID” on the screen. The radio will not transmit position data that is more than 23.5 hours old.

See page 35 for more information on GPS alarms.

When you manually enter your position with the time, the time remains fixed at the value you specify. The radio updates the time only if you connect a GPS device to the radio.
To enter position information:
1. Press the **MENU** key.
2. Select **SYSTEM > MANUAL GPS**.
3. For each number in the sequence, turn the Channel knob clockwise to increase the number, and counterclockwise to decrease the number. When entering a direction character, rotate the channel knob to switch between N or S and E or W.

**Configuring the Automatic Channel Change Setting**
This setting determines whether the radio automatically tunes to Channel 16 when receiving the following types of calls:

- Distress
- Distress relay
- All-ships urgency

Under certain conditions, you may want to disable automatic channel changing, such as when you need to continually monitor a channel to maintain uninterrupted communication with another vessel. When disabled, the ☹️ icon is displayed on the screen.

1. Press the **MENU** key.
2. Select **DSC > AUTO CHANGE CH**.
3. Select from the following options:
   - **ON**—when a qualifying call is received, the radio automatically turns the channel to Channel 16.
   - **OFF**—when a qualifying call is received, a message is displayed that prompts you to accept or decline the changing of channels.
4. Press the **MENU** key to return to the Home screen.

**Configuring the Automatic Position Reply Setting**
You can configure the way your radio responds to incoming position requests.

1. Press the **MENU** key.
2. Select **DSC > POSITION REPLY**.
3. Select from the following options:
   - **AUTO**—the radio automatically and immediately sends position information to all position inquiries.
   - **MANUAL**—the radio sends position information only after you review and approve the request.
   - **OFF**—the radio does not send position information or notify you when a position inquiry has been received.
4. Press the **MENU** key to return to the Home screen.
Sending Voicemail
You can record a 15-second voicemail message and send it to another vessel. When you send the voicemail, the radio will call the other vessel and transfer the voicemail if the other vessel responds with an acknowledgement message. The icon is displayed when you have an outgoing voicemail message.

If the radio is unable to successfully transmit your voicemail within one hour, the radio prompts you to retry or cancel the call. If you do not make a selection after three minutes, the call is cancelled automatically.

To record a voicemail message:
1. Select DSC > VOICEMAIL > MESSAGE.
2. Press the PTT key to record your voice message. You can record up to 15 seconds.
   NOTE: If you want to rerecord your voicemail message, press the PTT key again.

To listen to a voicemail message:
1. Select DSC > VOICEMAIL > MESSAGE.
2. Select LISTEN.

To delete a voicemail message:
1. Select DSC > VOICEMAIL > MESSAGE.
2. Select DELETE.

To transmit a voicemail message:
1. Select DSC > VOICEMAIL > SEND VOICEMAIL.
2. Select an entry from the directory.
3. Use the CHANNEL knob to select a channel.
4. Select CALL. The radio calls the other vessel and transfers the voicemail if the other vessel responds with an acknowledgement message.

Automatic Identification System
The VHF 300 AIS and VHF 300i AIS are equipped with Automatic Identification System (AIS) receivers. AIS information can be sent over a NMEA 2000 network or a high-speed NMEA 0183 network, depending on the communication protocol settings (see page 30).

To turn AIS on or off:
Select MENU > AIS > ON (or OFF).
Advanced Operation

NMEA 0183 and NMEA 2000

Connect your radio to a NMEA 0183 network or a NMEA 2000 network to perform the following functions:

- Transfer received DSC distress and position information to any compatible chartplotter.
- Receive GPS position. GPS position can be displayed on the Home screen and is transmitted with DSC calls. The icon is displayed when GPS data is available, and blinks when GPS data is not present. When GPS data is not present, the radio will signal for you to enter your position manually every four hours.
- Transfer AIS information that the radio receives from other vessels. The radio can transfer this data over a NMEA 2000 network or a NMEA 0183 high-speed network. For information on enabling AIS, see page 28.

For supported NMEA 0183 sentences and NMEA 2000 PGNs, see page 49. For more information on connecting your radio to a NMEA network, see the VHF 300 Series Installation Instructions.

Additional Functionality with Other Garmin Devices

Your VHF 300 series radio has additional capabilities when connected with other Garmin devices.

**NOTE:** Your Garmin chartplotter may require a free software upgrade to use the functionality listed in this section. Go to www.garmin.com for current updates to your Garmin chartplotter software.

