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 battery-powered portable transceiver for use afloat. It gives you two-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 two-way communications, the radio can provide quick access to receive all the NOAA (National Oceanographic and Atmospheric Administration) weather channels and alert 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.
www.cobra.com (on-line: Frequently Asked Questions), English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside the U.S.A.

Contact Your Local Dealer

©2013 Cobra Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 USA
www.cobra.com
**Backlit LCD Screen**

- **Transmit and Receive Icons**
- **Weather Icon**
- **Active Channel Icon**
- **Simplex Operation Icon**
- **Low/Medium/High Power Icons**
- **Matrix Display**
- **UIC Active Channel Map Icons**
- **Roger Beep Icon**
- **Frequency Band Icon**
- **Button Lock Icon**
- **Call Tone Icon**
- **Weather Alert Icon**
- **Battery Power Icon**
- **Memory Icon**

**Product Features**

- **Power Settings**
  Selectable power settings produce 1, 3 or 6 watts of 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 National Weather Channels, 24 hours a day.

- **Submersible to JIS7 Standards**
  Waterproof to 3.3 ft (1 m) of water for 30 minutes.

- **Button/Key Lock**
  Prevents accidental setting changes when button lock is set.

- **Channel Scan/Memory Scan**
  Use to scan through unlimited channels or memory locations to find conversations in progress.

**Product Features (continued)**

- **Matrix Display**
  The display at the bottom of the LCD screen will show text letting the user know what mode, function or operation the radio is currently in.

- **AA Battery Compatible**
  Good for emergency backup. Requires optional AA battery tray (P/N CM 110-024).

- **Unlimited Memory Channels**
  Allows programming of unlimited VHF memory channels.

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  Allows programming of unlimited VHF memory channels.

- **Signal Strength Meter**
  Shows the strength of incoming or outgoing signals.

- **Illuminated Buttons**
  Allows high visibility of all function buttons.

- **Roger Beep Tone (Selectable)**
  Confirmation tone indicates the completion of the user’s transmission and signals to others it is clear to talk. On or Off selectable.

- **BURP**
  The Cobra exclusive BURP feature expels water from the speaker grill if the unit is dropped in the water or is subjected to extreme rain and weather.
# Introduction

- Our Thanks to You ........................................... A1

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General Precautions

The following WARNINGS and NOTICE information will make you aware of RF exposure hazards and how to assure you operate the radio within the FCC RF exposure limits established for the radio.

**WARNINGS**
- Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy, **DO NOT** touch the antenna when transmitting. **KEEP** the radio at least two (2) inches (5 cm) away from yourself and others when transmitting.
- **DO NOT** operate with more than a duty cycle of 5% transmit, 5% receive and 90% standby. The radio is transmitting when the **Talk** button is pressed and the transmit information shows on the LCD screen.
- **ALWAYS** use only Cobra authorized accessories.
- **DO NOT** operate the radio in an explosive atmosphere, near blasting sites, or in any area where signs are posted prohibiting radio transmissions.
- **NEVER** place the transceiver or microphone/speaker where they might interfere with operation of your vessel or cause injury.
- **DO NOT** allow children or anyone unfamiliar with proper procedures to operate the radio without supervision.

Failure to observe any of these warnings may cause you to exceed FCC RF exposure limits or create other dangerous conditions.

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Failure to observe any of these warnings may cause you to exceed FCC RF exposure limits or create other dangerous conditions.

**Industry Canada Antenna Notice**
Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

**Avis d'antenne du Canada d'industrie**
En vertu de la réglementation de l’industrie du Canada, cet émetteur de radio ne peut fonctionner à la aide d’une antenne d’un type et un maximum (ou moins) Gain approuvé par l’Émetteur par Industrie Canada. Pour réduire le risque d’interférence aux autres utilisateurs, le type d’antenne et son gain doivent être choisis afin que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour une communication réussie.

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

**Warning and Notice 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 the radio. Special attention must be paid to the **WARNING** and **NOTICE** statements in this manual.

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

**NOTICE**
- Statements identify conditions that could cause damage to the radio or other equipment.

**Safety Training Information**
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:
- **American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.**
- **American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields — RF and Microwave.**
- **Industry Canada RSS-102-Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency bands).**

Conformité d’exposition de la fréquence du Canada RSS-102-Radio d’industrie (rf) de l’appareillage de communication par radio (toutes les bandes de fréquence).
Introduction

NOTICE
Your radio is waterproof only when the batteries are properly installed.

AVOID using or storing the radio at temperatures below -4°F (-20°C) or above 140°F (60°C).

KEEP your radio at least 3 ft (0.9 m) away from your vessel's magnetic navigation compass.

DO NOT attempt to service any internal parts yourself. Have any necessary service performed by a qualified technician.

This radio is supplied with a lithium-ion (LiION) rechargeable battery pack.
- Use only the Cobra charger to recharge lithium-ion (LiION) batteries in the radio.
- Do not short circuit the battery pack.
- When replacing the batteries, dispose of the old batteries properly. Batteries may explode if disposed of in a fire.

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

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 6 watt maximum output of your radio is not sufficient for the distances you travel from the coast, consider a higher powered handheld or installing a Cobra Marine fixed mount radio with up to 25 watts of output power. (Visit www.cobra.com or your local dealer for model availability.)

If traveling far offshore, you should consider adding even 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 do not know where you are, the Coast Guard will have difficulty finding you if you are 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.

Sea Tow Automated Radio Check (ARC) System

Please try the Sea Tow Automated Radio Check service. Areas where the safety check service is available include the East Coast, Gulf of Mexico, and Southern California, as well as in select inland regions. The first and only boating safety program of its kind, the Sea Tow Automated Radio Check service is fully automated and allows 24 hour a day automatic responses to radio check calls.

Conducting a radio check through the Sea Tow Automated Radio Check service couldn’t be simpler. All boaters need to do is tune their VHF radios to Channel 24, 25, 26, 27 or 28, depending on the region, key the mic, and ask for a radio check. The Automated Radio Check system responds to each radio check with an automated reply, and also replays to the boater’s original radio transmission, allowing him or her to assess the strength of the signal and confirm the VHF radio is in good working order.

To find the Sea Tow Automated Radio Check service channel in an area, owners should visit http://www.seatow.com/arc. The web page links to an instructional video demonstrating how to use the service step by step.

FCC Licensing Information

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

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.

