

Cobra MARINE®

Owner's Manual

VHF MARINE RADIO
MR HH125

Nothing Comes Close to a Cobra®

English

Printed in China Part No. 480-426-P Version E

Our Thanks to You and Customer Assistance

Introduction

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

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.

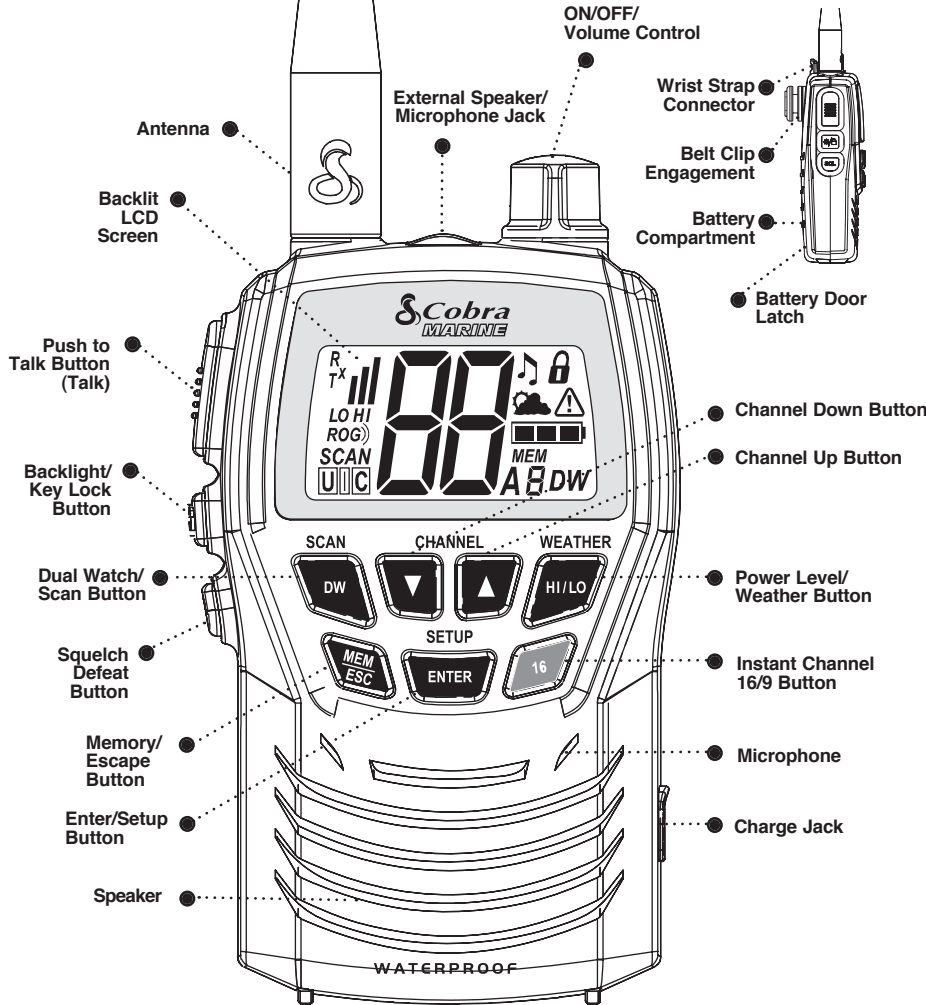
www.cobra.com (on-line: Frequently Asked Questions).
English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside the U.S.A.

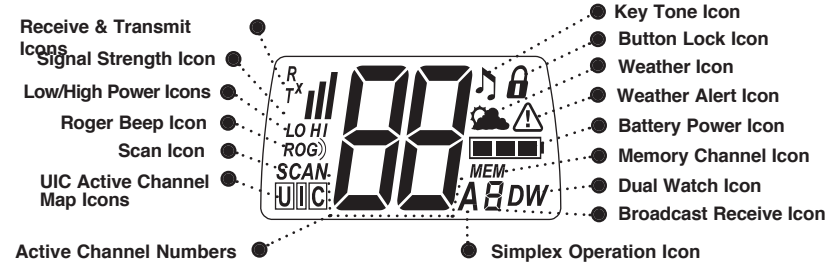
Contact Your Local Dealer

©2011 Cobra Electronics Corporation™
6500 West Cortland Street
Chicago, Illinois 60707 USA
www.cobra.com

A1 English



Backlit LCD (Liquid Crystal Display) Screen



Product Features

Power Settings

Select 1 or 3 watts of output power for near or distant calling.

USA/International/Canada Channels

Operate on any of the three (3) different channel maps set up for these areas.

All NOAA Weather Channels

Instant access to all National Weather Channels, 24 hours a day.

Emergency Weather Alert

Receive NOAA alerts when threatening weather is nearby.