- When you connect your radio to a Garmin chartplotter using NMEA 0183 or NMEA 2000, your chartplotter can keep track of the current and previous positions of the contacts in the radio directory.

**TIP:** Try using position tracking on up to three contacts to automate this process.

- When your VHF 300 series radio is connected to a NMEA 2000 network with another Garmin chartplotter, you can use the chartplotter interface to set up an individual routine call.
- As an additional safety measure, when your VHF 300 series radio is connected to a NMEA 2000 network and you initiate a man-overboard distress call from your radio, your Garmin chartplotter displays the man-overboard screen and prompts you to navigate to the man-overboard point. If you have a Garmin autopilot system connected to the network, it prompts you to start a Williamson’s turn to the man-overboard point.
Selecting NMEA 0183 or NMEA 2000
This setting determines whether you are connected to a NMEA 0183 network or a NMEA 2000 network. The radio can only communicate over one network type at a time.

**To configure a VHF 300 or a VHF 300i:**
1. Press the **MENU** key.
2. Select **COMMUNICATIONS > PROTOCOL**.
3. Select NMEA2000 or NMEA0183.

**To configure a VHF 300 AIS or a VHF 300i AIS:**
1. Press the **MENU** key.
2. Select **COMMUNICATIONS > PROTOCOL**.
3. Select NMEA2000 or NMEA0183.
4. If you selected NMEA0183, select one of the following options:
   - If AIS is disabled, select NMEA STANDARD or NMEA HIGH SPD.
   - If AIS is enabled, you can only select NMEA HIGH SPD.

MMSI (Vessel) Filtering over a NMEA Network
Your radio can send call-related data over NMEA 0183 or NMEA 2000 when it receives distress calls, acknowledgements to position request calls, and other position-send calls. You can filter the MMSI numbers (vessels) for which your radio sends this data in three ways: any MMSI number (all vessels), no MMSI numbers (no vessels), or select MMSI numbers (vessels selected from your directory).

When you configure the radio to send data for select vessels, and you receive an acknowledgement to a position request call, or other position-send call from an MMSI number not in your directory, your radio does not send NMEA data for that call. Distress call information will still be sent. For more information about NMEA output from your radio, see page 49.

**Configuring MMSI Filtering for Select Vessels**
1. Press the **MENU** key.
2. Select **COMMUNICATIONS > DSC OUTPUT > SELECT VESSELS**. You can also select **ALL VESSELS** to send data when you receive a call from any MMSI number, or select **NO VESSELS** to not send data for any MMSI number.
3. Select the vessel in your directory.
4. Select from the following options:
   - **ON**—the radio will send call-related data over your NMEA network when you receive a distress call, an acknowledgement to a position request call or other position send call from this vessel.
• **OFF**—the radio will not send data for this vessel. Distress call information will still be sent.

### Modifying the Operating Settings

#### Modifying the Backlight and Contrast Settings

1. Press the **MENU** key.
2. Select **SYSTEM > DISPLAY > BACKLIGHT** or **CONTRAST**.
3. Turn the **Channel** knob to adjust the backlight or contrast. “MAX” represents the maximum setting, and the number 1 represents the minimum setting.
4. Select **CANCEL** to disregard your changes and return to the previous screen. Select **OK** to save your changes and return to the Home screen.

#### Modifying the Beeper Setting

You can change the volume of the beeper tone that sounds when you press keys or the **Channel** knob, or you can turn the beeper tone off.

1. Press the **MENU** key.
2. Select **SYSTEM > BEEPER**.
3. Select from the following options:
   - **OFF**—the radio does not beep when you press keys, or when you press the **Channel** knob.
   - **QUIET** or **LOUD**—set the beeper volume level.

#### Turning the Auto Power-On Setting On or Off

1. Press the **MENU** key.
2. Select **SYSTEM > AUTO POWER-ON**.
3. Select **ON** or **OFF**.

#### Configuring Whether Latitude and Longitude are Displayed on the Home Screen

You can display the latitude and longitude on the home screen if you have a GPS device connected to your radio, or if you enter position data manually.

1. Press the **MENU** key.
2. Select **SYSTEM > NUMBERS > LAT/LONG**.
3. Select from the following options:
   - **AUTO**—latitude and longitude information is displayed on the Home screen.
   - **HIDE**—latitude and longitude information is not displayed on the Home screen.
Configuring Course Over Ground/Speed Over Ground (COG/SOG) Information Displayed on the Home Screen

You can display COG and SOG on the home screen if you have a GPS device connected to your radio.