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 an 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 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 at http://www.cps-ecp.ca/.

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, and Industry Canada license-exempt RSS standards. 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.
Install/Remove Antenna

1. To install the antenna turn the antenna into the radio clockwise to tighten. Do not overtighten.
2. To remove the antenna turn the antenna counterclockwise.

This radio transmitter IC: 906A-MRHH350 has been approved by Industry Canada to operate with the supplied antenna. Other antennas are strictly prohibited for use with this device.

Cet émetteur radio IC: 906A-MRHH350 a été approuvé par Industrie Canada pour fonctionner avec l’antenne fournie. D’autres antennes sont strictement interdites pour une utilisation avec cet appareil.

Batteries and Charger

The radio is shipped with a sealed lithium-ion (LiON) battery pack (P/N CM 110-025) that is rechargeable.

WARNING

The charger provided for this radio is only to be used to charge the battery pack provided. Do not charge any other type of batteries in the charger as fire, explosion or battery damage will occur. Avoiding extreme room temperatures will also help prolong the life of the battery pack for the radio.

When your rechargeable batteries begin to discharge too quickly, it is time to install a new battery pack. Your radio will also operate with five (5) high-quality AA alkaline batteries, using the optional alkaline battery tray.

Installing the Battery Pack

1. Position the battery pack over the back of the radio.
2. Engage the battery pack into the radio by sliding to the top until battery pack is fully seated against radio housing.
3. Tighten the screw using the end of the belt clip to secure the battery pack to the radio. Do not overtighten. Only use the end of the belt clip to tighten the screw.

Belt Clip

Belt Clip

Use the spring-loaded belt clip to carry the radio on your person.
1. Slide the belt clip into the guide channel on the back of the radio until it is locked in place.
2. To attach the wrist strap, insert it through the hole at the top of the belt clip, feed it through the looped end and pull tight to secure to the belt clip.
3. Press open the belt clip, slide it over the belt and release the clip.
4. To remove the belt clip from the radio press the tab on the belt clip, which unlocks the clip, and slide it out.
To Remove Battery Pack from Radio

1. Loosen the screw on the back of the battery pack.
2. Lift the bottom of the battery pack slightly to remove it from the radio housing.
3. Pull battery pack out of the radio housing.

**NOTE**
The LiON battery pack can also be charged in the battery charger without being installed in the radio. Insert the spacer into the battery charger to support the battery pack during this charging process. Follow the same procedures in “Initial Charge” to charge the battery pack.

**NOTICE**
Lithium-ion (LiON) batteries are toxic. Please dispose of properly. Some marine suppliers and electronics retailers accept old battery packs for recycling and some municipal waste disposal agencies have special provisions for battery disposal.

**WARNING**
Never attempt to recharge alkaline batteries. They are not made to be recharged, and should be disposed of in a proper manner.
VHF Marine Radio Protocols
Operating Your Radio

Getting Started

• Refer to the foldout at the front 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” various buttons (except “Push to Talk”) on the radio. “Press” means a momentary press of approximately one (1) second. “Press and Hold” means to hold the button down for approximately two (2) seconds.

• Whenever you press any button except the Talk button on your radio, a brief tone (beep) (if key tones are selected On) will sound to confirm the button press. With all button presses, the appropriate icon will appear on the LCD and the backlight will turn On. The backlight will stay On for 10 seconds after the button is released.

• At times, you will hear two (2) other sounds. Two (2) beeps will sound to confirm your setting changes and three (3) beeps will sound to notify you of an error.

Common Radio Functions

The following procedures define common operating functions of the radio when in either Marine Standby or Weather (WX) Standby modes.

Power/Volume Control

The On/Off/Volume control is located at the upper right side of the radio. Turning the On/Off/Volume control past the detent position will turn the radio On or Off.

Volume Control

Volume is controlled by turning the On/Off/Volume control.

- To increase the volume, turn the On/Off/Volume control clockwise.
- To decrease the volume, turn the On/Off/Volume control counterclockwise.

Batteries and Charger

Maintaining the Battery Charge

As you use your radio, the battery power icon will show the battery power remaining. When the icon begins to flash, it is time to recharge or change the batteries.

NOTE

Radio will continue to receive signals when blinking but cannot transmit.

NOTICE

Use only the drop-in charger provided by Cobra. Do not use the charger with alkaline batteries; only the LiION battery pack is rechargeable. Spent alkaline batteries must be discarded and replaced.

It is a good idea to keep a set of fresh, high-quality AA alkaline batteries with your radio. Should the rechargeable battery pack become discharged and no electrical power source is available, you can insert the optional alkaline battery tray with fresh alkaline batteries and continue to use your radio.
Getting Started

Radio Speaker and Microphone
The internal Radio Speaker and Microphone are located on the bottom front face of the radio below the lower control buttons. An optional Speaker/Microphone port is located at the top of the radio between the antenna and the Power/Volume control. Unthread the Speaker/Microphone port cover to access and install an optional Cobra speaker or microphone into this port.

Talk Button
Press and hold the Talk button to transmit messages. Release the Talk button to stop transmitting.

Backlight/Key Lock Button
To Display the Backlight Momentarily:
Press the Backlight/Key Lock button. The backlight will remain on for 10 seconds. If the backlight is already on, another press of the Backlight/Key Lock button will turn it off.

Key Lock
To prevent accidental changes to your settings, you can lock all of the following buttons:
- Channel Up Button
- Channel Down Button
- SCAN Button
- MEM/ESC Button
- WX/H-M-L Button
- 16/9 Button
- TRI-WATCH Button
- Call/Enter/Setup Button

To Lock or Unlock the Buttons:
Press and hold the Backlight/Key Lock button for two (2) seconds. The Key Lock icon will appear or disappear in the LCD. When Key Lock is on, pressing any of the listed buttons on the front of the radio will result in a three (3) beep error message. Both the Backlight/Key Lock button and the Talk button are active — you can receive (Rx) or transmit (Tx) a message with Key Lock on, but you cannot change the channel.

Channel Up/Down Buttons
Your radio will receive (Rx) and transmit (Tx) VHF signals on the channel indicated on the LCD display. You can change the channel at any time using the Channel Up/Down buttons.