Waterproof

Meets JIS4 waterproof standards.

Key Lock

Prevents accidental setting changes when key lock is set.

Channel Scan/Memory Scan

Scan through all or memorized channels to find conversations in progress.

Instant Channel 16/9

Provides instant access to priority Channel 16 and calling Channel 9.

Dual-Watch

Use to monitor two (2) channels at once – Channel 16 and one programmable channel.

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.

Rechargeable NiMH (Nickel-Metal Hydride) Batteries

Five (5) rechargeable NiMH batteries supplied with the unit provide extended operating time compared to alkaline batteries and have no memory effect. Five (5) AAA alkaline batteries may also be used for emergency backup power.

12V Power Cord Included

Charge the NiMH batteries in a car or boat.

Speaker/Mic Jack

Allows connecting optional Cobra Lapel Speaker/Mic.

Memory Channels

Allows programming of up to ten (10) VHF memory channels.

Signal Strength Meter

Shows the strength of incoming or outgoing signals.

Illuminated Buttons

Allows high visibility of all function buttons.



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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 has been tested and found to comply with the FCC RF exposure limits for use by the “General Population” and Industry Canada RF exposure limits for use by the “General Public.” 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:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- 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.

General Precautions

The following **WARNINGS** and **NOTICE** information on the following page 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 (5cm) 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.



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 NiMH (Nickel-Metal Hydride) rechargeable batteries.

- Use only the Cobra power cord to recharge NiMH batteries in the radio.
- Do not short circuit the batteries.
- When replacing the batteries, dispose of the old batteries properly. The NiMH batteries may explode if disposed of in a fire.
- Do not attempt to operate your radio while recharging the batteries.

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 3 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.

VHF Marine Radio Procedures

If you are not familiar with or need to brush up on the protocols that must be followed when using a VHF Marine Radio, please study the section beginning at page 28 before putting your radio into service.

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.

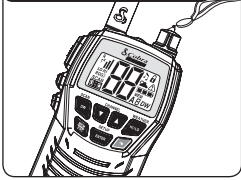
FCC Warning: Replacement or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Cobra may cause a violation of the technical regulations of part 80 of the FCC Rules, or violation of type acceptance requirements of part 2 of the rules.

Included in this Package

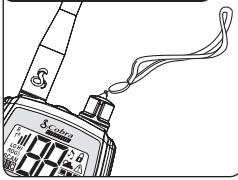
Included in this Package

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

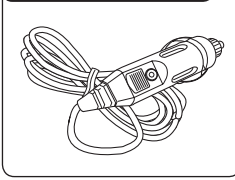
Radio



Wrist Strap



12V Power Cord

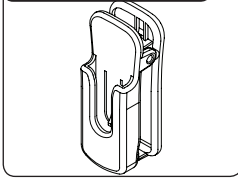


For connection to 12-volt power sources.

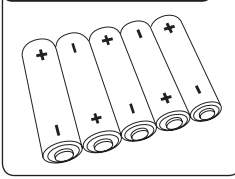
Operating Instruction Manual



Spring-Loaded Belt Clip



5 Rechargeable NIMH Batteries



Wrist Strap, Belt Clip and External Speaker/Mic

Wrist Strap and Belt Clip

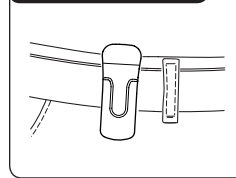
Wrist Strap



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 Secured to Belt

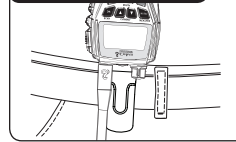


Belt Clip

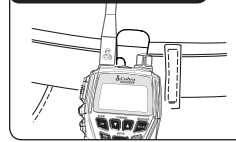
Use the spring-loaded belt clip to carry the radio on your person.

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 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.

Removing the Radio

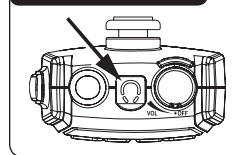


Secure Radio



External Speaker/Microphone Jack

Speaker/Microphone Jack



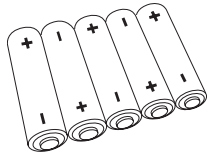
Your radio can be fitted with an optional External Speaker/Microphone (not included), freeing your hands for other tasks. Contact your local CobraMarine® dealer or Cobra® directly for optional accessories.

To attach the external speaker/microphone:

1. Open the speaker/microphone tab on top of the radio.
2. Insert the plug into the speaker/microphone jack.

Batteries and Charging

Install Batteries



The radio is shipped with five (5) NiMH rechargeable batteries.



WARNING

The 12V power cord supplied with this radio is only to be used with its rechargeable batteries. Do not attempt to charge any other type of batteries in the radio as fire, explosion or battery damage will occur. Rechargeable battery life will be prolonged if extreme ambient temperatures are avoided.

