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

Radio Controls

Speaker/ Microphone
External Cover
ON/OFF/ Volume Control
Wrist Strap Connector
Instant Channel 16/9 Button
SCAN Button
Call/Enter Button
Memory/Escape Button
Microphone
Belt Clip Engagement

Backlight/ Key Lock Button
Power Level/Weather Button
Tri-Watch Button
Battery Clip

Tri-Watch
Button

Channel UP
Button
Push to Talk Button
Channel DOWN
Button
Backlight/ LCD Screen

ON/OFF/ Volume Control

Speaker/ Microphone
External Cover

ON/OFF/ Volume Control

Wrist Strap Connector
Instant Channel 16/9 Button
SCAN Button
Call/Enter Button
Memory/Escape Button
Microphone

Belt Clip Engagement

Backlight/ Key Lock Button
Power Level/Weather Button
Tri-Watch Button
Battery Clip
Backlit LCD Screen

- Transmit and Receive Icons
- Frequency Band Icon
- Active Channel Numbers
- Tri-Watch Icon
- Button Lock Icon
- Scan Icon
- Roger Beep Icon
- Battery Power Icon
- Memory Channel Icon
- Memory Channel
- Simplex Operation Icon
- Call Tone Icon
- Weather Alert Icon
- Weather Icon
- Signal Level Icons
- Low/Medium/High Power Icons

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.

**AA Battery Compatible**
- Can work at full power with six (6) AA alkaline batteries. Good for emergency backup. Requires optional AA battery tray (P/N CM 110-011).

**Instant Channel 16/9**
- Provides instant access to priority Channel 16 and calling Channel 9.

**Tri-Watch**
- Use to monitor three (3) channels at once — Channel 16 and two (2) programmable channels.

**Floating**
- This radio will float if dropped overboard. It has an orange stripe so it’s easy to retrieve. Must use included battery to float.

**120V/12V Charger Included**
- Use to charge battery pack, at home, in a car or in a boat.

**Locking Desktop Charger**
- Holds the radio or battery in place while charging. Vertical or horizontal mounting.

**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.
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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® radio is designed for, and classified as, “Occupational Use Only.” The radio 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:


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.
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.

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 (LiON) rechargeable battery pack.

- Use only the Cobra charger to recharge lithium-ion (LiON) 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.
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 that can be accessed by pressing one (1) button.

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 (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.
Included in this Package

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

- Radio
- Wrist Strap
- Drop-In Battery Charger
- Battery Charger Power Cord
- LiON Battery Pack
- Operating Instruction Manual
- Spring-Loaded Belt Clip

Wrist Strap and Belt Clip

Wrist Strap

The radio comes with the wrist strap already attached. It can be easily removed if you choose not to use it.

Belt Clip

Use the spring-loaded belt clip to carry the radio on your person.

1. Press open the belt clip, slide it over the belt and release the clip.
2. Insert the round guide on the back of the radio into the guide channel on the back of the belt clip. The radio must be upside-down, as shown, to remove it from the belt clip.
3. Once the knob is inserted all the way into the belt clip channel, the radio swings free but remains secure.
Batteries and Charger

The radio is shipped with a sealed lithium-ion (LiON) battery pack (P/N CM 110-021) 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 six (6) high-quality AA alkaline batteries, using the optional alkaline battery tray.

**Installing the Battery Pack**

1. Position the battery pack to line up the two (2) external alignment tabs to the alignment slots in the radio.
2. Engage the battery pack into the radio until battery pack is fully seated against the radio housing.
3. Pivot the locking tab up until it snaps into place on the back of the battery pack.

**Initial Charge**

The Cobra-provided LiON battery pack may be charged at home, in a car or in a boat using the appropriate 12V or 120V power cord with the charger.

1. Insert one (1) of the power cords into the back of the drop-in charger.
2. Insert the other end of the power cord into the appropriate 12V or 120V power source.
3. Remove the spacer from the charger and insert the entire radio/battery into the charger. The metal charge contacts on the battery will contact the mating prongs in the charger to transfer the charging current.
4. Observe that the red light on the front of the charger glows to indicate that the battery pack is properly seated and the charger is operating.
5. Allow the batteries to charge for five (5) to six (6) hours before use. The light will change back to green when the battery is fully charged.