To Change Channels:
Press the Channel Up/Down button.
If you are on Channel 88, pressing the Channel Up button will advance to Channel 01. If you are on Channel 01, pressing the Channel Down button will advance to Channel 88.
You can press and hold the Channel Up/Down button for fast advance. The beep sound will occur only at the first press of the button and not during fast advance.
If the new channel selected is restricted to low power, the radio will automatically switch to Low Power mode and the Low Power icon will appear on the LCD.
If the radio is in the Key Lock mode, the channel will not change and the three (3) beep error signal will sound.

SCAN Button
Press and release the SCAN button to scan all channels. The SCAN icon will display on the LCD display. Scanning begins at lower channels, and scans to higher channels. Press the Channel Up/Down button to change the scan direction.
When a signal is received in SCAN mode, the radio will pause 10 seconds before resuming SCAN operation. The scan will stop on the paused channel and remain there when the Talk button is pressed.
In Memory mode, press and release the SCAN button to scan all memory channels. Because the unit is already in the Memory Channel mode, only the channels in the memory bank will be displayed.

NOTE
Memory channels need to be saved to effectively enter the Memory Channel mode and scan all memory channels.
Setup Mode Programming

The following series of procedures is designed to allow you to set the programmable features of your radio. Correctly following these steps results in a minimal amount of radio setup programming time. During setup programming, the matrix display will show text describing the programming action you are now performing.

NOTE
When in the Setup mode, if you stop programming for longer than 15 seconds, your entry will be saved and the radio will go back to the Marine Standby mode. When you return to Setup mode and continue programming you will see the last “value” displayed. While in the Setup mode, you will not receive any signal reception except when setting squelch.

Marine (VHF) Mode Programming

Programming these features will allow you to customize certain features of this radio to enhance your “On-Water” radio use.

Start from Marine Standby mode to begin Marine (VHF) Setup programming. STANDBY will be displayed on the matrix. Press and hold the Call/Enter/Setup button for two (2) seconds to enter the programming mode.

The mode programming follows this sequence:
- Squelch Level Set
- UIC Channel Map
- Tone Alert On/Off
- Call Tone Select
- Roger Beep On/Off
- Key Tone On/Off

Operating Your Radio

High/Medium/Low (H-M-L) Power Button
Your radio can transmit selectively at 1, 3 or 6 watts of power. Cobra suggests you maintain the low power setting for short-range communications. You will conserve battery life and avoid overpowering nearby stations with a low power setting 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 H-M-L Power Modes:
Press the H-M-L Power button. The LCD will show which mode is in effect. Some channels are restricted for a maximum use of 1 watt. Your radio will automatically set the power to Low Power mode when you select those channels.

Call/Enter/Setup Button
A few channels are Receive only and will not transmit in these channels.

The Call/Enter/Setup button has multiple functions. It is generally used in the following ways:
- Press and release to transmit your unique Call Tone signal to another radio.
- Press and hold to enter any Setup menu.
- Functions as an Enter button when making a selection in any Setup menu.

Getting Started
Setup Mode Programming

**Squelch Control**
Squelch Control filters weak signals and radio frequency (RF) noise so that you will clearly hear the signals you want. The Squelch Control on this radio is set through the following keypad operation:

To Set Squelch Control:
1. With the power On, push and hold Call/Enter/Setup button to access the Setup menu.
2. Squelch control will be the first menu item to appear. Press the Channel Up and Channel Down buttons to set level. The signal level bar graph shows squelch level while you are in Setup mode on the squelch adjust function.
3. To adjust your squelch, press the Channel Down button until you hear a hissing sound, then press and release the Channel Up button until the hissing stops. This will establish a “Baseline” squelch.
4. By pressing the Channel Up button further, you will filter weak and medium strength signals. By pressing Channel Down button, you will receive weaker signals.
5. Press the Call/Enter/Setup button to save this entry and move to the next Setup mode programming.

**NOTE**
If the Squelch is set so that you can hear a continuous hissing sound, the Memory Scan and Tri-Watch functions will be blocked.

Call Tone Alert
If Call Tone Alert is set to On, the radio will alert you to a call from a compatible Cobra radio with a Call Alert.

To Set Call Tone On or Off:
1. Display will show Call Tone icon flashing and the matrix will display CALL TONE ON or OFF.
2. Press Channel Up/Down button to select ON or OFF.
3. Press the Call/Enter/Setup button to save this entry and move to the next Setup mode programming. The Call Tone icon will show in the Standby mode when set to ON.

**USA/International/Canada Channel Maps**
Three (3) sets of VHF Channel Maps have been established for marine use in the USA, 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 in the Appendix on page 50). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

To Set Channel Map Operating Area:
1. The Channel Map mode is the second mode on the Marine (VHF) Setup programming.
2. U, I and C will display, with the current setting (the U icon is the default) flashing.
3. Press Channel Up/Down button to select the U, I or C icon.
4. Press Call/Enter/Setup button to save this entry and move to the next Setup mode programming.

**NOTE**
One or two of the channel maps might have been disabled for sales of this radio in some countries.
**Call Tone Select**

This setting will also allow you to transmit a unique Call Tone alert to identify your radio when you transmit messages. You can select from one of 10 different Call Tone signals.

**To Set Call Tone:**
1. From the previous press of the Call/Enter/Setup button, the matrix will display CALL TONE SELECT and the display will flash the current Call Tone number (01 through 10).
2. Press the Channel Up/Down button to select a different Call Tone. An example of each call tone will sound for 1.5 seconds.
3. Press Call/Enter/Setup button to save this entry and move to the next Setup mode programming.

**NOTE**
Call Tones are not usually used for Marine VHF communications. We allow you to turn it On for your unique communication needs. It is only compatible with other Cobra VHF radios.

**Roger Beep Mode**

In Roger Beep mode, your listener will hear an audible tone when you release the Talk button. This alerts your listener that you are finished talking and it is OK for them to speak.

**To Set Roger Beep On or Off:**
1. Display will show ROG icon flashing and matrix will display ROGER BEEP ON or OFF.
2. Press Channel Up/Down button to select ON or OFF. ROG will be displayed when On.
3. Press Call/Enter/Setup button to save this entry and move to the next Setup mode programming.

**Key Tone Mode**

In Key Tone mode, an audible tone will sound each time a button is pressed or you change a setting.

**To Set Key Tone On or Off:**
1. Display will show Key Tone icon flashing and matrix will display KEY TONE ON or OFF.
2. Press Channel Up/Down button to select ON or OFF.
3. Press Call/Enter/Setup button to save entry.

