Our Thanks To You

Thank you for purchasing a CobraMarine® VHF radio. Properly used, this Cobra® product will give you many years of reliable service.

How Your CobraMarine VHF Radio Works
This radio is a VHF transceiver for fixed mounting on your boat. It gives you 2-way vessel-to-vessel and vessel-to-shore station communications, primarily for safety and secondarily for navigation and operational purposes. With it, you can call for help, get information from other boaters, talk to lock or bridge tenders and make radiotelephone calls to anywhere in the world through a marine operator.

Besides 2-way communications, in the U.S.A., the radio can provide quick access to receive seven NOAA (National Oceanographic and Atmospheric Administration) and two Canadian weather channels for alerting you to weather emergencies with a tone on a weather channel you can select for your area.

Customer Assistance
Should you encounter any problems with this product, or not understand its many features, please refer to this owner’s manual. If you require further assistance after reading this manual, Cobra Electronics offers the following customer assistance services:

For Assistance In The U.S.A.
Automated Help Desk English only.
24 hours a day, 7 days a week 773-889-3087 (phone).

Customer Assistance Operators English and Spanish.
8:00 a.m. to 5:30 p.m. Central Time Mon. through Fri. (except holidays)
773-889-3087 (phone).

Questions English and Spanish.
Faxes can be received at 773-622-2269 (fax).

Technical Assistance English only.
English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside The U.S.A.
Contact Your Local Dealer

©2010 Cobra Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 USA
www.cobra.com
**Transceiver Controls, Indicators And Connections**

- Radio Status and Data Display
- Backlit LCD Screen
- Down Button
- Up Button
- Simplex Operation Icon
- Squelch Knob
- On-Off Power/Volume Knob
- Instant Channel 16/9 Button
- Active Channel Number
- Microphone Cord Connection Socket
- DSC Distress Button (Behind Red Spring Loaded Cover)
- Microphone
- Talk Button
- Call/Set Button
- Scan Button
- Up/Down Buttons
- High/Low Power Button
- Weather/UIC Button
- Position Coordinates – Latitude and Longitude
- Speaker
- External Speaker Jack
- Global Positioning System (GPS) Jack
- Power Connection
- Antenna Socket

**Microphone With Auxiliary Controls**

- **Up/Down Buttons**
  - Can be used instead of those on the transceiver.

- **Instant Channel 16/9 Button**
  - Can be used instead of the one on the transceiver.

**Product Features**

- **Dual Power**
  - Selectable to one (1) or 25 watts output power for near or distant calling.

- **USA/International/Canada Channels**
  - Allows operation on any of the three (3) different channel maps established for these areas.

- **All NOAA Weather Channels**
  - Instant access to all of the National Weather Channels, 24 hours a day.

- **Emergency Weather Alert**
  - Can alert you with an audible tone and visual alarm if threatening weather is nearby.

- **Instant Channel 16/9 Button**
  - Instant access to the priority Channel 16 and calling Channel 9.

- **Digital Selective Calling (DSC Class-D)**
  - Allows the ability to maintain a listening watch on VHF Channel 16 while simultaneously monitoring Channel 70 for DSC calls. Allows sending a distress message at the touch of a button as well as specific station-to-station calls. Radio utilizes two (2) built-in encoders (receivers).

- **Scan**
  - Lets you scan through all channels in the active channel map to find conversations in progress.

- **Dual-Watch**
  - Lets you monitor two (2) channels at once — Channel 16 and one (1) user selectable channel.

- **Controls On The Microphone**
  - Handy control buttons on the microphone let you operate one (1) handed at a distance from the radio.

- **Illuminated Buttons**
  - Helps you quickly find the buttons you need in low light conditions.

- **Mounting Kits Included**
  - Radio can be mounted on or under almost any flat surface using one (1) of the included brackets.

- **Waterproof**
  - Submersible to one (1) meter of water for 30 minutes — meets JIS7 Standards.
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*Nothing Comes Close to a Cobra®*
Important Safety Information

Before installing and using your CobraMarine VHF radio, please read these general precautions and warnings.

Warning And Caution Statements

To make the most of this radio, it must be installed and used properly. Please read the installation and operating instructions carefully before installing and using it. Special attention must be paid to the WARNING and CAUTION statements in this manual.

WARNING Statements identify conditions that could result in personal injury or loss of life.

CAUTION Statements identify conditions that could cause damage to the radio or other equipment.

Safety Training Information

This CobraMarine radio is designed for and classified as “Occupational Use Only.” It must only be used in the course of employment by individuals aware of both the hazards and the ways to minimize those hazards. This radio is NOT intended for use in an uncontrolled environment by the “General Population.”

This radio has been tested and complies with the FCC RF exposure limits for “Occupational Use Only.” This CobraMarine VHF radio also complies with the following guidelines and standards regarding RF energy and electromagnetic energy levels as well as evaluation of those levels for human exposure:


NOTE Throughout this manual, the term “Transceiver” will be used to identify the main unit containing the LCD screen and controls. The term “Radio” will be used to identify the entire equipment including transceiver, microphone, antenna and any attached external speakers.
Recommendations For Marine Communication

The frequencies your radio uses are set aside to enhance safety afloat and for vessel navigation and operational messages over a range suitable for nearshore voyages. If the 25 watt maximum output of your radio isn’t sufficient for the distances you travel from the coast, consider installing more powerful radio equipment such as HF single side band or satellite radio for your vessel.

The U.S. Coast Guard does not endorse cellular telephones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a cellular telephone, only the party you call will be able to hear you. Additionally, cellular telephones may have limited coverage over water and can be hard to locate. If you don’t know where you are, the Coast Guard will have difficulty finding you if you’re using a cellular telephone.

However, cellular telephones can have a place on board where cellular coverage is available — to allow social conversations and keep the marine frequencies uncluttered and available for their intended uses.

Changes or modifications to your radio MAY VOID its compliance with FCC (Federal Communications Commission) rules and make it illegal to use.

FCC LICENSING INFORMATION

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

This CobraMarine radio incorporates a VHF FM transceiver designed for use in the frequency range of 156.025 to 163.275 MHz. It requires 13.8 volts DC and has a switchable RF output power of one (1) or 25 watts.

The transceiver is capable of Class-D (Digital Selective Calling) operation in accordance with CFR Part 47, Section 80.225.

The radio operates on all currently allocated marine channels and is switchable for use according to U.S.A., International, or Canadian regulations. It features instant access to emergency Channel 16 and calling Channel 9 as well as NOAA (National Oceanic and Atmospheric Administration) All Hazards Radio with Alert that can be accessed by pressing one (1) key.

Station License

An FCC ship station license is no longer required for any vessel traveling in U.S.A. waters which uses a VHF marine radio, RADAR, or EPIRB (Emergency Position Indicating Radio Beacon), and which is not required to carry radio equipment. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone, or carrying a marine satellite terminal must obtain a station license.

FCC license forms and applications for ship and land stations can be downloaded through the Internet at www.fcc.gov/forms. Forms can also be obtained by calling the FCC at 888-225-5322.

International Station License

If your vessel will be entering the sovereign waters of a country other than the U.S.A. or Canada, you should contact that country’s communications regulatory authority for licensing information.

Radio Call Sign

Currently, the FCC does not require recreational boaters to have a license. The United States Coast Guard recommends that the boat’s registration number and state of registry (e.g., IL 1234 AB) be used as a call sign and be clearly visible on the vessel.

Canadian Ship Station License

You need a Radio Operator’s Certificate if your vessel is operated in Canadian waters. Radio Operator training and certification is available from the Canadian Power Squadron. Visit their website (http://www.cps-ecp.ca/english/newradiocard.html), contact the nearest field office or write: Industry of Canada, Radio Regulatory Branch, Attn: DOSP, 300 Slater Street, Ottawa, Ontario, Canada K1A 0C8.
User Responsibility And Operating Locations

All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The VHF frequencies on your radio are reserved for marine use and require a special license to operate from land, including when your boat is on its trailer.

NOTE
This device complies with part 15 of the FCC Rules. Operation is subject to the following two (2) conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Warnings: Replacement or substitution of transistors, regular diodes, or other parts of a unique nature, with parts other than those recommended by Cobra may cause a violation of the technical regulations of part 80 of the FCC Rules, or violation of type acceptance requirements of part 2 of the rules.

VHF Marine Radio Procedures

Maintain Your Watch
Whenever your boat is underway, the radio must be turned On and be tuned to Channel 16, except when being used for messages.

Power
Try 1 watt first if the station being called is within a few miles. Try a second call after waiting two (2) minutes. If there is no answer, switch to a higher power. This will conserve your battery and minimize interference to other users by avoiding repeated calls.

Calling Coast Stations
Call a coast station on its assigned channel. You may use Channel 16 when you do not know the assigned channel.

Calling Other Vessels
Call other vessels on Channel 16 or on Channel 9. (Channel 9 is preferred for recreational vessel use.) You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

Initial Calling on Channel 16 or 9
The use of Channel 16 is permitted for making initial contact (hailing) with another vessel. The limits on calling must be followed. Be reminded, Channel 16’s most important function is for Emergency Messages. If, for some reason, Channel 16 is congested, the use of Channel 9, especially in U.S. waters, may be used as the initial contact (hailing) channel for non-emergency communication.

Voice Calling

Limits On Calling
You must not call the same station for more than 30 seconds at a time. If you do not get a reply, wait at least two (2) minutes before calling again. After three (3) calling periods, wait at least 15 minutes before calling again.

Change Channels
After contacting another station on a calling channel, change immediately to a channel which is available for the type of message you want to send.

Station Identification
Identify, in English, your station by your FCC call sign, ship name, the state registration number, or other official number at both the beginning and end of each message.

Prohibited Communications
You MUST NOT transmit:
- False distress or emergency messages.
- Messages containing obscene, indecent, or profane words or meaning.
- General calls, signals, or messages (messages not addressed to a particular station) on Channel 16, except in an emergency or if you are testing your radio.
- When you are on land.

Voice Calling

To Call Another Vessel Or A Shore Installation Such As A Lock Or Bridge Tender:
- Make sure your radio is On.
- Select Channel 16 and listen to make sure it is not being used.

NOTE
Channel 9 may be used by recreational vessels for general-purpose calling. This frequency should be used whenever possible to relieve congestion on Channel 16.