When your rechargeable batteries begin to discharge too quickly, it is time to install new batteries. Your radio will also operate with five (5) high-quality AAA alkaline batteries.

Installing the Batteries

Install the AAA batteries in the slots in the battery

compartment with the batteries oriented according to the polarity (+ & -) marks in the slots.

Initial Charge

The Cobra-provided NiMH batteries may be charged in a car or boat using the appropriate 12V power cord.

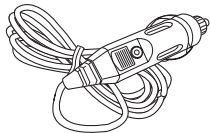
1. Insert the power cord into the side of the radio.
2. Insert the other end of the power cord into a 12V power source.
3. Observe that the red light on the power cord glows to indicate that power is present.
4. Allow the batteries to charge for 12 to 14 hours before use.



WARNING

Only the rechargeable NiMH batteries can be recharged. You MUST use the charging device provided with this radio. Do not substitute any other type of charging adapter. Battery damage, fire or explosion may result. It is equally important to prevent the NiMH batteries from freezing to obtain best performance from them.

Power Source



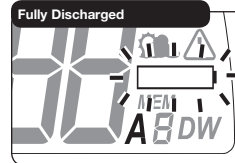
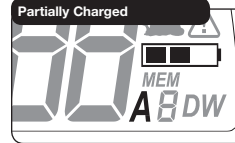
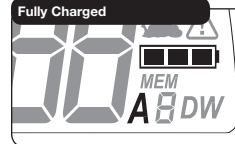
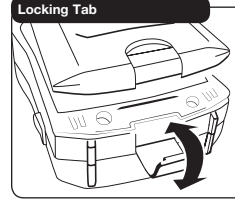
To Remove Batteries from Radio

1. Pivot the locking tab on the battery cover and remove it.
2. Pull the individual batteries out of the radio housing.



NOTICE

NiMH batteries are toxic. Please dispose of properly. Some marine suppliers accept old batteries for recycling and some municipal waste disposal agencies have special provisions for battery disposal.



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.

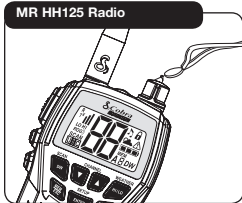


NOTICE

Use only the 12V power cord provided by Cobra. Do not use the power cord with alkaline batteries; only the NiMH batteries are rechargeable. Spent alkaline batteries must be discarded and replaced.

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

Getting Started



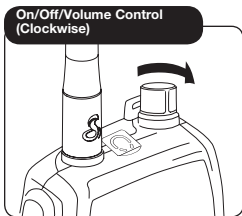
Refer to the foldout at the front of this manual to identify the various controls and indicators on your radio. Throughout this manual you will be instructed to “Press” or to “Press and Hold” various buttons (except “Push to Talk”) on the radio. “Press” means a momentary press of approximately one (1) second. “Press and Hold” means to hold the button down for approximately three (3) 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.

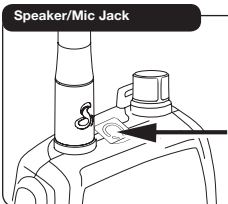
Power Saver

Your radio has a unique circuit designed to extend battery life. If there are no transmissions, signals, or button presses for ten (10) seconds, the radio will automatically switch to **Power Save** mode. Signal reception or any button press will take the radio out of **Power Save** mode.

Volume Control

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

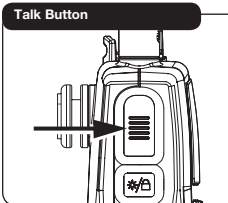
- To increase the volume, turn the **On/Off/Volume** control clockwise.
- To decrease the volume, turn the **On/Off/Volume** control counterclockwise.



Radio Speaker and Microphone

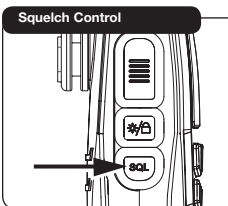
The internal **Radio Speaker** and **Microphone** are located on the bottom front face of the radio below the lower control buttons.

An **optional Speaker/Microphone** jack is located at the top of the radio between the antenna and the **On/Off/Volume** control. Flip the protective cap open and insert the plug into the jack.



Talk Button

Press and hold the **Talk** button to transmit messages. Release the **Talk** button to stop transmitting. If the **Talk** button is pressed while on a receive only channel, a three beep error signal will sound.



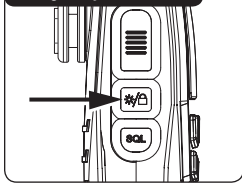
Squelch Control

This radio is equipped with an automatic squelch control. Squelch filters weak signals and radio frequency (RF) noise so you can hear the main signal clearly.