**Weather Alert Standby**

Programming these features will allow your radio to listen to all NOAA Hazard Alert radio channels.

Start from WX Alert Standby mode to begin WX Alert Setup programming. Press and hold the Call/Enter/Setup button for two (2) seconds to enter the programming mode.

**To Set WX Alert On or Off:**
1. WX Alert mode is the first mode that begins WX Alert Setup programming. From the WX Standby mode, press and hold the Call/Enter/Setup button to enter the Weather mode programming.
2. Display will show WX Alert icon and flashing matrix will display WX ALERT ON or OFF.
3. Press Channel Up/Down button to select ON or OFF.
4. Press Call/Enter/Setup button to save this entry and move to the next setup programming mode.
To Set WX Auto Search (SCAN) On or Off:

1. Display will show Weather icon and the matrix will display WX SCAN with ON or OFF flashing.
2. Press Channel Up/Down button to select ON or OFF.
3. Press the Call/Enter/Setup button to save entry.

NOTE

When WX Auto Search (SCAN) is set to On, weather channel scanning will start automatically and scan all available weather channels until the strongest channel is found. This will happen under the following conditions:

- WX Alert is engaged.
- WX received signal level falls below a preset squelch and
  - radio is in WX Standby OR
  - radio is in VHF Standby and there is no channel activity.

Transmit (Tx) Mode

Transmit (Tx) mode gives you the ability to interact 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. See Appendix to help you select the proper channels.

1. To Transmit a Message:
   1. Check to see that your radio is set to a proper channel for the type of message you plan to send.
   2. Toggle to the Low Power setting.
   3. With the microphone about 2 in. [51 mm] from your mouth, press and hold the Talk button and speak into the microphone. The Transmit icon will appear on the LCD.
   4. Release the Talk button when you are finished speaking.

Your radio can only operate in either Transmit (Tx) or Receive (Rx) mode at any given time. You will not hear the response to your message unless the Talk button is released. Battery Power icon is frozen for TX at whatever level it was during receive.

NOTE

Coast Guard alerts are broadcast on Channel 16. You must have the WX Alert turned On to receive NOAA weather alerts. While in Marine Standby mode, you will receive any messages sent on the channel to which you are tuned.
VHF Marine Radio Protocols

Operating Your Radio

Standby/Receive and Transmit

NOTE
If the Talk button is held down for five (5) minutes, the radio will automatically sound a series of beeps and cease transmitting to prevent unwanted signal generation and battery drain. As soon as the Talk button is released, it can be pressed again to resume transmission.

NOAA Weather Channels and Alert

Monitoring the weather will probably be a frequent use of your radio. NOAA provides continuous, around-the-clock broadcasts of the latest weather information. Taped weather messages run every four (4) to six (6) minutes and are revised every two (2) or three (3) hours, or as needed. The Coast Guard also announces weather and other safety warnings on Channel 16. Smart boaters keep an eye on safety and an ear to the radio — and never let the weather catch them unaware.

NOAA Emergency Weather Alert

In the event of a major storm or other weather condition requiring vessels at sea or on other bodies of water to be notified, NOAA broadcasts a 1050 Hz tone that receivers such as your CobraMarine VHF radio can detect and warn you of a weather alert condition. When the Weather Alert mode on your radio is On, this signal will produce a loud tone from the speaker in the radio and will automatically switch to the alerting weather channel so the alert broadcast can be heard.

NOAA Test Alert System

To test this system, NOAA broadcasts the 1050 Hz signal every Wednesday sometime between 11 a.m. and 1 p.m. in each local time zone. Any receiver that can detect the weather alert tone may use this service to verify that this system is functioning properly.

Weather (WX) Standby Mode

To enter the WX Standby mode, press and hold the WX/H-M-L button.

Receiving a Weather Alert

NOAA broadcasts weather information as described in the NOAA weather channels section on page 61 of this manual. When NOAA broadcasts a weather alert signal and your radio is in WX Alert Standby mode, the following items will be displayed on the LCD display:

- The WX icon (cloud/sun) icon will be displayed.
- The last used weather channel will be displayed.
- The bar graph will display received signal strength level.
- The WX Alert icon (safety triangle) will be displayed.
- The matrix will display WEATHER STANDBY.

NOTE
Only one (1) or two (2) of the weather channels will be operating in any given location (only in Receive (Rx) mode). You will need to select the channel with the strongest signal in your location.

When in the WX Alert mode, and NOAA sends the 1050 Hz alert tone, the radio will sound a series of loud beeps regardless of the volume control setting.
Advanced Operation

Channel 16/9 Mode
Channel 16/9 mode gives you quick access to calling on Channel 16 and 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.
3. Press the Channel 16/9 button a third time and return to the last used channel.

Tri-Watch Mode
Tri-Watch mode gives you one (1) button access to scan a total of three (3) channels of most importance to you. Channel 16 is preprogrammed and will always be one (1) of the scanned locations. Two (2) other channels of your choice can be stored in the radio. These channels can be edited and/or recalled during future engagements of Tri-Watch mode.

NOTE
The radio must be squelched for Tri-Watch mode to function. See page 18 for Squelch procedure.

Tri-Watch Setup
To Program or Edit the Tri-Watch Channels:
1. Press and hold the TRI-WATCH button for two (2) seconds to activate Tri-Watch Setup mode. The MEM icon on the display will turn On and the matrix will display TW MEM ENTER 01.

NOTE
The main channel number will flash to indicate channel position. If there is no input activity for 15 seconds, the radio will sound three (3) beeps and return to Marine Standby mode.

2. Press Channel Up/Down button to select the desired Tri-Watch channel.
3. Press and release TRI-WATCH button or Call/Enter/Setup button to confirm entry.
4. Repeat steps 2 and 3 to program the remaining additional Tri-Watch memory channel.
5. After programming both Tri-Watch memory channels the radio will immediately engage Tri-Watch mode.
Advanced Operation

Using Tri-Watch

Tri-Watch Scan Mode:
1. From Marine Standby mode, press the TRI-WATCH button. The TW SCAN will display on the matrix along with the three marine channels stored in the Tri-Watch memory.
2. The radio will scan through the three (3) Tri-Watch memory channels.
3. A signal on any one (1) of the three (3) channels will stop the scan for 10 seconds to allow you to listen to the traffic on that location.