- When the channel is quiet, press the Talk button and call the ship you wish to call. (Hold the microphone a few inches from your face and speak directly into it in a normal tone of voice — clearly and distinctly.) Say “[name of station being called] THIS IS [your vessel’s name or call sign].”
- Once contact is made on the calling channel, you must switch to a proper working channel. See the channel listing on page 14 through 15.
Maritime Mobile Service Identity (MMSI)

The MMSI Number Is Available In The U.S.A. From Any Of Two (2) Sources:


An MMSI is a nine (9) digit number used on a marine radio capable of using digital selective calling (DSC). It is used to selectively call other vessels or shore stations and is similar to a telephone number.

For your Cobra® Marine radio to operate in the DSC mode, you must enter your maritime mobile service identity (MMSI) number. See page 41 for instructions on how to enter it.

In Canada, Contact:


To Obtain An MMSI Number Outside The U.S.A.:

Users can obtain an MMSI from their country’s telecommunications authority or ship registry. This may involve amending or obtaining a ship station license.

WARNING

This equipment is designed to generate a digital maritime distress and safety signal 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 to distress and safety watch system. The range of the signal may vary, but under normal conditions should be approximately 20 nautical miles.

Digital Selective Calling (DSC)

Digital selective calling is a semi-automated system for establishing a radio call. It has been designed by the International Maritime Organization (IMO) as an international standard for VHF, MF, and HF calls and is part of the Global Maritime Distress and Safety System (GMDSS).

DSC will eventually replace aural (listening) watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts. Until DSC is fully implemented, it is still necessary to maintain a listening watch on Channel 16.

The DSC system allows mariners to instantly send a distress call with GPS position coordinates (requires a GPS receiver to be connected to the radio) to the Coast Guard and other vessels within range of the transmission. DSC also allows mariners to initiate and receive distress, urgent, safety, routine, position request, position send, and group calls between vessels equipped with DSC capable radios.

For Example

The vessel Corsair calling the vessel Vagabond:

Corsair: “Vagabond, this is Corsair (station license number call sign).”
Vagabond: “Corsair, this is Vagabond. Over.”
Corsair: “Vagabond go to working Channel 68. Over.”
Both parties switch over to the agreed upon working channel....
Corsair: “Vagabond I need to talk to you about... Over.”
Vagabond: “Corsair in answer to your question about... Over.”
Corsair: “Vagabond, thanks for the information about... (call sign and out).”

After each transmission, say “OVER” and release the microphone Push to Talk (PTT) button. This confirms that the transmission has ended. When all communication with the other vessel is totally completed, end the message by stating your call sign and the word “OUT.” Remember, it is not necessary to state your call sign with each transmission, only at the beginning and end of the message.

NOTE

For best sound quality at the shore station or other vessel receiving your call, hold the microphone/speaker at least 2 in. (51 mm) from your mouth and slightly off to one (1) side. Speak in a normal tone of voice.
Radiotelephone Calls

Boaters may make and receive radiotelephone calls to and from any number on the telephone network by using the services of public coast stations. Calls can be made — for a fee — between your radio and telephones on land, sea, and in the air. See pages 58 through 69 for the public correspondence (marine operator) channels.

If you plan to use these services, consider registering with the operator of the public coast station that you plan to work through. Those services can provide you with detailed information and procedures to follow.

NOTICE
You may disclose privileged information during a radiotelephone call. Keep in mind that your transmission is NOT private, as it is on a regular telephone. Both sides of the conversation are being broadcast and can be heard by anyone who has a radio and tunes to the channel you are using.

Emergency Messages And Distress Procedure

The ability to summon assistance in an emergency is the primary reason to have a VHF marine radio. The marine environment can be unforgiving, and what may initially be a minor problem can rapidly develop into a situation beyond your control.

The Coast Guard monitors Channel 16, responds to all distress calls, and coordinates all search and rescue efforts. Depending on the availability of other capable vessels or commercial assistance operators in your vicinity, Coast Guard or Coast Guard Auxiliary craft may be dispatched.

In any event, do communicate with the Coast Guard as soon as you experience difficulties and before your situation becomes an emergency. Use the emergency message procedures only after your situation has become grave or you are faced with a sudden danger threatening life or property and requiring immediate help.

Use channel 16 to communicate your emergency message. Make sure you transmit on high power. If you are merely out of gas, do not send an emergency message. Drop your anchor and call a friend or marine to bring the fuel you need or to give you a tow.

Marine Emergency Signals

The three (3) spoken international emergency signals are:

<table>
<thead>
<tr>
<th>Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAYDAY</td>
<td>The distress signal MAYDAY is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance.</td>
</tr>
<tr>
<td>PAN</td>
<td>The urgency signal PAN is used when the safety of the vessel or person is in jeopardy. (This signal is properly pronounced pahn.)</td>
</tr>
<tr>
<td>SECURITE</td>
<td>The safety signal SECURITE is used for messages about the safety of navigation or important weather warnings. (This signal is properly pronounced see-cure-it-tay.)</td>
</tr>
</tbody>
</table>

When using an international emergency signal, the appropriate signal is to be spoken three (3) times prior to the message.

If You Hear A Distress Call

You must give any message beginning with one (1) of these signals priority over any other messages. ALL stations MUST remain silent on Channel 16 for the duration of the emergency unless the message relates directly to the emergency.

If you hear a distress message from a vessel, stand by your radio. If it is not answered, YOU should answer. If the distressed vessel is not nearby, wait a short time for others who may be closer to acknowledge. Even if you cannot render direct assistance, you may be in a position to relay the message.
Marine Distress Procedure

Speak slowly — clearly — calmly.

1. Make sure your radio is **On**.

2. Select VHF Channel 16.

3. **Press Talk button and say:**
   “MAYDAY — MAYDAY — MAYDAY.”
   (Or “PAN — PAN — PAN,”
   or “SECURITE — SECURITE — SECURITE.”)

4. **Say:**
   “THIS IS [your vessel name or call sign].” Repeat three (3) times.

5. **Say:**
   “MAYDAY (or “PAN” or “SECURITE”)
   [your vessel name or call sign].

6. **Tell where you are:**
   (what navigational aids or landmarks are near).

7. State the nature of your distress.

8. State the kind of assistance needed.

9. Give number of persons aboard and conditions of any injured.

10. Estimate present seaworthiness of your vessel.

11. Briefly describe your vessel (length, type, color, hull).

12. **Say:**
    “I WILL BE LISTENING ON CHANNEL 16.”

13. **End message by saying:**
    “THIS IS [your vessel name or call sign] OVER.”

14. Release **Talk** button and listen. Someone should answer.
    If not, repeat the call, beginning at item 3 above.

For Example

“Mayday — Mayday — Mayday”
“This is Corsair — Corsair — Corsair” [or “Illinois 1234 AB” three (3) times]
“Mayday Corsair (or Illinois 1234 AB)”
“Navy Pier bears 220 degrees magnetic — distance 5 miles”
“Struck submerged object and flooding — need pump and tow”
“Four adults, three children aboard — no one injured”
“Estimate we will remain afloat one-half (½) hour”
“Corsair (or Illinois 1234 AB) is 26 foot sloop with blue hull and tan deck house”
“I will be listening on Channel 16”
“This is Corsair (or Illinois 1234 AB)”
“Over”

It is a good idea to write out a script of the message form and post it where you
and others on your vessel can see it when an emergency message needs to be sent.

Marine Distress Procedure – DSC

Digital Selective Calling (DSC) is a semi-automated system that will allow you to
press the **Distress** button from any routine to make a distress call. When the distress
button is pressed, all other channels go to **Standby** mode and allow the digitally
encoded “pre-programmed” message to take precedence. Important information such
as your MMSI number, position and name will be transmitted on Channel 16. The
distress alarm will sound for two (2) minutes or until the alarm is cleared.

The DSC system allows you to choose a “pre-programmed” distress call such as:
“Man Overboard, Sinking, Collision.” There are many pre-programmed choices to
choose from. If a GPS is connected to your radio, your coordinates will also be sent
to the Coast Guard as well as to other vessels that are within range of the
transmission. DSC calling also allows the user to initiate and receive distress,
urgent, safety, routine, position request, position send and group calls between
vessels equipped with DSC capable radios.

**WARNING**

This radio will generate a digital maritime distress and safety signal to help
facilitate search and rescue. This radio must be used only within
communication range of a shore based VHF station with a distress and safety
watch system. The range of the signal may vary, however, under normal
conditions should be approximately 20 nautical miles.
Included In This Package

You should find all of the following items in the package with your Cobra Marine VHF radio:

- Transceiver* Class-D Fixed Mount VHF Radio MR F45-D
- Transceiver Surface Mount Kit
- Microphone
- Microphone Mounting Kit
- Operating Instruction Manual
- GPS Interface Cable
- Warning Sticker
- Mini Plug Jack Panel with Switches and Connectors

Optional Accessories

You can find quality Cobra products and accessories at your local Cobra dealer, or in the U.S.A., you can order directly from Cobra.

Ordering From U.S.A.

Call 773-889-3087 for pricing or visit www.cobra.com.

For Credit Card Orders Call 773-889-3087 [Press one from the main menu] 8:00 a.m. to 5:30 p.m. Central Time, Monday through Friday.

Make Check or Money Order Payable To
Cobra Electronics, Attn: Accessories Dept.,
6500 West Cortland Street, Chicago, IL 60707 U.S.A.

To Order Online
Please visit our website: www.cobra.com
Mounting And Powering The Radio

Before using your CobraMarine VHF radio, it must be installed on your vessel.

Installing Your Radio

Choose a location for your radio where it will be conveniently accessible with the following factors in mind:

- The leads to the battery and the antenna are best kept as short as possible.
- The antenna must be mounted at least 3 feet (0.9m) from the transceiver.
- The radio and all speakers need to be far enough from any magnetic compass to avoid deviation due to the speaker magnet.
- There needs to be free air flow around the heat-sink fins on the back of the transceiver.

Surface Mount

A Surface Mounting kit is included with your CobraMarine VHF radio to allow its installation on almost any flat surface.

To Mount The Transceiver On Almost Any Flat Surface:

1. Use the mounting bracket as a template to drill holes for the mounting screws.
2. Attach the mounting bracket to the chosen surface with the mounting bracket screws and washers.
3. Attach the transceiver to the mounting bracket with the tilt lock knobs.
4. Tilt the transceiver to a convenient angle and tighten the tilt lock knobs.

Microphone Bracket

To Install The Microphone Bracket:

Install the microphone bracket on a vertical surface near the transceiver using the supplied stainless steel screws.

Flush Mount Kit (Not Included)

A Flush Mounting kit is available as an optional accessory for your CobraMarine VHF radio to allow its installation in almost any flat surface. See page 15 for ordering information.