1. Press the MENU key.
2. Select SYSTEM > NUMBERS > COG/SOG.
3. Select from the following options:
   - AUTO—COG/SOG information is displayed on the Home screen.
   - HIDE—COG/SOG information is not displayed on the Home screen.

Configuring Whether the Time is Displayed on the Home Screen

You can configure whether the time is displayed on the Home screen. The radio updates the time only if you connect a GPS device to the radio. When you manually enter your position with the time, the time remains fixed at the value you specify. This time of entry is always displayed on the Home screen, even if you hide the time.

1. Press the MENU key.
2. Select SYSTEM > NUMBERS > TIME.
3. Select from the following options:
   - AUTO—time information is displayed on the Home screen.
   - HIDE—time information is not displayed on the Home screen.

Configuring the Time Format

1. Press the MENU key.
2. Select SYSTEM > UNITS > TIME > FORMAT.
3. Select 12 Hour, 24 Hour, or UTC.

Configuring the Time Offset

If you prefer to have your unit display the time in local time rather than Universal Coordinated Time (UTC), you need to indicate the local time offset from UTC time. When you make an adjustment for local time, “LOC” is displayed after the time instead of “UTC” on the Home screen.

NOTE: The time sent when you make a DSC call is always sent in UTC format.

To configure the UTC offset:
1. Press the MENU key.
2. Select SYSTEM > UNITS > TIME > OFFSET.
3. Turn the Channel knob to enter an offset number in increments of 0.5 hours. You can set the offset to a maximum of +/- 13 hours.
4. Select from the following options:
   - **OK**—save your changes and return to the previous screen.
   - **CANCEL**—remove your changes.

**Modifying the Speed Unit of Measurement**
You can adjust the unit of measure that is displayed for the speed calculation throughout the radio. The Speed Over Ground (SOG) on the Home screen will be displayed in the measurement you select here.

1. Press the **MENU** key.
2. Select **SYSTEM > UNITS > SPEED**.
3. Select from the following options:
   - **KNOTS**—change the unit of measure to knots.
   - **MPH**—change the unit of measure to miles per hour.
   - **KPH**—change the unit of measure to kilometers per hour.

**Modifying the Heading Display**
You can modify the heading to display either true or magnetic calculations. This heading measurement is displayed throughout the radio including Course Over Ground (COG) on the Home screen.

1. Press the **MENU** key.
2. Select **SYSTEM > UNITS > HEADING**.
3. Select from the following options:
   - **TRUE**—change the calculation to reflect true north.
   - **MAGNETIC**—change the calculation to reflect magnetic north.

**NOTE:** If your radio is configured for NMEA 2000 communication, you cannot select **TRUE** or **MAGNETIC**. Your radio displays AUTO as the setting and displays heading data based on the information provided over the network (PGN 129026 – COG/SOG, Rapid Update).

**Selecting the Frequency Band**
You can switch between the USA, International, or Canadian frequency bands. For a list of channels available in each frequency band, see pages 36–43.

**NOTE:** The International frequency band is the only band available for the VHF 300i and the VHF 300i AIS, unless you have the other bands enabled by an Garmin authorized dealer.

1. Press the **MENU** key.
2. Select **MENU > CHANNEL > FREQUENCY BAND**.
3. Use the Channel knob to select **USA, INTERNATIONAL, or CANADA**.
Changing the Language
1. Press the **MENU** key.
2. Select **LANGUAGE**.
3. Select the system language.

Changing the Channel Names
Channel names are displayed on the Home screen using nine characters. If the name is longer than nine characters, the full name scrolls across the top of the screen and then switches to the short name. You can change the nine-character name of the channel to reflect a local meaning.

1. Press the **MENU** key.
2. Select **CHANNEL > NAME**.
3. Select the channel you want to edit.
4. To edit the default name, turn the Channel knob to change the character. Press the Channel knob to select the character and move to the next character in the word. You can enter a maximum of nine characters for a channel name.
5. Select any of the following options to perform various functions:
   - Press ← to return to a previous character.
   - **CANCEL**—return to the previous screen without saving your changes.
6. When you have completed renaming the channel, select **ACCEPT**.