NOTE
After the Tri-Watch scan stops to monitor a channel, as long as you do not press any buttons within 10 seconds, your radio will automatically resume scanning the Tri-Watch channels.

4. Press the Channel Up/Down button to resume scanning the Tri-Watch channels or to change the scan direction.
5. To EXIT the Tri-Watch scan, press the TRI-WATCH button again. The TRI icon will disappear from the LCD and the radio will return to Marine Standby mode.

Advanced Operation

Memory Location Mode
Your radio has unlimited memory locations for storing your most frequently used channels. These memory locations can be selected individually or can be scanned. (See page 32 under Memory Location Scan.)

To enter Memory mode, press MEM/ESC button. The display will show the MEM icon and the Memory Channel bank will be displayed on the matrix.

To Program Memory Locations:
1. Press and hold the MEM/ESC button for two (2) seconds. The memory location number will be displayed on the matrix and the MEM icon will be turned On.
2. Use the Channel Up/Down button to advance to the memory location (00-99) you want to program.
3. Press the MEM/ESC button to select the memory location.
4. Use the Channel Up/Down button to change to the channel you want to store into the selected memory location.
5. Press the MEM/ESC button to program that channel. The memory location will be displayed on the matrix again.
6. Repeat steps 2 through 5 to program as many additional memories as you want.
7. Press and hold the MEM/ESC button for two (2) seconds. This will return the radio to Memory mode.
8. Press and release the MEM/ESC button again to return to Marine Standby mode.
Channel Scan Mode:
During Channel Scan mode, the radio will rapidly switch from channel to channel through all the channels.

**NOTE**
The radio must be squelched for Channel Scan mode to function. See page 18 for Squelch procedure.

To Enter Channel Scan:
1. From Marine Standby mode, press the SCAN button. The radio will immediately begin to scan the entire channel map selected in the active channel map. CHANNEL SCAN will display on the matrix.
2. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location. After 10 seconds, the radio will resume scanning.
3. Press the Channel Up/Down button to resume scanning before the 10-second pause has completed or to change the scan direction.
4. To EXIT Channel Scan mode, press the SCAN button again. The SCAN icon will disappear from the LCD and the radio will return to Marine Standby mode.

To Recall a Stored Memory Location:
1. Press the MEM/ESC button. The MEM icon will be turned On.
2. Press the Channel Up/Down button to select the memory location. If a memory location has been programmed, its associated channel will display on the LCD. Your radio is now in Marine Standby mode on the selected memory location.
3. Press the MEM/ESC button to return the radio to Marine Standby mode. The last channel used in Marine Standby mode will now be displayed on the LCD and the MEM icon will disappear.

To Erase Stored Memory Locations:
1. Press and hold the MEM/ESC button for two (2) seconds. The memory location number will be displayed on the matrix and the MEM icon will be turned On.
2. Use the Channel Up/Down button to advance to the memory location you want to erase.
3. Press the MEM/ESC button to select the memory location.
4. Use the Channel Up/Down button to change to the channel to read “00” at the selected memory location.
5. Press the MEM/ESC button to erase that channel. Repeat steps 2 through 5 to erase as many additional memories as you want.
6. Press and hold the MEM/ESC button for two (2) seconds. This will return the radio to Marine Standby mode.
7. Press and release the MEM/ESC button again to return to Marine Standby mode.
Advanced Operation

Memory Location Scan Mode
During Memory Location Scan mode, the radio will rapidly scan through all pre-assigned memory channels.

**NOTE**
The radio must be squelched for Memory Location Scan mode to function. See page 18 for Squelch procedure.

**NOTE**
If there are fewer than two (2) memory locations programmed in the radio, the Memory Location Scan option will not be available. To program at least two (2) memory locations, see page 29.

To Enter Memory Location Scan:
1. From Marine Standby mode, press the **MEM/ESC** button.
2. Press the **SCAN** button. The radio will immediately begin to scan all pre-assigned memory channels. The **MEM** icon will show on the LCD, and **MEM CHAN SCAN** will display on the matrix along with the memory location.
3. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location. After 10 seconds, the radio will resume scanning.
4. Press the Channel Up/Down button to resume scanning the Memory Location Scan channels before the 10-second pause has completed or to change the scan direction.
5. To EXIT Memory Location Scan mode, press the **SCAN** button again. The **MEM** icon will disappear from the LCD and the radio will return to Marine Standby mode.

Floating Feature

**Burp Feature**
Cobra’s Burp feature allows the operator to expel water from inside the speaker grill. This is especially useful if the radio is dropped overboard or during extreme foul weather conditions. In these conditions, water can become trapped in the speaker grill and muffle the audio.

To Activate Burp:
1. Press and release the **16/9** and **SCAN** keys at the same time.
2. The Burp tone(s) at maximum level will sound from the internal speaker for eight seconds.
3. During this time, the matrix will display **BURP**.
4. Hold the radio with the speaker grill down to help the water drain out.
5. After an 8-second interval, the radio will return to standby.

**Floating Radio**
This radio is designed to float if dropped overboard. The orange center makes it visible and easy to retrieve. This rugged radio is also designed to meet JIS7 (IPX7) specifications. This means it’s designed to operate properly after being submerged in one meter deep water for 30 minutes.

**NOTE**
Do not leave the radio floating in water permanently. This could cause premature corrosion of the battery contacts and other damage.

The radio is only designed to float with its included Lithium-ion battery. Using other approved batteries might cause the radio to sink. This includes the optional AA battery tray, depending on the weight of the AA batteries used.
Maintenance

Very little maintenance is required to keep your CobraMarine VHF radio in good operating condition:

- Keep the radio and charger clean by wiping with a soft cloth and mild detergent. 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, wipe with a soft, moist cloth at least once a day to prevent buildup of salt deposits, which could interfere with button operation.
- If the radio will be stored for a long period, such as over the winter, remove the batteries from the battery tray and store them in a separate package. This is especially important if you are using alkaline batteries.