To Mount The Transceiver Flush In Almost Any Flat Surface:

1. Use the supplied template to mark and cut an opening in the flat surface. See page 75 for template.
2. Insert the transceiver into the opening.
3. Attach the mounting brackets to the sides of the transceiver with the adjusting screw flanges facing the back of the flat surface.
4. Tighten the adjusting screws against the back of the flat surface until the flange on the front of the transceiver is tight against the flat surface. Do not over-tighten.
Warning Sticker
FCC regulations require that the Warning Sticker supplied with this radio be applied to a spot where it is easily seen by the radio operator. Be sure the location is clean and dry before applying the sticker.

Electrical Power Connection
Your CobraMarine VHF radio is powered from the vessel’s 13.8-volt negative ground direct current electrical system (12-volt nominal). A fused power connection lead is provided at the back of the transceiver.

To Connect To A Power Source:
1. Attach the black (-) wire to a negative (-) ground.
2. Attach the fused red power (+) wire to the positive (+) side of the power system.

NOTE
This radio will draw up to 8 amps when transmitting at full power.

NOTICES
A reverse polarity connection will damage the radio. When replacing the fuse in your transceiver, use only the size and type originally provided.

NOTE
All wiring is best kept as short as possible. If the power leads must be extended, use a high-quality, marine-grade cable sized for up to 10 amps of current. To minimize voltage drop, choose a wire gauge as follows:

<table>
<thead>
<tr>
<th>Length</th>
<th>Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1.5m (4.9 ft)</td>
<td>1.6 mils (#14)</td>
</tr>
<tr>
<td>Up to 3.0m (9.8 ft)</td>
<td>2.0 mils (#12)</td>
</tr>
<tr>
<td>Up to 5.0m (16.4 ft)</td>
<td>2.6 mils (#10)</td>
</tr>
<tr>
<td>Up to 6.0m (19.7 ft)</td>
<td>3.3 mils (#8)</td>
</tr>
</tbody>
</table>
**Antenna Requirements and Attachment**

**Antenna Requirements**

Your CobraMarine VHF radio requires an external marine antenna to send signals into the air and to receive them. The radio is arranged to use any of the popular marine VHF antennas, but it is up to you to choose which antenna to use.

Since it represents the link between your radio and the outside world, Cobra suggests you purchase the best quality antenna, coaxial cable and connectors you can. This is best accomplished with the advice and guidance of a knowledgeable dealer who can assess the variables involved with your particular boat and preferences.

**WARNING**

Compliance with FCC requirements for Radio Frequency Exposure is the responsibility of both the antenna installer and the radio operator.

**Safe Maximum Permissible Exposure (MPE) Radius**

To avoid health hazards from excessive exposure to RF energy, FCC OET Bulletin 65 establishes an MPE radius of 10 ft (3 m) for the maximum power of your radio with an antenna having a maximum power gain of 9 dBi.

This means that all persons must be at least 10 ft (3 m) away from the antenna when the radio is transmitting.

**Installation Requirements**

- An omnidirectional antenna with a gain not greater than 9 dBi must be mounted at least 16.4 ft (5 m) above the highest deck where people may be during radio transmissions, measured vertically from the lowest point of the antenna. This provides the minimum separation distance to comply with RF exposure requirements and is based on the MPE radius of 10 ft (3 m) plus the 6.6 ft (2 m) height of an adult.

- For vessels without structure to mount the antenna as described in A, it must be mounted as follows AND all persons must be outside the 10 ft (3 m) MPE radius during radio transmissions. The antenna must be mounted so that its lowest point is at least 3.3 ft (1 m) vertically above the heads of all persons during radio transmissions.

**WARNING**

Do not transmit when anyone is within the MPE radius of the antenna unless that person or persons are shielded from the antenna by a grounded metallic barrier. This is especially important on vessels with antennas mounted as described in B where no one may be within 9 ft (2.8 m) horizontally from the base of the antenna during transmissions.

**Antenna Lead Attachment**

Once the antenna is installed, the Coaxial Cable Lead can be attached to the coaxial cable socket at the back of the transceiver.

**NOTICE**

Attempting to transmit without an antenna attached will damage your CobraMarine VHF radio.
External Devices And Connections

Your CobraMarine VHF radio is set up to connect auxiliary devices for navigation, convenience, and added versatility. As is the case with the antenna, choosing these devices is best done with the advice and guidance of a knowledgeable dealer. Standard connectors are provided on the front and back of the transceiver.

Microphone Attachment
Connect the Microphone to the cord socket located at the right side of the front of the transceiver.

To Connect The Microphone Attachment:
1. Align the connector and push it firmly into the socket.
2. Tighten the captive nut to hold the connector in place.
3. Slide the waterproof sleeve over the nut until it seats in the recess around the socket.

External Speaker (Not Included)
An External Speaker can provide greater volume to hear messages than the speaker incorporated in the CobraMarine transceiver.

To Install An External Speaker:
Connect the speaker lead to the standard jack on the back of the transceiver.

Global Positioning System (GPS) Device (Not Included)
Cobra strongly recommends that you obtain and connect a GPS device to your CobraMarine VHF radio. By having a GPS connected, your position will be continuously indicated on the LCD and, most importantly, it will be included automatically in any DSC distress message you may need to send. That will take the “search” out of “search and rescue.”

FCC rules require the radio to prompt the user with visual and audible (beeps) alerts if a GPS is not connected or position information is not entered manually every four (4) hours.

To Install A GPS Device:
1. Install the GPS device in a convenient location according to its manufacturer’s directions.
2. Bond the NMEA out negative wire to the black wire of the GPS interface cable.
3. Bond the NMEA out positive wire to the red wire of the GPS interface cable.

**NOTE**
When bonding the wires, make sure connections are secure and properly insulated.

4. Connect the new combination cable to the GPS device and to the back of the transceiver.

**NOTE**
Satellite acquisition time is dependent on the GPS device.
Getting Started

Refer to the foldout on the front cover of this manual to identify the various controls and indicators on your radio.

Throughout this manual you will be instructed to press or to press and hold buttons on the transceiver or on the microphone. Press means a momentary press, then release; press and hold means to hold the button.

Tones And Alarms

When your CobraMarine VHF radio is On, you can expect to hear the following tones and alarms. The volume of these sounds is controlled by the circuitry in the radio and is not affected by the volume set with the On-Off Power/Volume knob.

Confirmation Tone
Single high-pitched beep confirms all button presses except the Talk button. It can be turned On or Off. See set-up routines on page 40.

Error Tone
Two low-pitched beeps indicate an invalid button press.

DSC Distress Alarm
High—low—high—low—high. Pause, then repeat. The volume of all alarms will increase after 10 seconds. Press any button to turn it Off.

NOTE
This alarm sounds only for DSC distress calls on Channel 70. It does not sound for voice calls on Channel 16 — you still must listen for those.

Distress Acknowledgement Alarm
High—low—high—low—high. Pause, then repeat. The volume of all alarms will increase after 10 seconds. Press any button to turn it Off.

DSC Routine Call Alarm
High—pause—high—pause—high. Long pause, then repeat. Press any button to turn it Off.

DSC Geographical Alarm
Loud, continuous, medium-pitched, high-low tones (warble) — sounds when a geographical call is received. Press any button to turn it Off.

DSC Position Request Alarm
Medium-loud, continuous, low-pitched series of closely spaced, four (4) beeps [three (3) short – one (1) long] groups — sounds when a POSITION REQUEST call is received. Press any button to turn it Off.

DSC Individual Alarm
High—pause—high—pause—high. Long pause, then repeat. Press any button to turn it Off.

Weather Alarm
Medium-loud, continuous, medium-pitched series of one-half (1/2) second beeps spaced one-half (1/2) second apart — sounds when weather alert is turned On and NOAA sends a 1050 Hz weather alert tone on the selected weather channel. Press any button to turn it Off.
### Getting Started

**Volume**

The **On-Off Power/Volume** knob on the transceiver controls the speaker volume. The volume adjustment applies only to what you hear from the speaker and does not affect the volume of your outgoing messages. That is controlled by the circuitry of your radio.

To **Increase The Volume:**
- Turn the **On-Off Power/Volume** knob clockwise.

To **Decrease The Volume:**
- Turn the **On-Off Power/Volume** knob counter-clockwise.

**Squelch**

**Squelch** control filters weak signals and radio frequency noise so that you can more clearly hear the signals you want. You can think of it as a variable barrier that blocks what you don’t want to hear.

To **Squelch Your Radio:**

1. With the **Squelch** knob turned fully counter-clockwise, turn the **On/Off/Volume** knob clockwise until you hear a hissing (noise) sound.
2. Turn the **Squelch** knob clockwise until the hissing sound stops.

Turning the **Squelch** knob further clockwise (higher bearier) will filter weak and medium strength signals until only the strongest signal can get through at the highest squelch setting.

**NOTE**

To receive Weaker Signals
- Turn the **Squelch** knob counterclockwise (lower bearier). If the squelch is set so that you can hear a continuous hissing sound, the scan and dual-watch functions will be blocked.

---

**Standby And Receive**

**Standby** mode is the usual mode for the radio whenever it is turned **On**.

From **Standby Mode**, **You Can:**

- Change your radio’s settings using set-up routines.
- Receive messages on the current channel as well as DSC messages.
- Receive NOAA alerts if **Weather Alert** mode is turned **On**.
- Switch to **Transmit** mode using the **Talk** button.

While the radio is in **Standby** mode, the **Receive** mode is entered whenever a strong enough signal to break squelch is sent to the radio. You will hear the message through whichever speakers are connected to the radio.

**To Change The Channel You Are Listening To**

**You Can Choose One (1) Of The Following:**

- Press the **Up/Down** buttons. This will take you to the next higher or lower VHF channel. For rapid advance, press and hold the **Up** or **Down** button.
- Press the **Channel 16/9** button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channels 16 and 9.
- Press the **Weather/UIC** button. This will toggle the radio between **Standby** mode and **Weather Radio** mode. When in **Weather Radio** mode, the **Up/Down** buttons will change the weather channel.

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**Volume**

The **On-Off Power/Volume** knob on the transceiver controls the speaker volume. The volume adjustment applies only to what you hear from the speaker and does not affect the volume of your outgoing messages. That is controlled by the circuitry of your radio.

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- Turn the **On-Off Power/Volume** knob clockwise.

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- Receive messages on the current channel as well as DSC messages.
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- Switch to **Transmit** mode using the **Talk** button.