Restoring Factory Settings
You can restore the radio to utilize the factory default settings. When you perform this action, any changes you have made to the radio settings are lost, and the call logs are deleted. The directory and group entries are retained.

1. Press the **MENU** key.
2. Select **SYSTEM > SYSTEM INFO**.
3. Select **RESET**.
4. Select from the following options:
   - **YES**—restart the radio and restore it to the original factory default settings.
   - **NO**—return to the previous screen.

Testing the System Operation
1. Press the **MENU** key.
2. Select **SYSTEM > SYSTEM INFO**.
3. Select **TEST**. A list of test items is displayed.
4. If necessary, use the arrow keys to scroll through the information.
Appendix

Alarms and Messages
The radio may generate the following alarms or system messages.

Battery Alarm
If the radio detects a voltage greater than 15.8 Vdc or less than 10 Vdc, “HIGH VOLTAGE” or “LOW VOLTAGE” is displayed on the screen. Check the wiring if any of these conditions occur.

Main in Use
When the primary VHF 300 series radio unit is being used, “MAIN IN USE” is displayed on the screen of all remote Garmin GHS series handsets. The screen returns to normal three seconds after the last input on the primary station.

Remote handset stations cannot interrupt the primary radio unit. However, remote handset stations can interrupt the operation of other handset stations.

WX (Weather Alert)
If you set the WX alarm and an incoming weather alert is detected, the radio automatically tunes to the WX channel that is broadcasting the alert. See page 11 for more information on weather alerts.

GPS Data Alarm
When GPS data from a NMEA network or position data you entered manually is over four hours old, the alarm tone beeps and “DATA IS OVER 4 HOURS OLD” is displayed on the screen.

• Select IGNORE to disregard the alarm and to turn off the alarm beeping. When you take no action after three minutes, IGNORE is selected automatically.

• Select SET to enter a new position. See page 26 for more information on manually entering position data.

Invalid GPS Data Alarm
When GPS data from a NMEA network or position data you entered manually is over 23.5 hours old, “DATA IS INVALID” is displayed on the screen. The radio will not transmit position data that is more than 23.5 hours old.

• Select IGNORE to discard the old position data. The screen displays “NO GPS INFO” on the Home screen. When you take no action after three minutes, IGNORE is selected automatically.
• Select **SET** to enter a new position. See page 26 for more information on manually entering position data.

**Position Tracking**

After five consecutive failed attempts to request position information from a vessel, “NO POS FOR [VESSEL NAME]” is displayed on the screen.

• Select **RETRY** to reattempt the position request.
• Select **REMOVE** to discontinue calling the vessel. When you take no action after three minutes, **REMOVE** is selected automatically.

**Channel Lists**

The USA, Canadian, and International channel lists provided in this Appendix are for reference only. It is the responsibility of the radio operator to ensure that channels are used correctly according to local regulations.

**USA Channels**

For the latest information on USA channels, visit [www.navcen.uscg.gov/marcomms/vhf.htm](http://www.navcen.uscg.gov/marcomms/vhf.htm). Also visit the Federal Communications Commission’s Marine VHF Radio Channels page at [http://wireless.fcc.gov/services/index.htm?job=service_bandplan&id=ship_stations](http://wireless.fcc.gov/services/index.htm?job=service_bandplan&id=ship_stations). The FCC page does not include frequency information, but has more complete information on the use of the channels.

**IMPORTANT:** Boaters primarily should use channels listed as non-commercial. Use Channel 16 to call other stations or for distress alerting. Use Channel 13 to contact a ship when there is danger of collision. All ships of length 20 m or greater are required to guard VHF Channel 13, in addition to VHF Channel 16, when operating within USA territorial waters. Users may be fined by the FCC for improper use of these channels.