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>Batteries are exhausted</td>
<td>Recharge or replace batteries</td>
</tr>
<tr>
<td>Batteries not installed properly</td>
<td>Remove batteries and reinstall according to polarity markings</td>
<td></td>
</tr>
<tr>
<td>Batteries run down quickly</td>
<td>Batteries are at the end of their life</td>
<td>Replace with new batteries</td>
</tr>
<tr>
<td>Will transmit at one (1) or three (3) watts, but not at six (6) watts</td>
<td>Batteries are low</td>
<td>Recharge or replace batteries</td>
</tr>
<tr>
<td>Selected channel is limited to one (1) watt</td>
<td>Switch to another channel</td>
<td></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>Pre-adjust volume and squelch</td>
</tr>
<tr>
<td>No response to button press</td>
<td>Button lock is On</td>
<td>Press Backlight/ Key Lock button</td>
</tr>
<tr>
<td>No answer to calls</td>
<td>Out of range of other station</td>
<td>Switch to three (3) or six (6) watts or move closer</td>
</tr>
<tr>
<td>Signal is blocked by terrain</td>
<td>Move until you have a “line-of-sight” to the other station</td>
<td></td>
</tr>
</tbody>
</table>

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. If there is no answer, switch to 3 watts and call again. You have the ability to go up to 6 watts of output power to increase your calling distance. Remember, the lower wattage outputs will conserve your battery and minimize interference to other users.

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) 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.

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 (if available), vessel name and the state registration number, at both the beginning and at the end of the message.
Prohibited Communications

You MUST NOT transmit:

- False distress or emergency messages.
- Messages containing obscene, indecent or profane language.
- 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.

VHF Marine Radio Procedures

Voice Calling

You are required to listen to Channel 16 while standing by. Channel 16 is the distress and safety channel used for establishing initial contact with another station and for emergency communication. The Coast Guard also monitors Channel 16 for safety purposes for everyone on the water.

NOTE

Channel 9 may be used by recreational vessels for general-purpose calling. This frequency should be used whenever possible to help relieve congestion on Channel 16. The Coast Guard generally does not make urgent marine information broadcasts or weather warnings on Channel 9. Boaters are still asked to "keep watch" on Channel 16 whenever the radio is turned on and not in use with another station.

To call another vessel or shore installation (e.g., lock or bridge tender):

- Make sure the radio is on.
- Make sure you are in standby listening mode on Channel 16. Make sure Channel 16 is not in use.
- When the channel is open (quiet), press the Talk button and call a vessel. Hold the radio or microphone several inches from your face and speak clearly and distinctly in a normal voice tone. Say "name or station being called," "THIS IS [your vessel name or call sign]."
- Once contact is made, you must leave Channel 16 and go to another working channel. See channel listing on pages 46.

For Example

The vessel Corsair is calling the vessel Vagabond:

Corsair: "Vagabond, this is Corsair. Over."

Vagabond: "Please switch and answer on Channel 68 (or any proper working channel). Over."

Corsair: "Switching to Channel 68. Over."
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, 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. Drop your anchor and call a friend or marina to bring the fuel you need or to give you a tow.

If the other does not respond, wait two (2) minutes and repeat. You are permitted to attempt contact three (3) times, two (2) minutes apart. If you still have not made contact, wait 15 minutes before trying again.

After communications are completed, each vessel must sign off with its call sign or vessel name and the word "out" and return to Channel 16.

NOTE
For best sound quality at the station you are calling, hold the microphone on the front of the radio at least 2 in. (51 mm) from your mouth and slightly off to one (1) side. Speak in a normal tone of voice.

NOTE
"Over and Out"
The most commonly misused procedure words are "over and out" within the same transmission. "Over" means you expect a reply. "Out" means you are finished and do not expect a reply.
Marine Distress Procedure

Speak slowly — clearly — calmly.

1. Make sure your radio is On.
2. Select 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],” repeated 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 nearby).
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 step 3 above.

Keep the radio nearby. Even after your message has been received, the Coast Guard can find you more quickly if you can transmit a signal for a rescue boat to hone in on.
Emergency Messages and Distress Procedure

For Example

“Mayday — Mayday — Mayday”
“This is Corsair — Corsair — Corsair” [or “IL 1234 AB,” repeated three (3) times]
“Mayday Corsair (or IL 1234 AB)”
“Navy Pier bears 220 degrees magnetic — distance 5 miles”
“Struck submerged object and flooding — need pump and tow”
“Four (4) adults, three (3) children aboard — no one injured”
“Estimate we will remain afloat one-half hour”
“Corsair (or IL 1234 AB) is 26 ft sloop with blue hull and tan deck house”
“I will be listening on Channel 16”
“Corsair (or IL 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.

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.

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 photocopy 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. 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.
7. If your radio is returned for factory repair, it will be returned to you with default settings restored.

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

Specifications (Typical)

**General**

- Number of Channels: All U.S., Canadian, International and NOAA Weather Channels
- Channel Spacing: 25 kHz
- Modulation: 5 kHz Max.
- Input Voltage: 7.4 VDC
- Battery Life (at High Power): 40 hours @ 6 watts, 14 hours @ 1 watt
- Current Drain: Standby 45 mA, Transmit (Tx) 1.8 A @ High Power, 700 mA @ Low Power
- Temperature Range: -20˚C to 50˚C
- Radio Dimensions: 4.8” x 2.4” x 1.4” (123 mm x 62 mm x 36 mm) not including antenna
- Radio Weight: 0 lbs 8 oz. (228 g) without batteries

**Receiver**

- Frequency Range: 156.050 to 163.275 MHz
- Receiver Type: Double Conversion Super-Heterodyne
- Sensitivity: 12 dB Sinad -121 dBm
- Adjacent Channel Selectivity: -55 dB
- Intermodulation and Rejection: -70 dB
- Spurious and Image Rejection: -60 dB
- AF Output: 250 mW @ 8 Ohms

**Transmitter**

- Frequency Range (Tx): 156.025 to 157.425 MHz
- RF Output Power: 1.3 or 6 watts max (5 Watts rated)
- Spurious Emissions: -55 dB
- Frequency Stability: 5 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.

**Channel Assignments (English)**

**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 67* , 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, 78A, 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.

Asignaciones de canales de VHF para radiocomunicación marítima

Existen tres (3) juegos de canales VHF para uso marítimo en los EE.UU., Canadá y el resto del mundo (internacional). La mayoría de los canales coinciden en los tres (3) mapas, pero sin duda existen diferencias (consulte las tablas en las páginas siguientes). El radio incorpora los tres (3) mapas y funcionará correctamente en cualquiera de las tres áreas.

A continuación presentamos en forma resumida las asignaciones de canales del Mapa de canales para EE.UU.