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- Press the **Channel 16/9** button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channels 16 and 9.
- Press the **Weather/UIC** button. This will toggle the radio between **Standby** mode and **Weather Radio** mode. When in **Weather Radio** mode, the **Up/Down** buttons will change the weather channel.
Set-Up Routines

Settings Menu

The Settings menu in the CobraMarine VHF radio allows you to turn On and Off many of its features, to adjust other features to suit your preferences, and to enter your user MMSI number.

To Enter The Settings Menu:
Press and hold the Call/Set button.
The Settings menu will appear on the LCD.
After entering the Settings menu, you can scroll through it to make as many entries as you like.
Whenever the setting selection arrow appears in a feature portion of the menu, it will point to the setting that was in effect when you entered the menu.
When you are finished with changes, you can exit the Settings menu and return to Standby mode.

To Exit The Settings Menu:
1. Use the Up/Down buttons to scroll down to EXIT at the bottom of the menu.
2. With the arrow pointing to EXIT, press the Call/Set button to return the radio to Standby mode.

NOTE
Basic set-up routines are described here. For set-up routines that apply specifically to a particular function, they are included in the section for that function.

LCD Backlight (Lamp Adjust)
The LCD has a backlight lamp to make it visible in the dark. This lamp can be adjusted for brightness or turned Off.

To Adjust The Backlight Level:
1. Enter the Settings menu and scroll to LAMP ADJ (lamp adjustment) with the Up/Down buttons.
2. Press the Call/Set button and observe the current backlight setting — HIGH, MEDIUM, LOW or OFF.
3. Use the Up/Down buttons to switch to the setting you want.
4. Press the Call/Set button to select the backlight setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby.

When the backlight is turned On to any intensity, the lamp will be lit whenever the radio is On.

LCD Contrast (Contrast)
The LCD backlight will not be visible in daylight, but the LCD Contrast can be adjusted to make it easier to read in different light conditions.

To Change The Contrast:
1. Enter the Settings menu and scroll to CONTRAST with the Up/Down buttons.
2. Press the Call/Set button and observe the current contrast setting — a number between one (1) and 16.
3. Use the Up/Down buttons to change the number up or down.
4. Press the Call/Set button to select a contrast level.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby.
Set-Up Routines

Confirmation Tone (Key Tone)
The Confirmation Tone sounds when your CobraMarine VHF radio is turned On and to confirm all button presses except for the Talk button. If you would prefer not to hear the Confirmation Tone, you can turn it Off and On as you choose.

To Turn The Confirmation Tone On Or Off:
1. Enter the Settings menu and scroll to KEY TONE with the Up/Down buttons.
2. Press the Call/Set button and observe the current confirmation tone setting — ON or OFF.
3. Use the Up/Down buttons to switch to the setting you want.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby.

Time Offset
All VHF, DSC, and GPS activities use a 24-hour clock and Coordinated Universal Time (UTC) which was formerly known as Greenwich Mean Time (GMT). Time Offset uses your connected GPS to gather time inputs. For time inputs to be converted to local time, you need to enter the hour offset of your local time zone from Greenwich. (See world city time zone chart on page 24.)

To Change The Time Offset:
1. Enter the Settings menu and scroll to TIME OFFSET (time offset) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting.
3. Use the Up/Down buttons to change to the setting for your local time zone.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby.

NOTE
If you leave the time offset at zero (0), the LCD will show the time as UTC. If you enter the hour offset for your time zone, the LCD will show the local time. In either event, DSC messages will always be based on UTC.

U.S.A./International/Canada Channel Maps
Three (3) sets of VHF Channel Maps have been established for marine use in the U.S.A., Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on pages 14 through 23). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

To Set Your Radio For The Area In Which You Will Be Using It:
1. From Standby mode, press and hold the Weather/UIC button. The radio will shift one (1) channel map and the active channel map will show on the top line of the LCD.
2. Repeat step 1 to shift to the next channel map(s) in the sequence USA, INT (International), CAN (Canada) then back to USA.

The radio will return to Standby mode each time the button is released.
Voice Transmission

Transmit mode gives you the ability to communicate with safety services, other vessels, and shore stations. When you use this capability, be sure to follow the procedures and to observe the courtesies that govern its use so everyone benefits. (The tables on pages 14 through 23 will help you select the proper channels.)

Before pressing the Talk button to transmit a message, you should select the appropriate channel and transmit power output.

Channels

You can transmit voice messages on most VHF Channels. Refer to the VHF marine channel assignments on pages 14 through 23 to select a channel according to the type of message you are going to send.

To Change The Channel You Can Choose From One (1) Of The Following:

- Press the Up/Down buttons. This will take you to the next higher or lower VHF channel. (When on Channel 88A, the next higher channel is Channel 1 and vice versa.) For rapid advance, press and hold the Up or Down buttons. (The confirmation tone will sound only for each button press, not during rapid advance.)
- Press the Channel 16/9 button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channel 16 and Channel 9. Press and hold the Channel 16/9 button to return to Standby mode.

Transmit Power Output

Your radio can Transmit selectively at 1 or 25 watts of power. Cobra suggests you maintain the low power setting for short-range communications and to avoid overpowering nearby stations with your signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at 1 watt.

To Toggle Between The High And Low Power Modes:

Press the High/Low Power button. The LCD will show which mode is in effect.

Some channels are restricted to use at a maximum of one (1) watt. Your radio will automatically set the power to Low Power mode when you select those channels.

While using the U.S.A. channel map, if, in an emergency, you need to increase the output power on Channel 13 and Channel 67 for your signal to be heard, you can override the Low Power mode by pressing and holding the High/Low Power button.

Transmit A Message

To Transmit A Message:

1. Check to see that your unit is set to a proper channel for the type of message being sent.
2. Toggle to the low power setting by pressing the High/Low Power button.
3. With the microphone about two (2) inches [five (5) cm] from your mouth, press and hold the Talk button and speak into the microphone. TX (Transmit) displays on the LCD display.
4. Release the Talk button when you are finished speaking. To hear a response, the Talk button must be released.

NOTE

If the Talk button is held down for five (5) minutes, the radio will automatically cease transmitting to prevent unwanted signal generation. As soon as the Talk button is released, it can be pressed again to resume transmission.
Weather Radio And Alert

NOAA All Hazards/Weather Radio And Alert

NOAA broadcasts Weather information as described in the NOAA weather channels section on page 25 of this manual. You can listen to one (1) or two (2) of these receive-only channels at any time.

**NOTE**
Usually only one (1) or two (2) of the weather channels will be operating in any given location. You will need to select the channel with the strongest signal in your location. This is the channel the radio will scan for the weather alert signal.

To Listen To The Weather Channels:
1. From Standby mode, press the Weather/UIC button. The unit will enter the Weather mode and show it on the LCD.
2. Press the Up/Down buttons to change the weather channels — hold the button for fast advance.
3. To exit the Weather mode and return to Standby mode, press the Weather/UIC button again.

Weather Alert Set-Up

You must have Weather Alert mode turned On to benefit from the Weather Alert condition signal described in the NOAA weather channels section on page 25.

To Turn Weather Alert On:
1. Enter the Settings menu and scroll to WX ALERT (weather alert) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting — ON or OFF.
3. Use the Up/Down buttons to change to the setting.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby.

Advanced Operation

Weather Alert Signal

When NOAA broadcasts a Weather Alert signal and your radio is in the Weather Alert mode, you will hear a continuous audible tone and the radio will automatically switch to Weather Radio mode. The alert indicators will sound regardless of what channel you are operating on as soon as a NOAA alert signal is received.

When You Hear The Alert:
Press any key to turn Off the alert alarm and LCD indicator.

Advanced Operation

Cobra has incorporated several features in your CobraMarine VHF radio to give you quick access to the voice calling channels and to let you monitor more than one (1) channel at once.

Channel 16/9

This function gives you quick access to calling Channel 16 or Channel 9 from any operational mode.

To Switch To Channel 16 Or Channel 9:
1. Press the Channel 16/9 button to change to Channel 16.
2. Press the Channel 16/9 button again to change to Channel 9.

Additional presses of the Channel 16/9 button will toggle back and forth between the two (2) channels. To exit the Channel 16/9 mode and return to the previous channel, press and hold the Channel 16/9 button.
Advanced Operation

Dual-Watch

Dual-Watch gives you one (1) button access to scan the two (2) locations of most importance to you. Channel 16 will always be included as a scanned location. The remaining location will be the VHF channel in effect when you enter Dual-Watch mode.

NOTE

The radio must be squelched for dual-watch to function. See page 36 for squelch procedure.

To Enter Dual-Watch Mode:

1. In Standby mode, use the Up/Down buttons to go to the channel you want to add as the second location to be scanned.
2. Press the Dual-Watch button.

Dual-watch will be indicated on the LCD and the radio will scan between Channel 16 and the second dual-watch location you selected. A signal on any one (1) of the two (2) channels will stop the scan to allow you to listen to the traffic on the channel. The channel number will be displayed on the LCD.

To Exit Dual-Watch Mode:

Press the Dual-Watch button. The radio will return to Standby mode.

During Dual-Watch (while receiving an incoming transmission), You Can Choose From The Following:

- Press the Talk button to remain on that dual-watch location and return to Standby mode.
- Press the Up/Down buttons to resume scanning dual-watch locations.

If you do not press any buttons, your radio will automatically resume scanning dual-watch locations when the incoming transmission is complete.

During Dual-Watch (while not receiving a transmission):

Press the Talk button to communicate on the last dual-watch location scanned and return to Standby mode.

Scan

During Scan, the radio will rapidly switch from channel to channel through all the channels. Whenever any activity is detected, the radio will stop the scan for ten (10) seconds to allow you to listen briefly on that channel. It will then continue to scan unless you switch out of the Scan mode.

NOTE

The radio must be squelched for Scan mode to function. See page 36 for squelch procedure.

To Enter Scan:

From Standby mode, press the Scan button.

The radio will immediately begin to scan the entire channel map selected in the active channel map. SCAN will show on the LCD.

To Exit Scan:

From Scan mode, press the Scan button.

This will return the radio to Standby mode on the last scanned channel.

During Scan (while receiving an incoming transmission), You Can Choose From The Following:

- Press the Talk button to remain on that channel and end scanning. This will return the radio to Standby mode.
- Press the Up/Down buttons to resume scanning.

If you do not press any buttons within ten (10) seconds, your radio will automatically resume scanning.

During Scan (while not receiving a transmission):

Press the Talk button to communicate on the last channel scanned and return to Standby mode.
Digital Select Calling (DSC) Setup

Digital Selective Calling (DSC) uses digital signals to increase messaging range. This provides the most reliable message delivery per watt of output power. Digital signals are less susceptible to distortion from noise and atmospheric conditions than analog signals.