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Transmission MHz</th>
<th>Receiving MHz</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>01A</td>
<td>156.050</td>
<td>156.050</td>
<td>Port operations and commercial, VTS. Available only in the New Orleans and lower Mississippi areas.</td>
</tr>
<tr>
<td>03A</td>
<td>156.150</td>
<td>156.150</td>
<td>Government only</td>
</tr>
<tr>
<td>05A</td>
<td>156.250</td>
<td>156.250</td>
<td>Port operations or VTS in the Houston, New Orleans, and Seattle areas.</td>
</tr>
<tr>
<td>6</td>
<td>156.300</td>
<td>156.300</td>
<td>Intership safety</td>
</tr>
<tr>
<td>07A</td>
<td>156.350</td>
<td>156.350</td>
<td>Commercial</td>
</tr>
<tr>
<td>8</td>
<td>156.400</td>
<td>156.400</td>
<td>Commercial (Intership only)</td>
</tr>
<tr>
<td>9</td>
<td>156.450</td>
<td>156.450</td>
<td>Boater Calling. Commercial and non-commercial.</td>
</tr>
<tr>
<td>10</td>
<td>156.500</td>
<td>156.500</td>
<td>Commercial</td>
</tr>
<tr>
<td>Channel Number</td>
<td>Transmission MHz</td>
<td>Receiving MHz</td>
<td>User</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>156.550</td>
<td>156.550</td>
<td>Commercial. VTS in selected areas.</td>
</tr>
<tr>
<td>12</td>
<td>156.600</td>
<td>156.600</td>
<td>Port operations. VTS in selected areas.</td>
</tr>
<tr>
<td>13</td>
<td>156.650</td>
<td>156.650</td>
<td>Intership navigation safety (bridge-to-bridge). Ships greater than 20 meters in length maintain a listening watch on this channel in US waters.</td>
</tr>
<tr>
<td>14</td>
<td>156.700</td>
<td>156.700</td>
<td>Port operations. VTS in selected areas.</td>
</tr>
<tr>
<td>15</td>
<td>--</td>
<td>156.750</td>
<td>Environmental (receive only). Used by Class C Emergency Position Indicating Radio Beacons (EPIRBs).</td>
</tr>
<tr>
<td>16</td>
<td>156.800</td>
<td>156.800</td>
<td>International distress, safety, and calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel.</td>
</tr>
<tr>
<td>17</td>
<td>156.850</td>
<td>156.850</td>
<td>State control</td>
</tr>
<tr>
<td>18A</td>
<td>156.900</td>
<td>156.900</td>
<td>Commercial</td>
</tr>
<tr>
<td>19A</td>
<td>156.950</td>
<td>156.950</td>
<td>Commercial</td>
</tr>
<tr>
<td>20</td>
<td>157.000</td>
<td>161.600</td>
<td>Port operations (duplex)</td>
</tr>
<tr>
<td>20A</td>
<td>157.000</td>
<td>157.000</td>
<td>Port operations</td>
</tr>
<tr>
<td>21A</td>
<td>157.050</td>
<td>157.050</td>
<td>USA Coast Guard only</td>
</tr>
<tr>
<td>22A</td>
<td>157.100</td>
<td>157.100</td>
<td>Coast Guard Liaison and Maritime Safety Information Broadcasts. Broadcasts are announced on Channel 16.</td>
</tr>
<tr>
<td>23A</td>
<td>157.150</td>
<td>157.150</td>
<td>USA Coast Guard only</td>
</tr>
<tr>
<td>24</td>
<td>157.200</td>
<td>161.800</td>
<td>Public correspondence (Marine Operator)</td>
</tr>
<tr>
<td>25</td>
<td>157.250</td>
<td>161.850</td>
<td>Public correspondence (Marine Operator)</td>
</tr>
<tr>
<td>26</td>
<td>157.300</td>
<td>161.900</td>
<td>Public correspondence (Marine Operator)</td>
</tr>
<tr>
<td>27</td>
<td>157.350</td>
<td>161.950</td>
<td>Public correspondence (Marine Operator)</td>
</tr>
<tr>
<td>28</td>
<td>157.400</td>
<td>162.000</td>
<td>Public correspondence (Marine Operator)</td>
</tr>
<tr>
<td>61A</td>
<td>156.075</td>
<td>156.075</td>
<td>Government only</td>
</tr>
<tr>
<td>63A</td>
<td>156.175</td>
<td>156.175</td>
<td>Port operations and commercial, VTS. Available only in the New Orleans and lower Mississippi areas.</td>
</tr>
<tr>
<td>64A</td>
<td>156.225</td>
<td>156.225</td>
<td>Coast Guard only</td>
</tr>
<tr>
<td>65A</td>
<td>156.275</td>
<td>156.275</td>
<td>Port operations</td>
</tr>
<tr>
<td>66A</td>
<td>156.325</td>
<td>156.325</td>
<td>Port operations</td>
</tr>
<tr>
<td>67</td>
<td>156.375</td>
<td>156.375</td>
<td>Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Intership only.</td>
</tr>
<tr>
<td>68</td>
<td>156.425</td>
<td>156.425</td>
<td>Non-Commercial</td>
</tr>
<tr>
<td>69</td>
<td>156.475</td>
<td>156.475</td>
<td>Non-Commercial</td>
</tr>
</tbody>
</table>
### Channel List