**Asignaciones de canales (Español)**

**Auxilio, seguridad y llamadas**

**Canal 16**

Para ser oídos por otra estación (llamadas) o en casos de emergencia (auxilio y seguridad).

**Llamadas**

**Canal 9**

Llamadas de carácter general (excepto casos de emergencia) para embarcaciones no comerciales. Se le pide encarecidamente a la tripulación de las embarcaciones recreativas usar este canal para reducir la congestión del canal 16.

**Seguridad entre embarcaciones**

**Canal 6**

Para mensajes de seguridad entre embarcaciones y para mensajes de búsqueda y rescate enviados a barcos y aviones de la guardia costera.

**Enlace con la guardia costera**

**Canal 22A**

Para hablar con las guardias costeras estadounidenses y canadienses (excepto casos de emergencia) tras haber establecido contacto por el canal 16.

**No comerciales**

**Canales 67* , 68* , 69, 71, 72, 78A, 79A* , 80A***

Canal activo para pequeñas embarcaciones. Los mensajes deben estar relacionados con las necesidades de las embarcaciones, como por ejemplo, informes de pesca, atraques y agrupamientos. Use el canal 72 solamente para mensajes entre embarcaciones.

**Comerciales**

**Canales 1A, 7A, 8, 9, 10, 11, 18A, 19A, 63A, 67, 72, 78A, 80A, 88A***

Canal activo para embarcaciones comerciales. Los mensajes deben estar relacionados con la actividad comercial o las necesidades de la embarcación. Use los canales 67, 72 y 88A solamente para mensajes entre embarcaciones.
Sea Tow ARC (Automated Radio Check)

Channels 24, 25, 26, 27, 28
Tune your radio to the proper channel for your community. Conduct a radio check as you normally would. Upon releasing the mic, the system will replay your transmission, letting you hear how you sound.

Public Correspondence (Marine Operator)

Channels 24, 25, 26, 27, 28
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*, 20A, 56A*, 57A, 58A, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77*
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.

NOTE
* These channels are restricted to the listed uses in certain parts of the country or for certain types of users only. Consult FGC rules or a knowledgeable radio operator before using them.

NOTE
* El uso de estos canales está dedicado a las aplicaciones que aparecen en la lista, en ciertas partes del país o para ciertos tipos de usuarios. Consulte las normas de la FGC o a un operador de radio con experiencia antes de usarlos.
<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>Mapa de canales</td>
<td>Transmisión</td>
<td>Recepción</td>
</tr>
<tr>
<td>USA</td>
<td>Canadá</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>* *</td>
<td>156.050 160.650</td>
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</tr>
<tr>
<td>01A</td>
<td>*</td>
<td>156.050 156.050</td>
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<td>* *</td>
<td>156.150 160.750</td>
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<td>*</td>
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<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>13</td>
<td>* *</td>
<td>156.650 156.650</td>
<td>1 watt USA</td>
</tr>
</tbody>
</table>

**Channel Use (English):**
- Public Operations and Commercial, VTS in selected areas
- Intership Safety
- Boater Calling Channel
- Commercial, VTS in selected areas
- Port Operations, VTS in selected areas
- Internship Navigation Safety (Bridge-to-Bridge)

**Uso de canales (Español):**
- Operaciones portuarias y comerciales; VTS en áreas selectas
- Seguridad entre embarcaciones (puente de mando a puente de mando). En aguas estadounidenses, las grandes embarcaciones se mantienen vigilantes con sus radios sintonizados en este canal.
### VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>USA/EE.UU</th>
<th>Canada</th>
<th>Frequency (USA/EE.UU)</th>
<th>Frequency (Canada)</th>
<th>Usage and Description</th>
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<tr>
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<td>156.700</td>
<td>156.700</td>
<td>Port Operations, VTS in selected areas</td>
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<tr>
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<td>*</td>
<td>Rx Only</td>
<td>156.750</td>
<td>Environmental (Receive Only)</td>
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<tr>
<td>15 A</td>
<td>*</td>
<td>*</td>
<td>156.750</td>
<td>156.750</td>
<td>1 watt CAN 1 watt Canada</td>
</tr>
<tr>
<td>16</td>
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<td>*</td>
<td>156.800</td>
<td>156.800</td>
<td>Canada (EPIRB Buoys Only); International (On-Board Communication)</td>
</tr>
<tr>
<td>17</td>
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<td>*</td>
<td>Rx Only</td>
<td>156.850</td>
<td>International Distress, Safety and Calling</td>
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<tr>
<td>18</td>
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<td>*</td>
<td>156.900</td>
<td>156.900</td>
<td>1 watt CAN 1 watt Canada</td>
</tr>
<tr>
<td>18 A</td>
<td>*</td>
<td>*</td>
<td>156.900</td>
<td>156.900</td>
<td>International Distress, Safety and Calling</td>
</tr>
<tr>
<td>19</td>
<td>*</td>
<td>*</td>
<td>156.950</td>
<td>156.950</td>
<td>1 watt CAN 1 watt Canada</td>
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<tr>
<td>19 A</td>
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<td>156.950</td>
<td>Commercial</td>
</tr>
<tr>
<td>20</td>
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<td>*</td>
<td>157.000</td>
<td>157.000</td>
<td>1 watt CAN 1 watt Canada</td>
</tr>
<tr>
<td>20 A</td>
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<td>*</td>
<td>157.000</td>
<td>157.000</td>
<td>Commercial</td>
</tr>
<tr>
<td>21</td>
<td>*</td>
<td>*</td>
<td>157.050</td>
<td>157.050</td>
<td>Port Operations, Ship Movement</td>
</tr>
<tr>
<td>21 A</td>
<td>*</td>
<td>*</td>
<td>157.050</td>
<td>157.050</td>
<td>Commercial</td>
</tr>
<tr>
<td>21 B</td>
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<td>*</td>
<td>RX only</td>
<td>157.100</td>
<td>Port Operations, Ship Movement</td>
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<td>22</td>
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<td>*</td>
<td>157.100</td>
<td>157.100</td>
<td>U.S. (Government Only); Canada (Coast Guard Only)</td>
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<tr>
<td>22 A</td>
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<td>*</td>
<td>157.100</td>
<td>157.100</td>
<td>Coast Guard Only – Weather Broadcasts</td>
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<td>23</td>
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<td>*</td>
<td>157.150</td>
<td>157.150</td>
<td>Public Correspondence (Marine Operator)</td>
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<td>23 A</td>
<td>*</td>
<td>*</td>
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<td>157.150</td>
<td>Coast Guard Only – Weather Broadcasts</td>
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<td>Rx Only</td>
<td>157.150</td>
<td>Coast Guard Only – Weather Broadcasts</td>
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### Appendix