DSC equipped radios also interface with GPS and automate many operations for sending and receiving messages. This results in compact, accurate messages and less airwave congestion.

Setup procedures for all DSC features use the Setup menu. Refer to page 40 for information on entering and exiting the Setup menu.

User MMSI Number

The nine (9) digit MMSI number, similar to a telephone number, is a unique identifier for a vessel. DSC incorporates this number into every message that is Sent (Tx) or Received (Rx). Enter the MMSI number as soon as you receive your MMSI number from the issuing agency listed on page 9.

NOTE

The radio does not operate in the DSC mode until an official MMSI number is entered. An error tone will sound when attempting to operate in the DSC mode without an MMSI number.

NOTE

An MMSI number can only be entered one time. To create a new MMSI number, the unit must be reset by the dealer.

To Enter Your MMSI Number:

1. Enter the Settings menu and scroll to USER MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit under USER MMSI ID ENTRY.
3. Use the Up/Down buttons to scroll through the number list to that digit of your number.
4. Press the Call/Set button to select the digit and the blinking cursor will move to the next digit of the number.
5. Repeat steps 3 and 4 until all nine (9) digits of your MMSI number are entered.

NOTE

Press the High/Low Power button to backspace and erase the last selected number.

6. Check that you have entered the number correctly. The unit will ask you to re-enter your number to confirm.
7. Press and hold the Call/Set button to return to the Settings menu.
Digital Select Calling (DSC) Setup

To View Your MMSI Number At Any Time:
1. Enter the Settings menu and scroll to USER MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit of your already entered number under USER MMSI ID ENTRY.
3. Press and hold the WX/ESC button to return to the Settings menu.

To Enter A Group MMSI Number:
1. Enter the Settings menu and scroll to GROUP MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit under GROUP MMSI ID ENTRY.
3. Use the Up/Down buttons to scroll through the number list to that digit of your number.
4. Press the Call/Set button to select the digit and the blinking cursor will move to the next digit of the number.
5. Repeat steps 3 and 4 until all nine (9) digits of the group MMSI number are entered.

NOTE
Press the High/Low Power button to backspace and erase the last selected number.

6. Check that you have entered the number correctly. The unit will ask you to re-enter your number to confirm.
7. Press and hold the Call/Set button to return to the Settings menu.

The group MMSI is established by modifying the MMSI assigned to one (1) of the group members. The last digit of that member’s MMSI number is dropped and a zero (0) is inserted at the beginning. Example: Member MMSI number 366123456 becomes group MMSI number 0366123456.

If You Transfer Your Radio To A Different Vessel
Contact the MMSI issuing agency from which you obtained your number and change the information associated with your number to correspond to vessel in which it will be mounted.

Operating Your Radio

User MMSI ID Entry

Group MMSI Number
Nautical organizations such as yacht clubs and the organizers of events such as regattas can establish Group MMSIs. These allow a message to be sent automatically to all members of the group without having to call each one individually.

Group MMSIs can be entered and changed any time without resetting the radio. Each member of a group must enter the group MMSI number in their radio to receive group messages.

Operating Your Radio
Position Request Reply Type

The ability to send your position to another station is an added feature of DSC radios that have GPS attached. It is handy for rendezvous and rescue situations. Your CobraMarine VHF radio allows you to choose whether to have the radio automatically respond to all Position Requests it receives or to alert you to a Position Request and allow you to choose whether to respond or not — manual reply.

To Set The Position Request Reply Type:
1. Enter the Settings menu and scroll to POS RPLY (position reply) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting — AUTO or MANUAL.
3. Use the Up/Down buttons to change the setting.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.

Individual Directory

DSC calling allows you to call another vessel or station directly if you know its MMSI number. Your CobraMarine VHF radio allows you to store up to 10 names and their associated MMSI numbers for quick access.

To Enter Or Edit Names And MMSI Numbers In The Directory:
1. Enter the Settings menu and scroll to INDV DIR (individual directory) with the Up/Down buttons.
2. Press the Call/Set button to enter a memory location (1-10).
3. Use the Up/Down buttons to scroll through the memory locations to one you want to select.
4. Press the Call/Set button to select the memory location. The cursor will begin to blink at the first character under NAME.
5. Use the Up/Down buttons to scroll through the character list.
6. Press the Call/Set button to select a character. This will also move the blinking cursor to the next character under NAME.
7. Repeat steps 5 and 6 to enter additional characters — up to a maximum of nine (9) — for the name.

NOTE
Press the High/Low Power button to backspace and erase the last selected character.

8. After entering the name, press and hold the Call/Setting button to move the blinking cursor to the first character under MMSI.
9. Use the Up/Down buttons to scroll through the number list.
10. Press the Call/Set button to select the number and move the cursor to the next character under MMSI.
11. Repeat steps 9 and 10 until the nine (9) digit MMSI is entered.
12. Press and hold the Call/Set button to move to the next memory location or exit.
13. Select NEXT or EXIT with the Call/Set button.

If NEXT is selected, pressing the Call/Set button will move to the next memory location where another name can be entered by repeating steps 3 through 11. If EXIT is selected, pressing the Call/Set button will return you to the Settings menu.

You can enter a total of 10 names and MMSI numbers in the directory.
## Digital Select Calling (DSC) Operation

### DSC Operation

Sending DSC calls is done from menus similar to the Settings menu. Whereas entering the Settings menu required a press and hold of the Call/Set button, the sending menus appear with a press of the Distress button.

All received DSC calls will sound one (1) or another of the alarms to alert you to them. See pages 34 through 35 for descriptions of the different alarms. Pressing any button will turn off the alarm while maintaining the received call information on the LCD.

### Sending Distress Calls

Sending and receiving distress calls and acknowledgements on Channel 70 can be a lifesaver for mariners.

**NOTE**
The DSC call will:
- Sound the distress alarm at all receiving stations.
- Informs receiving stations of the sender's identity (MMSI).
- Informs receiving stations of the nature of the emergency.
- Informs receiving stations of sending position when a GPS device is connected or a position is manually entered.

DSC operation does not provide receiving stations with information like number of persons aboard or injuries. This specific information must be communicated by voice on Channel 16 to the station that acknowledges a DSC Distress call.

### To Send a DSC Distress Call:

1. **From Standby mode**, lift the spring-loaded red door on the transceiver and press the Distress button. The Distress menu displays with an arrow pointing to SEND. There are three (3) choices:
   - Send a distress call automatically, with your position, if you are connected to a GPS. Or send the call, without your position, if not connected to a GPS.
   - Include a Nature of Distress message with the distress call.
   - Abort the distress call process and return to Standby mode.

### Digital Select Calling (DSC) Operation

2. Choose one (1) of the following:

   **To Send An Automatic Distress Call:**
   - Press and hold the Distress button.

   **Include a Nature of Distress Message with Distress Call:**
   - a. Press and release the Distress button.
   - b. Press the Channel Up/Down buttons to manually select from the list of pre-programmed Nature of Distress calls — UNDEFINE, FIRE, FLOODING, GROUNDIN, COLLISION, MORE.
   - c. Press and hold the Distress button for three (3) seconds to transmit the distress signal.

   **Abort The Distress Call Process:**
   - If the Distress button is pressed by mistake or to discontinue resending an automatic distress message:
     - a. Press the Channel Up/Down buttons to move the arrow to EXIT.
     - b. Press the Distress button to return to Standby mode.

**NOTE**
You may also press the WX/ESC (escape) button to return to the Standby mode.

The Distress alarm sounds to confirm that the message is transmitted. At the end of the transmission, the radio maintains a watch on Channel 16 and Channel 70 for an acknowledgement. Press any button to turn Off the alarm and return to Standby mode.

- If an acknowledgement is received, the Distress alarm sounds again and the responding party's MMSI number displays on the LCD.
- If no acknowledgement is received, the radio resends the message at approximately four (4) minute intervals until an acknowledgement is received or the Distress call is aborted.
Receiving Distress Calls
When a vessel is within range of a DSC Distress call, the radio receives the call, sounds the Distress alarm, and switches to Channel 16. All DSC calls that are received will sound one (1) alert alarm. See pages 36-37 for descriptions of the different alarms. Press any button to turn Off the alarm. The received call information continues to display on the LCD.

When A Distress Call Is Heard:
1. Press any button to turn Off the alarm and return to Standby mode.
2. Read and write down the distress information on the LCD (there may or may not be position data shown), then determine whether you should answer the call.
3. Respond, if appropriate, by pressing and holding the Talk button to transmit on Channel 16.

NOTE
Your radio will automatically switch to Channel 16 upon receiving a DSC distress call.

Regarding Distress Relay Calls
This radio cannot send Distress Relay calls. Only large ships and shore stations, with specially equipped radios, can send Distress Relay calls.

Receiving Distress Relay Calls
This radio does respond to a received Distress Relay call just as it responds to a Distress call.

Sending An All Ships Calls
Use DSC All Ships call is used for the same urgency and safety purposes as the Pan and Securite voice calls as well as to send routine messages to all stations at once. The DSC All Ships call reaches all stations within range of your radio. Use the DSC All Ships call if you have an urgent, but not life-threatening, situation or a safety warning to broadcast to all vessels in your area.

To Send An All Ships Call:
1. Press the Call/Set button to enter the Call Send menu.
2. Use the Up/Down buttons to scroll to ALL SHIPS.
3. Press the Call/Set button to move to the message type menu.
4. Use the Up/Down buttons to select a message type — URGENCY or SAFETY.
5. Press the Call/Set button to send the message.

After urgency and safety calls, the radio will switch to Channel 16 and wait for you to press the Talk button to send the urgent or safety message by voice.

DSC equipped radios that receive your message will be automatically switched to Channel 16.

To return to Standby mode without sending a message, use the Up/Down buttons to scroll to EXIT and press the Call/Set button.
Receiving An All Ships Call
All Ships calls sent by stations within range of your radio will sound the distress alarm on your radio and switch your radio to Channel 16.

When An All Ships Call Is Heard:
1. Press any button to turn Off the alarm and return to Standby mode.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming all ships call. Some All Ships calls have channel information.

Sending A Geographical Call
Your radio cannot send Geographical calls. Only large ships and shore stations with specially equipped radios can send Geographical calls.

Receiving A Geographical Call
Geographical calls are sent by specially equipped radios to all stations in a particular geographical area to alert only those stations of the call and not stations in unaffected areas. If you are in an area to which a Geographical call is made, the radio will sound the geographical alarm and switch to the channel chosen by the transmitting station.