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Transmission MHz</th>
<th>Receiving MHz</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>156.525</td>
<td>156.525</td>
<td>Digital Selective Calling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(voice communications not allowed)</td>
</tr>
<tr>
<td>71</td>
<td>156.575</td>
<td>156.575</td>
<td>Non-Commercial</td>
</tr>
<tr>
<td>72</td>
<td>156.625</td>
<td>156.625</td>
<td>Non-Commercial (Intership only)</td>
</tr>
<tr>
<td>73</td>
<td>156.675</td>
<td>156.675</td>
<td>Port Operations</td>
</tr>
<tr>
<td>74</td>
<td>156.725</td>
<td>156.725</td>
<td>Port Operations</td>
</tr>
<tr>
<td>77</td>
<td>156.875</td>
<td>156.875</td>
<td>Port Operations (Intership only)</td>
</tr>
<tr>
<td>78A</td>
<td>156.925</td>
<td>156.925</td>
<td>Non-Commercial</td>
</tr>
<tr>
<td>79A</td>
<td>156.975</td>
<td>156.975</td>
<td>Commercial. Non-Commercial in the Great Lakes only.</td>
</tr>
<tr>
<td>81A</td>
<td>157.075</td>
<td>157.075</td>
<td>USA Government only. Environmental protection operations.</td>
</tr>
<tr>
<td>82A</td>
<td>157.125</td>
<td>157.125</td>
<td>USA Government only</td>
</tr>
<tr>
<td>83A</td>
<td>157.175</td>
<td>157.175</td>
<td>USA Coast Guard only</td>
</tr>
<tr>
<td>84</td>
<td>157.225</td>
<td>161.825</td>
<td>Public Correspondence (Marine Operator)</td>
</tr>
<tr>
<td>85</td>
<td>157.275</td>
<td>161.875</td>
<td>Public Correspondence (Marine Operator)</td>
</tr>
<tr>
<td>86</td>
<td>157.325</td>
<td>161.925</td>
<td>Public Correspondence (Marine Operator)</td>
</tr>
<tr>
<td>87</td>
<td>157.375</td>
<td>161.975</td>
<td>Public Correspondence (Marine Operator)</td>
</tr>
<tr>
<td>88</td>
<td>157.425</td>
<td>162.025</td>
<td>Public Correspondence only near Canadian border.</td>
</tr>
<tr>
<td>88A</td>
<td>157.425</td>
<td>157.425</td>
<td>Commercial, Intership only</td>
</tr>
</tbody>
</table>

The letter “A” indicates simplex use of the ship station transmit side of an international duplex channel, and that operations are different than international operations on that channel. “A” channels are generally only used in the USA, and use is normally not recognized or allowed outside the USA.

The letter “B” indicates simplex use of the coast station transmit side of an international duplex channel. The USA does not currently use “B” channels for simplex communications in this band.

### WX (Weather) Channels

<table>
<thead>
<tr>
<th>Channel</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WX1</td>
<td>162.55</td>
</tr>
<tr>
<td>WX2</td>
<td>162.4</td>
</tr>
<tr>
<td>WX3</td>
<td>162.475</td>
</tr>
<tr>
<td>WX4</td>
<td>162.425</td>
</tr>
<tr>
<td>Channel</td>
<td>Frequency (MHz)</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>WX5 162.45</td>
<td></td>
</tr>
<tr>
<td>WX6 162.5</td>
<td></td>
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## Canadian Channels

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### Channel Information

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</table>

**Key**
- PC: Pacific Coast
- EC (East Coast): includes NL, AC, GL and Eastern Arctic areas
- WC (West Coast): Pacific Coast, Western Arctic and Athabasca-Mackenzie Watershed areas

### International Channels

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**Key**
- NL: Newfoundland and Labrador
- AC: Atlantic Coast, Gulf, and St. Lawrence River up to and including Montreal
- GL: Great Lakes (including St. Lawrence above Montreal)
- All areas: includes East and West Coast areas
## Appendix