**WARNING**
Only the rechargeable LiON battery pack can be recharged. You MUST use one of the charging devices provided with this radio. Do not substitute any other type of charging adapter or charger base for this radio. Battery damage, fire or explosion may result. It is equally important to prevent the lithium-ion (LiON) battery pack from freezing to obtain best performance from the battery pack.

**NOTE**
If the drop-in charger is used on a boat, Cobra recommends you attach it to a horizontal shelf or vertical bulkhead (using the screw holes provided) to prevent possible damage due to the boat rolling or pitching. The charging base has been designed to hold the battery pack in place during rough sea conditions.
To Remove Battery Pack from Radio
1. Pivot the locking tab off of the back of the battery pack to unlock.
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 accept old battery packs for recycling and some municipal waste disposal agencies have special provisions for battery disposal.

Alkaline Batteries
An optional alkaline battery tray (P/N CM 110-011) can be purchased for this radio. The alkaline battery tray acts as a backup or “Emergency” power source should the battery pack run low on power and needs to be recharged. The radio will transmit at full power when using six (6) new AA alkaline batteries.

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

**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.

**NOTICE**
Use only the drop-in charger provided by Cobra. Do not use the charger with alkaline batteries; only the LiON 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.

**NOTE**
Some radios with LiON batteries have AA or AAA battery packs which only allow low-power transmit. The optional AA battery tray for the MR HH330 and a fresh set of alkaline batteries will allow for full-power emergency transmissions.
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) 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

Power On/Off 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.
Getting Started

Backlight/Key Lock Button
The LCD will be illuminated by the backlight as long as any button is pressed and will remain On for 10 seconds after the button is released.

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 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.
Getting Started

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.

NOTE
Some channels, frequency bands and countries of use might not be able to operate in High Power mode.

Call/Enter/Setup Button
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.

Operating Your Radio

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.

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.

Marine (VHF) Mode Programming
Programming these features will allow you to customize certain features of this radio to enhance your “On-Water” audio needs.

Start from Marine Standby mode to begin Marine (VHF) Setup programming. 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
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 tune 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.

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 52). 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 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 and ON or OFF flashing.
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.
Setup Mode Programming

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 LCD will display the letter “C” and 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.

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 and ON or OFF flashing.
2. Press Channel Up/Down button to select ON or OFF.
3. Press Call/Enter/Setup button to save entry.

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 and ON or OFF flashing.
2. Press Channel Up/Down button to select ON or OFF.
3. Press Call/Enter/Setup button to save entry.

You have now ended Marine (VHF) Setup mode programming and will enter Marine Standby mode.

Weather (WX) Mode Programming

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.
2. Display will show WX Alert icon and ON or OFF flashing.
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 SCAN icons, ON or OFF is flashing.
2. Press Channel Up/Down button to select ON or OFF.
3. Press the Call/Enter/Setup button to save entry.

You have now ended the WX Setup programming mode and will enter the WX Alert Standby mode.

**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.
- Radio is in VHF Standby.
- WX received signal level falls below a preset level.
**Standby/Receive and Transmit**

**Marine Standby and Receive (Rx) Mode**

Marine Standby mode is the default mode for the radio whenever it is turned on. From this mode, you can change current settings by becoming familiar with the different key functions in Marine Standby mode. While in Marine Standby mode, the user will be able to transmit by pressing the Push to Talk (Talk) button. Signals in Receive (Rx) mode will be received on the selected channel(s), and alerts broadcast by NOAA will activate the corresponding NOAA weather alert channels in your radio.

**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.

**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.

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. If the Battery Power icon begins blinking on the LCD when the Talk button is pressed, the radio will NOT transmit.

**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 63 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.

**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.

**NOTE**
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.

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 Standby channel.
Advanced Operation

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 20 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 TRI and MEM icons on the display will turn On.

NOTE
The main channel number will flash to indicate channel position. If there is no input activity for 15 seconds, the radio will sound two (2) 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.

Using Tri-Watch

Tri-Watch Scan Mode:
1. From Marine Standby mode, press the TRI-WATCH button. The TRI icon will appear on the LCD display and the radio will scan through the three (3) Tri-Watch memory channels.

2. 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.