When A Geographical Call Sounds:
1. Press any button to turn Off the alarm.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call in case you will want to respond.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming Geographical call.
4. Press one (1) of the following three (3) buttons to switch from geographical call receive to Standby mode: Call/Set button or Channel 16/9 button.

Sending An Individual Call
The DSC Individual call feature allows you to notify one (1), and only one (1), station that you want to communicate with that station. The DSC Individual call does not alert all other stations within range.

To Send An Individual Call:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to INDIVIDUAL.
4. Press the Call/Set button to move to the individual directory.
5. Use the Up/Down buttons to select the name you want to call from the directory.
6. Press the Call/Set button to send the message or return to Standby mode if EXIT was chosen.

If the radio you are calling sends back an automatic DSC response of “able to comply,” the individual alarm will sound. Wait for a voice message from the called station.

If the called radio does not send an “able to comply” response, your radio will wait eight (8) seconds and resend the message.

If an “unable to comply” response or no reply is received, your radio will go to the Unavailable menu.

At the Unavailable menu, you can choose SEND or EXIT with the Up/Down buttons. If you choose SEND, your radio will restart the individual call. If you choose EXIT, you will be returned to the individual location on the Call Send menu.
Receiving An Individual Call
When another station makes an Individual call to your radio, the individual alarm will sound, the caller will be identified on the LCD, and your radio will be switched to the channel selected by the caller. Press any button to turn Off the alarm.

To Receive An Individual Call:
Press the Talk button and greet the caller.

Sending A Group Call
Sending a Group call is very similar to sending an individual call, except that the group MMSI is used and the resend and DSC responses do not apply. See page XX for creating and entering a group MMSI.

To Send A Group Call:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to GROUP.
4. Press the Call/Set button to move to the send or exit menu.
5. Use the Up/Down buttons to select SEND or EXIT.
6. Press the Call/Set button to send the message or return to the Call Send menu if EXIT was chosen.

All radios will be switched to the channel selected in step 1. Press and hold the Talk button to send your voice message to everyone in the group.

Anyone in the group can now also transmit on that channel.

Receiving A Group Call
When another station makes a Group call to your radio, the individual alarm will sound, the caller will be identified on the LCD, and your radio will be switched to the channel selected by the caller, just as for an individual call. Press any button to turn Off the alarm.

To Receive A Group Call:
Press the Talk button and respond only if appropriate.

Sending A Position Request
Position Request mode enables a DSC radio to obtain the position (latitude and longitude) of a station that has a GPS device connected to the DSC radio at that station. In most cases, a reply will be forthcoming. If for some reason, your request is not acknowledged in five (5) minutes, the user will be prompted to Resend the request or exit the menu.

To Request The Position Of Another Station:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to POS REQST (position request) on the menu.
4. Press the Call/Set button to enter the Individual Directory menu.
5. Use the Up/Down buttons to scroll to the name of the station whose position you want to request.
6. Press the Call/Set button. Your radio will send the position request and there will be one (1) of three (3) possible responses:
   - You will receive the position.
   - You will receive a no position data response, meaning the station you queried is not connected to a GPS device and cannot send its position.
   - You will receive a no reply response, meaning the operator of that station has chosen not to reply to your request.
Receiving A Position Request

When you went through the DSC set-up process, you set a position request reply type. (See page 52 to change your setting.) Depending on the setting you chose, when a Position Request message is received, your radio will enter either:

- The **Auto Reply** mode.
- The **Manual Reply** mode.

### When The Radio Is In Auto Reply Mode:

A position request will sound the position request alarm and show the name of the requesting station on the LCD. Your radio will automatically respond.

- If you have a GPS connected to your radio, it will send your position.
- If you do not have a GPS device connected, it will show **NO POS DATA**.

Press any button to silence the alarm and exit the display.

### When The Radio Is In The Manual Reply Mode:

A position request message will sound the position request alarm and show the name of the requesting station. You can choose to:

- **Reply** and send your position.
- **Exit** without sending your position.

#### If You Choose To Reply With Your Position:

1. Use the Up/Down buttons to select **REPLY**.
2. Press the Call/Set button to send your position.
3. Press any button to return to **Standby** mode.

#### If You Choose Not To Reply:

1. Use the Up/Down buttons to scroll to **EXIT**.
2. Press the Call/Set button to return to **Standby** mode without sending your position.

---

Sending A Position Request

Choose one (1) of the following:

**If You Receive A Position:**

If you have noted the station's position, the requested position with the station name and MMSI will show on your screen.

Press the Call/Set button to return to **Standby** mode after you have noted the station's position.

**If The Station You Called Cannot Send Its Position:**

If the station you called did not have GPS, it will show **NO POS DATA** (no position data) on your screen.

1. Press the Call/Set button to return to the **Individual Directory** menu.
2. Use the Up/Down buttons to scroll to **EXIT**.
3. Press the Call/Set button to return to the **Call Send** menu.
4. Use the Up/Down buttons to scroll to **EXIT**.
5. Press the Call/Set button to return to **Standby** mode.

**If The Station You Called Chose Not To Reply:**

If the station you called chose not to reply, it will show **NO REPLY** on your screen.

You will have two (2) choices:

- **RESEND** the request.
- **EXIT** the Position Request mode.

**To Resend Your Position Request:**

1. Use the Up/Down buttons to scroll to **RESEND**.
2. Press the Call/Set button.

**To Exit The Position Request Mode:**

1. Use the Up/Down buttons to scroll to **EXIT**.
2. Press the Call/Set button to return to the **Individual Directory** menu.
3. Use the Up/Down buttons to scroll to **EXIT**.
4. Press the Call/Set button to return to the **Call Send** menu.
5. Use the Up/Down buttons to scroll to **EXIT**.
6. Press the Call/Set button to return to **Standby** mode.
Digital Select Calling (DSC) Operation

Sending A Position Send

Position Send uses your connected GPS in similar fashion to the position request function, except that you initiate the activity to let another station know where you are.

To Send A Position Send Message:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to POS SEND (position send).
4. Press the Call/Set button to enter the individual directory.
5. Use the Up/Down buttons to select the station to which you want to send your position.
6. Press the Call/Set button to send your position.

After your position is sent, the LCD will show POS SEND (position send). You will have two (2) choices.

I Resend your position to the same station.
I Exit from Position Send mode.

To Resend Your Position:
1. Use the Up/Down buttons to select SEND.
2. Press the Call/Set button to resend your position.

To Exit From The Position Send Mode:
1. Use the Up/Down buttons to select EXIT.
2. Press the Call/Set button to return to the Call Send menu.

Receiving A Position Send

When another station sends you its position in Position Send mode, the individual alarm will sound and the station’s name and position will be shown on the LCD. Press any button to turn Off the alarm and return to Standby mode.

Call Log and Distress Log

Call Log functions similarly to the caller ID function on your telephone. It will capture the caller’s MMSI identification number and any other data included in a DSC message.

NOTE
The call waiting memory can hold up to 20 messages. Once the memory becomes full, each new call will erase the oldest call information on a first-in first-out basis.

To Review Call Log Messages Received While In DSC Standby Mode:
1. From Standby mode, press the Call/Set button to enter the Call Send menu.
2. Use the Up/Down buttons to scroll to CALLLOG
3. Press the Call/Set button to enter the Call Log mode.

NOTE
The fourth line will show the type of message.

4. Use the Up/Down buttons to move from message to message in the call log memory.
5. Press the Call/Set button to return to Standby mode.

To Clear Messages From The Call Log Memory:
1. From Standby mode, press the Call/Set button to enter the Call Send menu.
2. Use the Up/Down buttons to scroll to CALLLOG (call waiting).
3. Press the Call/Set button to enter the Call Log mode.

NOTE
The fourth line will show the type of message.

4. Use the Up/Down buttons to select the message you want to delete.
5. Press and hold the Memory Scan/Memory Clear button for one (1) second or more. Repeat steps 4 through 5 to delete additional messages.
6. Press the Call/Set button to return to Standby mode.
## Maintenance

Very little maintenance is required to keep your CobraMarine VHF radio in good operating condition.
- Keep the radio clean by wiping with a soft cloth and mild detergent. Rinse with fresh water. Do not use solvents or harsh or abrasive cleaners, which could damage the case or scratch the LCD screen.
- If the radio is exposed to salt water, rinse it in fresh water at least once a day to prevent build-up of salt deposits, which could interfere with button operation.

## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Solution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display on LCD when radio is turned On</td>
<td>Improper power connection</td>
<td>Insure power connections are proper and secure</td>
</tr>
<tr>
<td>Will transmit at one (1) watt, but not at 25 watts</td>
<td>Selected channel is limited to one (1) watt</td>
<td>Switch to another channel</td>
</tr>
<tr>
<td>Will not transmit</td>
<td>Selected channel is limited to receive only</td>
<td>Switch to another channel</td>
</tr>
<tr>
<td>No sound from speaker</td>
<td>Volume level is too low or squelch level is too deep</td>
<td>Readjust volume and squelch</td>
</tr>
<tr>
<td>No answer to calls</td>
<td>Out of range of other station</td>
<td>Switch to high power (25 watts) or move closer</td>
</tr>
<tr>
<td>DSC distress cannot be sent</td>
<td>MMSI (DSC self-identification) number is not entered</td>
<td>Enter your MMSI number</td>
</tr>
</tbody>
</table>

## Specifications

### General
- **Number of Channels**: All U.S.A., Canadian, International and all NOAA Weather Channels
- **Channel Spacing**: 25 kHz
- **Modulation**: 5 kHz Max.
- **Input Voltage**: 13.8 VDC
- **Current Drain**:
  - Stand-by: 20 mA
  - Receive: 200 mA
  - Transmit: 5A @ High power, 1A @ Low
- **Temperature Range**: -15˚ C to +55˚ C
- **Unit Dimensions**: 6.25” x 2.25” x 7.125” (15.9 cm x 5.7 cm x 18 cm)
- **Unit Weight**: 2 lbs., 6.8 oz. (1100 g)

### Receiver
- **Frequency Range**: 156.050 to 163.275 MHz
- **Receiver Type**: Double Conversion Super-Heterodyne
- **Sensitivity**:
  - 20 dB Quieting: 0.35 uV
  - 12 dB Sinad: 0.30 uV
- **AF Output**: 4 Watts @ 8 Ohms

### Transmitter
- **Frequency Range**: TX 156.025 to 157.425 MHz
- **RF Output Power**: 1 and 25 Watts
- **Spurious Emissions**: -60 dB High, -55 dB Low
- **Microphone Type**: Electret
- **Frequency Stability**: +/-10 ppm
- **FM Hum and Noise**: 40 dB
VHF Marine Channel Assignments

Three (3) sets of VHF channels have been established for marine use in the U.S.A., Canada and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on the following pages). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose. The following is a brief outline of the channel assignments in the U.S.A. Channel Map.