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<th>Channel Number</th>
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<td>Public correspondence, Port Operations, and Ship Movement</td>
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</table>
### Specifications

**VHF 300/300i Specifications**

**Dimensions:** $W \times H \times D: 9 \frac{3}{4} \times 7 \frac{3}{32} \times 2 \frac{1}{2}$ in. (248 $\times$ 180 $\times$ 64 mm)

**Weight:** 4.177 lb. (1.895 kg)

**Temperature Range:** from 14°F to 122°F (from -10°C to 50°C)

**Compass-safe Distance:** 20 in. (500 mm)

**Waterproof:** IEC 60529 IPX7 (Immersion in 1 meter of water for 30 minutes)

**Antenna Connector:** S0-239 (50 Ω)

**Digital Selective Calling:** Class D

**Frequency Bands:** All USA, Canadian, and International marine channels; 10 NOAA weather channels

**Frequency Range:** between 155.000 and 162.500

**Maximum Antenna Gain:** 9 dBi

**Antenna Port Impedance:** 50 Ω

**Power**

**Operating Voltage:** from 10.8 to 15.6 Vdc (12 Vdc boat battery)

**Current Drain:**
- Transmit (High Power): 6 A max
- Transmit (Low Power): 2 A max

**Transmit Power (at 13.6 Vdc):**
- High Power: 25 W (23–25 W)
- Low Power: 1 W (.7–1 W)

**Maximum Deviation:** 5 kHz

**Hum and Noise:** -40 dB or less

**Duty Cycle:** 5% Transmit; 5% Receive; 90% Standby

---

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Transmission MHz</th>
<th>Receiving MHz</th>
<th>User</th>
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<td>86</td>
<td>157.325</td>
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<td>87</td>
<td>157.375</td>
<td>157.375</td>
<td>Port Operations and Ship Movement</td>
</tr>
<tr>
<td>88</td>
<td>157.425</td>
<td>157.425</td>
<td>Port Operations and Ship Movement</td>
</tr>
</tbody>
</table>
Modulation Distortion: 10% or less
Adjacent Channel Power: -70 dBc or less
Conducted Spurious Emission: -36 dBm or less

**Receiver**

Audio Distortion: Less than 10%
Hum and Noise: Less than -40 dB
Squelch Operation: Less than 107 dBm at tight setting
Adjacent Channel Rejection: 70 dB or more
Spurious Response: 70 dB or more
Inter-modulation Response: 70 dB or more

**Audio**

Full-function Handset:
- Impedance: 4 Ω
- Input Power: 4 W

External Speaker:
- Output Power: 4 W (4 Ω/max)

**VHF 300/300i AIS Specifications**

Dimensions: W × H × D: 9 3/4 × 7 3/32 × 2 1/2 in. (248 × 180 × 64 mm)
Weight: 4.177 lb. (1.895 kg)
Temperature Range: from 14ºF to 122ºF (from -10ºC to 50ºC)
Compass-safe Distance: 20 in. (500 mm)
Waterproof: IEC 60529 IPX7 (Immersion in 1 meter of water for 30 minutes)
Antenna Connector: S0-239 (50 Ω)
Digital Selective Calling: Class D
Frequency Bands: All USA, Canadian, and International marine channels; 10 NOAA weather channels
Maximum Antenna Gain: 9 dBi
Antenna Port Impedance: 50 Ω

**Power**

Operating Voltage: from 10.8 to 15.6 Vdc (12 Vdc boat battery)
Current Drain:
- Transmit (High Power): 6 A max
- Transmit (Low Power): 2 A max
Appendix

Transmitter
Frequency Error: +/- 500 Hz
Transmit Power (at 13.6 Vdc):
  High Power: 25 W (23–25 W)
  Low Power: 1 W (.7–1 W)
Maximum Deviation: 5 kHz
Hum and Noise: -40 dB or less
Duty Cycle: 5% Transmit; 5% Receive; 90% Standby
Modulation Distortion: 10% or less
Adjacent Channel Power: -70 dBc or less
Conducted Spurious Emission: -36 dBm or less

Receiver
Audio Distortion: Less than 10%
Hum and Noise: Less than -40 dB
Squelch Operation: Less than 107 dBm at tight setting
Adjacent Channel Rejection: 70 dB or more
Spurious Response: 70 dB or more
Inter-modulation Response: 70 dB or more