3. Press the Channel Up/Down button to resume scanning the Tri-Watch channels or to change the scan direction.

4. 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.
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 33 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 activated and displayed.

To Program Memory Locations:
1. Press and hold the MEM/ESC button for two (2) seconds. The memory location number will start flashing 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. The memory channel number will stop flashing and the channel number will start flashing.
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 number will flash again.
6. Press and hold the MEM/ESC button for two (2) seconds. This will return the radio to Memory mode.
7. Press and release the MEM/ESC button again to 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.

To Exit Memory Location Mode:
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 start flashing 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. The memory channel number will stop flashing and the channel number will start flashing.
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.
6. Press and hold the MEM/ESC button for two (2) seconds. This will return the radio to Memory mode.
7. Press and release the MEM/ESC button again to return to Marine Standby mode.
Advanced Operation

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 20 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. The SCAN icon will show on the LCD.
2. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location.
3. Press the Channel Up/Down button to resume scanning the Channel Scan channels 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.

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 20 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 30.

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 SCAN and MEM icons will show on the LCD.
3. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location.
4. Press the Channel Up/Down button to resume scanning the Memory Location Scan channels or to change the scan direction.
5. To EXIT Memory Location Scan mode, press the SCAN button again. The SCAN and MEM icons will disappear from the LCD and the radio will return to Marine Standby mode.
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 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 LCD will display the following “burp” as shown to the left.
4. Hold the radio with the speaker grill down to help the water drain out.
5. Press the ESC key at any time to cancel the BURP feature.

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></td>
<td>Batteries not installed properly</td>
<td>Remove batteries and reinstall according to polarity markings</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></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>Re-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></td>
<td>Signal is blocked by terrain</td>
<td>Move until you have a “line-of-sight” to the other station</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, 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.
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 20-27.

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.”

- 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.
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. 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 marina to bring the fuel you need or to give you a tow.

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 the Appendix 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. These 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

Marine Emergency Signals
The three (3) spoken international emergency signals are:

- **MAYDAY**
  The distress signal **MAYDAY** is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance.

- **PAN**
  The urgency signal **PAN** is used when the safety of the vessel or person is in jeopardy. (This signal is properly pronounced pahn.)

- **SECURITE**
  The safety signal **SECURITE** is used for messages about the safety of navigation or important weather warnings. (This signal is properly pronounced see-cure-ee-tay.)

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.

Emergency Messages and 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”
“This is 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. 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.
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.

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**Specifications**

| 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:** |
| LiON: 8 hours @ 6 watts, 16 hours @ 1 watt |
| Alkaline: 18 hours @ 6 watts, 35 hours @ 1 watt |
| **Current Drain:** |
| Standby | 40 mA |
| Receive (Rx) | 200 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:** |
| 20 dB Quieting | 0.35 uV |
| 12 dB Sinad | 0.30 uV |
| **Adjacent Channel Selectivity** | -60 dB |
| **Intermodulation and Rejection** | -60 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 |
| **Spurious Emissions** |
| -60 dB @ High Power, -55 dB @ Low Power |
| **Microphone Type** | Condenser |
| **Frequency Stability** | +/-10 ppm |
| **FM Hum and Noise** | 40 dB |
Appendix

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 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.

Asignación 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 68*, 69, 71, 72, 78A, 79A*, 80A*
Canales activos para pequeñas embarcaciones. Los mensajes deben estar relacionados con 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, 79A, 80A, 88A*
Canales activos para embarcaciones activas solamente. Los mensajes deben estar relacionados con la actividad comercial o las necesidades de la embarcación. Use los canales 8, 67, 72 y 88A solamente para mensajes entre embarcaciones.
### 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.

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### 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, incluidas 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 canadiense. Usted no puede transmitir por estos canales.

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*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.