Distress, Safety, and Calling
Channel 16
Getting the attention of another station (calling) or in emergencies (distress and safety).

Calling
Channel 9
General-purpose (non-emergency) calling by non-commercial vessels. Recreational boaters are urged to use this channel to reduce congestion on Channel 16.

Intership Safety
Channel 6
Ship-to-ship safety messages and for search and rescue messages to Coast Guard ships and aircraft.

Coast Guard Liaison
Channel 22A
To talk to the Coast Guard, Canadian Coast Guard (non-emergency) after making contact on Channel 16.

Non-Commercial
Channels 68*, 69, 71, 72, 78A, 79A*, 80A*
Working channels for small vessels. Messages must be about needs of the vessel, such as fishing reports, berthing and rendezvous. Use Channel 72 only for ship-to-ship messages.

Commercial
Channels 1A, 7A, 8, 9, 10, 11, 18A, 19A, 63A, 67, 72, 79A, 80A, 88A*
Working channels for working ships only. Messages must be about business or needs of the ship. Use Channels 8, 67, 72 and 88A only for ship-to-ship messages.
**Appendix**

**VHF Marine Channel Assignments**

### Public Correspondence (Marine Operator)
**Channels 24, 25, 26, 27, 28, 60, 61, 84, 84A, 85, 85A, 86, 86A, 87, 87A, 88**
For calls to marine operators at public coast stations. You can make and receive telephone calls through these stations.

### Port Operations
**Channels 1A*, 5A*, 12*, 14*, 18, 19, 20A, 21, 22, 63A*, 65A, 66A, 73, 74, 75, 76, 77*, 79, 80, 81, 82**
Used for directing the movement of ships in or near ports, locks or waterways. Messages must be about operational handling, movement and safety of ships.

### Navigational
**Channels 13, 67**
Channels are available to all vessels. Messages must be about navigation, including passing or meeting other vessels. These are also the main working channels for most locks and drawbridges. You must keep your messages short and power output at no more than 1 watt.

### Maritime Control
**Channel 17**
For talking to vessels and coast stations operated by state or local governments. Messages must be about regulation and control, boating activities, or assistance.

### Digital Selective Calling
**Channel 70**
This channel is set aside for distress, safety and general calling using only digital selective calling techniques. Voice communication is prohibited; your radio cannot transmit voice messages on this channel.

### Weather
**Channels Wx 1 Thru 10**
Receive-only channels for NOAA and Canadian weather broadcasts. You cannot transmit on these channels.

---

**Asignaciones de canales (Español)**

### Correspondencia pública (operador marítimo)
**Canales 24, 25, 26, 27, 28, 60, 61, 84, 84A, 85, 85A, 86, 86A, 87, 87A, 88**
Para llamadas a operadores marítimos en estaciones costeras públicas. Usted puede realizar y recibir llamadas telefónicas a través de estas estaciones.

### Operaciones portuarias
**Canales 1A*, 5A*, 12*, 14*, 18, 19, 20A, 21, 22, 63A*, 65A, 66A, 73, 74, 75, 76, 77*, 79, 80, 81, 82**
Usados para dirigir el movimiento de las embarcaciones dentro de áreas portuarias, esclusas o canales. Los mensajes deberán estar relacionados con maniobras operacionales, movimientos y seguridad de las embarcaciones.

### Navegación
**Canales 13, 67**
Estos canales están disponibles para todas las embarcaciones. Los mensajes deberán estar relacionados con la navegación, incluidos las maniobras para pasar o alcanzar otras embarcaciones. Éstos también son los principales canales activos para la mayoría de las esclusas y puentes levadizos. Usted deberá transmitir mensajes cortos y mantener la potencia de salida en un vatio como máximo.

### Control marítimo
**Canal 17**
Para comunicarse con embarcaciones y estaciones costeras operadas por entidades gubernamentales locales o estatales. Los mensajes deberán estar relacionados con regulación y control, asistencia o actividades de navegación.

### Llamadas selectivas digitales
**Canal 70**
Este canal está reservado para solicitudes de auxilio, seguridad y llamadas de carácter general que usen solamente técnicas de llamadas selectivas digitales. Las comunicaciones verbales están prohibidas; el radio no puede transmitir mensajes de voz por este canal.

### Meteorología
**Canales Wx 1 a 10**
Canales de recepción únicamente para difusión de información meteorológica NOAA y canadienses. Usted no puede transmitir por estos canales.

---

**NOTE**
- * These channels are restricted to the listed uses in certain parts of the country or for certain types of users only. Consult FCC rules or a knowledgeable radio operator before using them.
## VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency</th>
<th>Power Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>USA EE.UU.</td>
<td>Transmit.</td>
<td>Receive</td>
</tr>
<tr>
<td>01</td>
<td>•</td>
<td>156.050</td>
<td>160.650</td>
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<tr>
<td>01A</td>
<td>•</td>
<td>156.050</td>
<td>156.050</td>
</tr>
<tr>
<td>02</td>
<td>•</td>
<td>156.100</td>
<td>160.700</td>
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</tr>
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<td>04A</td>
<td>•</td>
<td>156.200</td>
<td>156.200</td>
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<tr>
<td>05</td>
<td>•</td>
<td>156.250</td>
<td>160.850</td>
</tr>
<tr>
<td>05A</td>
<td>•</td>
<td>156.250</td>
<td>156.250</td>
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<tr>
<td>06</td>
<td>•</td>
<td>156.300</td>
<td>156.300</td>
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<tr>
<td>07</td>
<td>•</td>
<td>156.350</td>
<td>160.950</td>
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<td>07A</td>
<td>•</td>
<td>156.350</td>
<td>156.350</td>
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<tr>
<td>08</td>
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<td>09</td>
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<td>12</td>
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<td>156.600</td>
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</tr>
<tr>
<td>13</td>
<td>•</td>
<td>156.650</td>
<td>156.650</td>
</tr>
</tbody>
</table>

### Channel Use (English)

- **Public Correspondence (Marine Operator)**
- **Port Operations and Commercial, VTS in selected areas**
- **Public Correspondence (Marine Operator)**
- **Public Correspondence (Marine Operator)**
- **Government Only**
- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
- **West Coast (Coast Guard Only); East Coast (Commercial Fishing)**
- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
- **Port Operations, VTS in selected areas**
- **Intership Safety**
- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
- **Commercial**
- **Commercial (Intership Only)**
- **Boater Calling Channel, Non-Commercial (Recreational)**
- **Commercial**
- **Commercial, VTS in selected areas**
- **Port Operations, VTS in selected areas**
- **Intership Navigation Safety (Bridge-to-Bridge)**

### Power Limits

- **1 watt USA and CAN**

In U.S. waters, large vessels maintain a listening watch on this channel.

---

**Note:**

- **1 watt USA and CAN**
- **1 vatio EE.UU. y Canadá**

---

**Channel Use (Spanish)**

<table>
<thead>
<tr>
<th>Channel Use (Spanish)</th>
<th>Uso de canales (Español)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Correspondence (Marine Operator)</td>
<td>Correspondencia pública (operador marítimo)</td>
</tr>
<tr>
<td>Port Operations and Commercial, VTS in selected areas</td>
<td>Operaciones portuarias y comerciales; VTS en áreas selectas</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator)</td>
<td>Correspondencia pública (operador marítimo)</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator)</td>
<td>Correspondencia pública (operador marítimo)</td>
</tr>
<tr>
<td>Government Only</td>
<td>Entidades gubernamentales solamente</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo) operaciones portuarias,movimiento de embarcaciones</td>
</tr>
<tr>
<td>West Coast (Coast Guard Only); East Coast (Commercial Fishing)</td>
<td>Costa occidental (guardia costera solamente); Costa oriental (pesca comercial)</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo) operaciones portuarias,movimiento de embarcaciones</td>
</tr>
<tr>
<td>Port Operations, VTS in selected areas</td>
<td>Operaciones portuarias; VTS en áreas selectas</td>
</tr>
<tr>
<td>Intership Safety</td>
<td>Seguridad entre embarcaciones</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo) operaciones portuarias,movimiento de embarcaciones</td>
</tr>
<tr>
<td>Commercial</td>
<td>Comerciales</td>
</tr>
<tr>
<td>Commercial (Intership Only)</td>
<td>Canal de llamada de la tripulación, no comercial (recreativo)</td>
</tr>
<tr>
<td>Commercial</td>
<td>Comerciales</td>
</tr>
<tr>
<td>Commercial, VTS in selected areas</td>
<td>Comercial; VTS en áreas selectas</td>
</tr>
<tr>
<td>Port Operations, VTS in selected areas</td>
<td>Operaciones portuarias; VTS en áreas selectas</td>
</tr>
<tr>
<td>Intership Navigation Safety (Bridge-to-Bridge)</td>
<td>Seguridad marítima entre embarcaciones (de puente a puente a puente de mando). En aguas estadounidenses, las grandes embarcaciones se mantienen vigilantes con sus radios sintonizados en este canal</td>
</tr>
</tbody>
</table>
### VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency Transmission</th>
<th>Frequency Reception</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>•</td>
<td>156.700</td>
<td>156.700</td>
</tr>
<tr>
<td>15</td>
<td>•</td>
<td>Rx Only</td>
<td>156.750</td>
</tr>
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#### Channel Use (English)