Nada se compara a Cobra®
# 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>USA</td>
<td>EE.UU.</td>
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<td></td>
<td></td>
<td>157.250</td>
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<td>25B</td>
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<td>RX only</td>
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<td>27</td>
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<td></td>
<td>157.400</td>
</tr>
<tr>
<td>28B</td>
<td></td>
<td>RX only</td>
<td>162.000</td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
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</tr>
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<td>61A</td>
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<td>156.125</td>
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<td></td>
<td>156.175</td>
</tr>
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<td></td>
<td>156.175</td>
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<td></td>
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</tr>
<tr>
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<td>156.275</td>
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<tr>
<td>66</td>
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<td></td>
<td>156.325</td>
</tr>
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</table>

## Frequency (Frecuencia)
- **VHF Marine Channel Assignments**
- **Channel Use (English)**

<table>
<thead>
<tr>
<th>Channel Use (English)</th>
<th>Uso de canales (Español)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Tow ARC (Automated Radio Check)</td>
<td>Operaciones de rádios automáticos (MCTS Canada)</td>
</tr>
<tr>
<td>Safety: Costless Marine Broadcast (CMB) service by MCTS Canada</td>
<td>Seguridad: Transmisión Marítima Continua (CMB) servicio por MCTS Canada</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator)</td>
<td>Correspondencia pública (operador marítimo)</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>Canada (Coast Guard Only); West Coast (Coast Guard Only); East Coast (Commercial Fishing)</td>
<td>Canadá (guardia costera solamente); 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>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>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones</td>
</tr>
<tr>
<td>Operations portuarias y comerciales; VTS en áreas seleccionadas, Barcos BCC de la marina en Canadá</td>
<td>Operaciones portuarias y comerciales; VTS en áreas seleccionadas, Barcos BCC de la marina en Canadá</td>
</tr>
<tr>
<td>EE.UU. (entidades gubernamentales solamente); Canada (pesca comercial)</td>
<td>EE.UU. (entidades gubernamentales solamente); Canada (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>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones</td>
</tr>
<tr>
<td>Operations portuarias</td>
<td>Operaciones portuarias</td>
</tr>
<tr>
<td>Public Correspondence (Marine Operator), Port Operations, Ship Movement</td>
<td>Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones</td>
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### VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency (Transmit)</th>
<th>Power Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>USA (left)</td>
<td>Canada (right)</td>
<td></td>
</tr>
<tr>
<td>66A</td>
<td>*</td>
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<td>67</td>
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<td>77</td>
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<td>156.875</td>
</tr>
</tbody>
</table>

**Channel Use (English)**

- **Port Operations**
- **U.S. (Commercial)** Used for bridge-to-bridge communications in lower Mississippi River (Intership Only); Canada (Commercial Fishing), S&R communications with pilots for movement and docking of ships.
- **Non-Commercial (Recreational)**: U.S. (Non-Commercial, Recreational); International (Port Operations, Ship Movement)
- **Digital Selective Calling**
  - U.S. and Canada (Non-Commercial, Recreational); International (Port Operations, Ship Movement)
  - 1 watt USA

**Uso de canales (Español)**

- **Operaciones portuarias**
- **EE.UU. (comercial)**. Usado para comunicaciones de puente a puente en la parte baja del Río Misisipi (entre embarcaciones solamente). Canadá (pesca comercial (transmisión y recepción).
- **No comercial (recreativo)**
- **EE.UU. (no comercial, recreativo); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)**
- **EE.UU. y Canadá (no comercial, recreativo); Internacional (operaciones portuarias, movimiento de embarcaciones)**
- **EE.UU. (operations portuarias); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)**
- **EE.UU. (operaciones portuarias); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)**
- **Operaciones portuarias (entre embarcaciones solamente)**
- **Operaciones portuarias (entre embarcaciones solamente)**
- **Restrict to communications with pilots for movement and docking of ships.**
# VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency</th>
<th>Power Limits</th>
<th>Channel Use (English)</th>
<th>Uso de canales (Español)</th>
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<td>157.175</td>
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<td>82</td>
<td>USA/Canada</td>
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<td>USA/Canada</td>
<td>157.375</td>
<td>157.375</td>
<td>Public Correspondence (Ship to Coast) In U.S. only within 75 miles of Canadian Border</td>
<td>Correspondencia pública (entre embarcación y costa). En los EE.UU, solamente dentro de los casi 121 kilómetros (75 millas) de la frontera canadiense</td>
</tr>
<tr>
<td>83B</td>
<td>USA/Canada</td>
<td>157.425</td>
<td>157.425</td>
<td>Commercial Intership only</td>
<td>Comercial entre embarcaciones solamente</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>RX Frequency MHz</th>
<th>Weather Channel</th>
</tr>
</thead>
<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>
<td>Canada</td>
</tr>
<tr>
<td>9</td>
<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.
Your Cobra radio has several optional accessories available to enhance the use of the radio. Some are listed below:

**Alkaline Battery Tray (available only in black)**
A special alkaline battery tray (P/N CM 110-024) is available as an optional accessory to have as an emergency backup. By using five (5) high-quality AA alkaline batteries, you can have a spare battery backup source for your radio.

**NOTE**
Alkaline batteries are not rechargeable.

**Lapel Speaker/Microphone**
A speaker/microphone that attaches to your lapel, by ordering P/N CM 330-001. This unique accessory allows you to wear the radio on your belt while still being able to communicate with other vessels. A small Push to Talk (PTT) button on the lapel speaker/microphone allows you to answer any incoming call.

**LiON Battery**
LiON replacement battery (P/N CM 110-025). Can be used with the charger included with this radio.

**Antenna (available only in black)**
Replacement Antenna P/N CM 300-002

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**Belt Clip (available only in black)**
Replacement Belt Clip P/N CM 240-003

**AC Charger**
Replacement AC Charger P/N CM 120-005

**DC Charger**
Replacement DC Charger P/N CM 130-005

**Drop-In Battery Charger**
Replacement Drop-In Charger P/N CM 110-030