*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 usuario solamente. Consulte las normas de la FCC o a un operador de radio con experiencia antes de usarlos.
### VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map (Mapa de canales)</th>
<th>Frequency (Frecuencia)</th>
<th>Power Limits (Límites de potencia)</th>
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### Channel Use (English) Uso de canales (Español)

- **Public Correspondence (Marine Operator)**
  - Correspondencia pública (operador marítimo)

- **Port Operations and Commercial, VTS in selected areas**
  - Operaciones portuarias y comerciales; VTS en áreas selectas

- **Public Correspondence (Marine Operator)**
  - Correspondencia pública (operador marítimo)

- **Public Correspondence (Marine Operator)**
  - Correspondencia pública (operador marítimo)

- **Government Only**
  - Entidades gubernamentales solamente

- **West Coast (Coast Guard Only); East Coast (Commercial Fishing)**
  - Costa occidental (guardia costera solamente); Costa oriental (pesca comercial)

- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
  - Correspondencia pública (operador marítimo) operaciones portuarias, movimiento de embarcaciones

- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
  - Correspondencia pública (operador marítimo) operaciones portuarias, movimiento de embarcaciones

- **Port Operations, VTS in selected areas**
  - Operaciones portuarias; VTS en áreas selectas

- **Intership Safety**
  - Seguridad entre embarcaciones

- **Public Correspondence (Marine Operator), Port Operations, Ship Movement**
  - Correspondencia pública (operador marítimo) operaciones portuarias, movimiento de embarcaciones

- **Commercial**
  - Comerciales

- **Commercial (Intership Only)**
  - Comercial (entre embarcaciones solamente)

- **Boater Calling Channel, Non-Commercial (Recreational)**
  - Canal de llamada de la tripulación, no comercial (recreativo)

- **Commercial**
  - Comerciales

- **Commercial, VTS in selected areas**
  - Comercial; VTS en áreas selectas

- **Port Operations, VTS in selected areas**
  - Operaciones portuarias; VTS en áreas selectas

- **Intership Navigation Safety (Bridge-to-Bridge)**
  - Seguridad marítima 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

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*Percentages may vary due to rounding.*
### VHF Marine Channel Assignments

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<tr>
<th>Channel Number</th>
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</table>

**Channel Use (English)**

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

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<th>Channel Number</th>
<th>USA EE.UU.</th>
<th>Int’l Canada</th>
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# VHF Marine Channel Assignments

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<th>Channel Use (English)</th>
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</table>

## Channel Use (English)

### Port Operations
Operaciones portuarias

- U.S. (Commercial). Used for bridge-to-bridge communications in lower Mississippi River (Intership Only); Canada (Commercial Fishing), S&R
  - EE.UU. (comercial). Usado para comunicaciones de puente a puente, en la parte inferior del Río Misisipi (entre embarcaciones solamente); Canadá (pesca comercial) (transmisión y recepción)

- Non-Commercial (Recreational)
  - No comercial (recreativo)
- U.S. (Non-Commercial, Recreational); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
  - EE.UU. (no comercial, recreativo); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)

### Digital Selective Calling
(Las comunicaciones verbales están prohibidas)

- U.S. and Canada (Non-Commercial, Recreational); International (Port Operations, Ship Movement)
  - EE.UU. y Canadá (no comercial, recreativo); Internacional (operaciones portuarias, movimiento de embarcaciones)

- Non-Commercial (Intership Only)
  - No comercial (entre embarcaciones solamente)

- U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
  - EE.UU. (operaciones portuarias); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)

- U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
  - EE.UU. (operaciones portuarias); Canadá (pesca comercial solamente); Internacional (comunicaciones entre embarcaciones, operaciones portuarias, movimiento de embarcaciones)

- Port Operations (Intership Only)
  - Operaciones portuarias (entre embarcaciones solamente)

- Port Operations (Intership Only)
  - Operaciones portuarias (entre embarcaciones solamente)

- Port Operations (Intership only). Restricted to communications with pilots for movement and docking of ships.
  - Operaciones portuarias (entre embarcaciones solamente). Restringido a comunicaciones con pilotos para el movimiento y atraque de embarcaciones.
## VHF Marine Channel Assignments

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<thead>
<tr>
<th>Channel Number</th>
<th>USA (EE.UU.)</th>
<th>Int’l (Internac)</th>
<th>Canada (Canadá)</th>
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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

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<th>Channel Number</th>
<th>RX Frequency MHz</th>
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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**
A special alkaline battery tray (P/N CM 110-011) is available as an optional accessory to have as an emergency backup. By using six (6) 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.

**Long Life Battery**
A long life replacement battery. P/N CM 110-010. 1900 mAh LiON replacement battery. Can be used with the charger included with this radio. The radio will NOT float with this battery attached.