<table>
<thead>
<tr>
<th>Channel Use (English)</th>
<th>Uso de canales (Español)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Operations, VTS in selected areas</td>
<td>Operaciones portuarias; VTS en áreas selectas</td>
</tr>
<tr>
<td>Environmental (Receive Only)</td>
<td>Medioambiental (recepción solamente).</td>
</tr>
<tr>
<td>Canada (EPIRB Buoys Only); International (On-Board Communication)</td>
<td>Canadá (boyas de EPIRB solamente); Internacional (comunicación de a bordo)</td>
</tr>
<tr>
<td>International Distress, Safety and Calling</td>
<td>Llamadas, seguridad y solicitud de auxilio internacional</td>
</tr>
<tr>
<td>State Controlled (U.S.A. Only)</td>
<td>Controlado a nivel estatal (EE.UU. solamente)</td>
</tr>
<tr>
<td>Port Operations, Ship Movement</td>
<td>Operaciones portuarias, movimiento de embarcaciones</td>
</tr>
<tr>
<td>Commercial</td>
<td>Comerciales</td>
</tr>
<tr>
<td>Port Operations, Ship Movement</td>
<td>Operaciones portuarias, movimiento de embarcaciones</td>
</tr>
<tr>
<td>Commercial</td>
<td>Comerciales</td>
</tr>
<tr>
<td>Canada (Coast Guard Only); International (Port Operations, Ship Movement)</td>
<td>Canadá (guardia costera solamente); Internacional (operaciones portuarias, movimiento de embarcaciones)</td>
</tr>
<tr>
<td>U.S. (Government Only); Canada (Coast Guard Only)</td>
<td>EE.UU. (entidades gubernamentales solamente); Canadá (guarda costera solamente)</td>
</tr>
<tr>
<td>Coast Guard Only – Weather Broadcasts</td>
<td>Solamente Guardacostas – Transmisiones Meteorológicas</td>
</tr>
<tr>
<td>Port Operations, Ship Movement</td>
<td>Operaciones portuarias, movimiento de embarcaciones</td>
</tr>
<tr>
<td>U.S. and Canadian Coast Guard Liaison and Maritime Safety Information Broadcasts that are announced on Channel 16</td>
<td>Enlace entre las guardias costeras estadounidenses y canadienses, y difusión de información sobre seguridad marítima anunciada por el canal 16</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator), Government Only</td>
<td>Correspondencia pública (operador marítimo); Entidades gubernamentales solamente</td>
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# VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency</th>
<th>Power Limits</th>
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<td>USA</td>
<td>Int'l</td>
<td>Canada</td>
</tr>
<tr>
<td>24</td>
<td>•</td>
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<td>•</td>
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</tr>
<tr>
<td>25B</td>
<td>•</td>
<td>•</td>
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</tr>
<tr>
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<td>•</td>
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</tr>
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<td>61A</td>
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</tr>
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<td>•</td>
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</tr>
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### VHF Marine Channel Assignments

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<th>Frequency</th>
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<th>Int'l</th>
<th>Canada</th>
<th>Canada</th>
<th>Receiver</th>
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<tr>
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<td></td>
<td></td>
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<tr>
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<td>157.175</td>
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<td></td>
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<td>157.175</td>
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<tr>
<td>83B</td>
<td>157.175</td>
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<td></td>
<td>RX only</td>
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</tr>
<tr>
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<td>157.225</td>
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<td>157.325</td>
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<td></td>
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<td>87A</td>
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<td>157.425</td>
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<td></td>
<td></td>
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<td>157.425</td>
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</tbody>
</table>
VHF Marine Channel Assignments (English)

NOTE
Many of the plain-numbered channels, such as 01, 02 and 03, transmit and receive on different frequencies. This is termed duplex operation. The rest of the plain-numbered channels and all of the A channels, such as 01A, 03A and 04A, transmit and receive on a single frequency, which is termed simplex operation. Your radio automatically adjusts to these conditions. When in simplex operation, the A icon will appear on the LCD (see illustration on page A3).

NOTE
All channels are preprogrammed at the factory according to international regulations and those of the FCC (U.S.A.) and Industry Canada (Canada). They cannot be altered by the user nor can modes of operation be changed between simplex and duplex.

Weather Channel Assignments
Asignaciones de canales meteorológicos

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>RX Frequency MHz</th>
<th>Weather Channel</th>
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<tbody>
<tr>
<td>1</td>
<td>162.550</td>
<td>NOAA</td>
</tr>
<tr>
<td>2</td>
<td>162.400</td>
<td>NOAA</td>
</tr>
<tr>
<td>3</td>
<td>162.475</td>
<td>NOAA</td>
</tr>
<tr>
<td>4</td>
<td>162.425</td>
<td>NOAA</td>
</tr>
<tr>
<td>5</td>
<td>162.450</td>
<td>NOAA</td>
</tr>
<tr>
<td>6</td>
<td>162.500</td>
<td>NOAA</td>
</tr>
<tr>
<td>7</td>
<td>162.525</td>
<td>NOAA</td>
</tr>
<tr>
<td>8</td>
<td>161.650</td>
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<td>161.775</td>
<td>Canada</td>
</tr>
<tr>
<td>10</td>
<td>163.275</td>
<td>NOAA</td>
</tr>
</tbody>
</table>

Asignación de canales de VHF para radiocomunicación marítima (Español)

NOTA
Muchos de los canales de números simples, como 01, 02 y 03, transmiten y reciben en diferentes frecuencias. A esto se le llama operación dúplex. El resto de los canales de números simples y todos los canales A, como 01A, 03A y 04A, transmiten y reciben en una sola frecuencia, a la que se le llama operación simple (simplex). Su radio se ajusta automáticamente a estas condiciones. Cuando esté en operación simple, el icono A aparecerá en la pantalla de cristal líquido (vea la ilustración de la página A3).

NOTA
Todos los canales vienen programados previamente de fábrica conforme a los reglamentos internacionales y a los de la FCC (EE. UU) e Industry Canada (Canadá). No pueden ser alterados por el usuario, así como tampoco pueden cambiarse los modos de operación entre simple y dúplex.
### World City Time Zones

In order to set correct local time as compared to different World City Time Zones, enter the hour "offset" as listed below. The correct local time appears on the VHF for Cities all over the world. See page 43 for setup information.

<table>
<thead>
<tr>
<th>Longitudinal Zone</th>
<th>Offset</th>
<th>City</th>
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</thead>
<tbody>
<tr>
<td>E172.50 to W172.50</td>
<td>-12</td>
<td>IDLW (International Date Line West)</td>
</tr>
<tr>
<td>W172.50 to W157.50</td>
<td>-11</td>
<td>Nome</td>
</tr>
<tr>
<td>W157.50 to W142.50</td>
<td>-10</td>
<td>Honolulu</td>
</tr>
<tr>
<td>W142.50 to W127.50</td>
<td>-9</td>
<td>Yukon STD</td>
</tr>
<tr>
<td>W127.50 to W112.50</td>
<td>-8</td>
<td>Los Angeles STD</td>
</tr>
<tr>
<td>W112.50 to W097.50</td>
<td>-7</td>
<td>Denver STD</td>
</tr>
<tr>
<td>W097.50 to W082.50</td>
<td>-6</td>
<td>Chicago STD</td>
</tr>
<tr>
<td>W082.50 to W067.50</td>
<td>-5</td>
<td>New York STD</td>
</tr>
<tr>
<td>W067.50 to W052.50</td>
<td>-4</td>
<td>Caracas</td>
</tr>
<tr>
<td>W052.50 to W037.50</td>
<td>-3</td>
<td>Rio de Janeiro</td>
</tr>
<tr>
<td>W037.50 to W022.50</td>
<td>-2</td>
<td>Fernando de Noronha</td>
</tr>
<tr>
<td>W022.50 to W007.50</td>
<td>-1</td>
<td>Azores Islands</td>
</tr>
<tr>
<td>W007.50 to E007.50 GMT</td>
<td>+0</td>
<td>London</td>
</tr>
<tr>
<td>E007.50 to E022.50</td>
<td>+1</td>
<td>Rome</td>
</tr>
<tr>
<td>E022.50 to E037.50</td>
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<td>E067.50 to E082.50</td>
<td>+5</td>
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</tr>
<tr>
<td>E082.50 to E097.50</td>
<td>+6</td>
<td>Dhuburi</td>
</tr>
<tr>
<td>E097.50 to E112.50</td>
<td>+7</td>
<td>Bangkok</td>
</tr>
<tr>
<td>E112.50 to E127.50</td>
<td>+8</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>E127.50 to E142.50</td>
<td>+9</td>
<td>Tokyo</td>
</tr>
<tr>
<td>E142.50 to E157.50</td>
<td>+10</td>
<td>Sydney</td>
</tr>
<tr>
<td>E157.50 to E172.50</td>
<td>+11</td>
<td>Solomon Islands</td>
</tr>
<tr>
<td>E172.50 to W172.50</td>
<td>+12</td>
<td>Auckland</td>
</tr>
</tbody>
</table>

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**Limited 3-Year Warranty**

**For Products Purchased In The U.S.A.**

Cobra Electronics Corporation warrants that its CobraMarine VHF radio, and the component parts thereof, will be free of defects in workmanship and materials for a period of three (3) years from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Cobra will, without charge, repair or replace, at its option, defective radios, products or component parts upon delivery to the Cobra Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra’s expense, if the product is repaired or replaced under warranty. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

**Exclusions: This limited warranty does not apply:**

1. To any product damaged by accident.
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
3. If the serial number has been altered, defaced, or removed.
4. If the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. Cobra shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

**For Products Purchased Outside The U.S.A.**

Please contact your local dealer for warranty information.

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**Trademark Acknowledgement**

Cobra®, CobraMarine®, Nothing Comes Close to a Cobra®, and the snake design are registered trademarks of Cobra Electronics Corporation, USA.

Cobra Electronics Corporation™ is a trademark of Cobra Electronics Corporation, USA.
Product Service

If you have any questions about operation or installing your new CobraMarine VHF product, or if you are missing parts...

Please call Cobra first! DO NOT RETURN THIS PRODUCT TO THE STORE!
See customer assistance on page A1.

If your product should require factory service, please call Cobra first before sending your radio. This will ensure the fastest turn-around time on your repair. You may be asked to send your radio to the Cobra factory. It will be necessary to furnish the following to have the product serviced and returned:

1. For warranty repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon of a sales receipt. If you send the original receipt, it cannot be returned.
2. Send the entire product.
3. Enclose a description of what is happening with the radio. Include a typed or clearly printed name and address of where the radio is to be returned.
4. Pack radio securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to: Cobra Factory Service, Cobra Electronics Corporation, 6500 West Cortland Street, Chicago, Illinois 60707 U.S.A.
6. If the radio is in warranty, upon receipt of your radio it will either be repaired or exchanged depending on the model. Please allow approximately three (3) to four (4) weeks before contacting Cobra for status. If the radio is out of warranty, a letter will automatically be sent informing you of the repair charge or replacement charge.

If you have any questions, please call 773-889-3087 for assistance.

Flush Mount Template / Plantilla para montaje empotrado

Use the supplied template to mark and cut an opening in the flat surface.

CAUTION
Before cutting, be sure the area behind the flat surface is clear of any instruments or wires that might be damaged in the process.

PRECAUCIÓN
Antes de cortar, compruebe que no haya instrumentos o cables en el área detrás de la superficie plana, que puedan resultar dañados durante el proceso.