AIS Receiver
Adjacent Channel Rejection: 70 dB or more
Spurious Response: 70 dB or more
Inter-modulation Response: 70 dB or more

Audio
Full-function Handset:
  Impedance: 4 Ω
  Input Power: 4 W
External Speaker:
  Output Power: 4 W (4 Ω/max)

VHF 300 Series and VHF 300 AIS Series Auxiliary Component Specifications
Hailer Output Power: 30 W max
Hailer Horn Impedance: 4 Ω
## NMEA (VHF 300 models and VHF 300 AIS models)

### NMEA 0183 IN Sentences Supported (NMEA 0183 version 3.01)

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Definition</th>
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<tbody>
<tr>
<td>GGA</td>
<td>Global Positioning System Fix Data</td>
</tr>
<tr>
<td>GLL</td>
<td>Geographic Position - Latitude/Longitude</td>
</tr>
<tr>
<td>GNS</td>
<td>GNSS Fix Data</td>
</tr>
<tr>
<td>RMA</td>
<td>Recommended Minimum Specific Loran-C Data</td>
</tr>
<tr>
<td>RMB</td>
<td>Recommended Minimum Navigation Information</td>
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<tr>
<td>RMC</td>
<td>Recommended Minimum Specific GNSS Data</td>
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### NMEA 0183 OUT Sentences Supported (NMEA 0183 version 3.01)

<table>
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<td>DSC</td>
<td>DSC Information</td>
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<tr>
<td>DSE</td>
<td>Expanded DSC</td>
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<tr>
<td>VDM*</td>
<td>AIS Information</td>
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### NMEA 2000 PGN Information

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<td>059392 ISO Acknowledgement</td>
<td>059392 ISO Acknowledgement</td>
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<tr>
<td>059904 ISO Request</td>
<td>060928 ISO Address Claim</td>
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<td>060928 ISO Address Claim</td>
<td>126208 NMEA Request/Command/Ack</td>
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<td>126208 NMEA Request/Command/Ack</td>
<td>126464 PGN List</td>
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<tr>
<td>129026 COG/SOG, Rapid Update</td>
<td>126996 Product Information</td>
</tr>
<tr>
<td>129029 GNSS Position Data</td>
<td>129799 Radio Frequency/Mode/Power</td>
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<tr>
<td>129029 GNSS Position Data</td>
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<tr>
<td>129808 DSC Call Information</td>
<td>129038* AIS Class A Position Report</td>
</tr>
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<td>129039* AIS Class B Position Report</td>
<td>129040* AIS Class B Extended Position Report</td>
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<tr>
<td>129794* AIS Class A Static and Voyage Related Data</td>
<td>129798* AIS SAR Aircraft Position Report</td>
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</table>

* VHF 300 AIS models only
Appendix

GHS 10 and GHS 10i Specifications
Dimensions: 6 11/32 × 2 13/16 × 1 11/16 in. (161 × 71.6 × 42.8 mm)
Weight: 12.98 oz. (368 g)
Temperature Range: from 14ºF to 122ºF (from -10ºC to 50ºC)
Compass-safe Distance: 20 in. (500 mm)
Waterproof: IEC 60529 IPX7 (Immersion in 1 meter of water for 30 minutes)

Contact Garmin
Contact Garmin Product Support if you have any questions while using your VHF 300 series radio. In the USA, go to www.garmin.com/support, or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.
In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.
In Europe, go to www.garmin.com/support and click Contact Support for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

Caring for the Unit
The case is constructed of high quality materials and does not require user maintenance, except cleaning.

Cleaning the Case
Clean the unit’s outer casing (except for the screen) using a cloth dampened with a mild detergent solution and then wipe dry. Avoid chemical cleaners and solvents that may damage plastic components.

Cleaning the Screen
The unit’s lens is textured to reduce glare, and is sensitive to skin oils, waxes and abrasive cleaners. Cleaners containing ammonia, alcohol, abrasives, or anti-grease detergents will harm the anti-reflective coating. It is important to clean the lens using an eyeglass lens cleaner (that is specified as safe for anti-reflective coatings) and a clean, lint-free cloth.

Water Immersion
The unit is waterproof to IEC Standard 60529 IPX7. It can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the unit. After submersion, be certain to wipe and air dry the unit before reuse.
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   sending undesignated  15
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DSC  See Digital Selective Calling
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WX See weather
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www.garmin.com

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