To receive weak signals, the automatic squelch can be turned Off (opened) by pressing the **Squelch Defeat** button. You will likely hear a lot of static and RF noise along with the weak signal.

Press the **Squelch Defeat** button for up to five (5) seconds to briefly open squelch. To hold squelch open for longer periods, press and hold the **Squelch Defeat** button for more than five (5) seconds. Squelch will remain open until you press the **Squelch Defeat** button again or you change channels.

Backlight/Key Lock Button



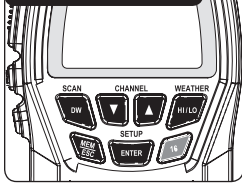
Backlight/Key Lock Button

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, a press of the **Backlight/Key Lock** button will turn it Off.

Key Locked Buttons



Key Lock

To prevent accidental changes to your settings, you can lock all of the buttons on the front of the radio along with the Squelch Defeat 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 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.

Key Lock Icon



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** buttons.

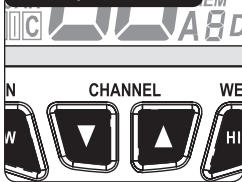
If you are on Channel 88, pressing the **Channel Up** button will advance to Channel 01. If you are on Channel 01, pressing the **Channel Down** button will advance to Channel 88.

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 buttons and not during fast advance.

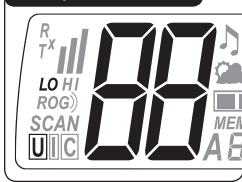
If the new channel selected is restricted to low power, the radio will automatically switch to **Low Power** mode and the **Low Power** icon will appear on the LCD.

If the radio is in the **Key Lock** mode, the channel will not change and the three (3) beep error signal will sound.

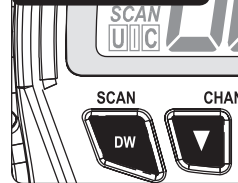
Channel Up/Down Buttons



Currently On Channel 88



Scan Button



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 **Channel Up/Down** button to change the scan direction.

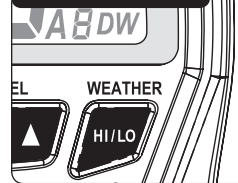
When a signal is received in **SCAN** mode, the radio will pause 10 seconds before resuming **SCAN** operation. The scan will stop when the **Talk** button is pressed.



NOTE

Memory channels need to be saved to effectively enter the **Memory Channel** mode and scan all memory channels. See page 25.

HI/LO Power Button



High/Low (HI/LO) Power Button

Your radio can transmit selectively at 1 or 3 watts of power. Cobra suggests you maintain the low power setting for short-range communication. You will conserve battery life and avoid overpowering nearby stations by using a low power 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 HI/LO Power Modes:

Press the **Power Level/Weather** 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.

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.



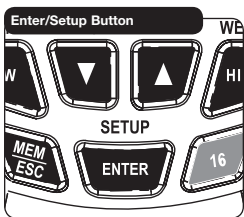
NOTE

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. Pressing any of the non-programming buttons (Talk, Dual-Watch/Scan, Power Level/Weather, Instant Channel 16/9) will also exit **Setup** mode and invoke the button function or return the radio to **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

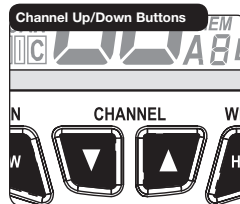
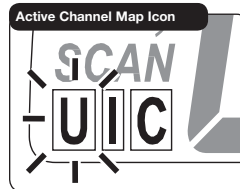
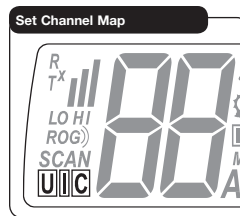
Programming these features will allow you to customize certain features of this radio to enhance your “On-Water” audio needs.



Start from **Marine Standby** mode to begin **Marine (VHF) Setup** programming. Press and hold the **Enter/Setup** button for three (3) seconds to enter the programming mode.

U.S.A./International/Canada Channel Maps

Three (3) sets of VHF Channel Maps have been established for marine use in the U.S.A., Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table in the Appendix). 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:

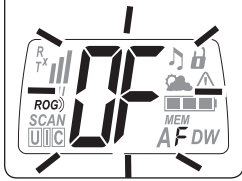
1. The **Channel Map** mode is the first mode that begins the **Marine (VHF) Setup** programming.
2. **U**, **I** and **C** will display, with the current setting (the **U** icon is the default) flashing.
3. Press **Channel Up/Down** buttons to select the **U**, **I** or **C** icon.
4. Press **Enter/Setup** button to save this entry and move to the next setup programming mode – **Roger Beep**.



NOTE

One or two of the channel maps might have been disabled for sales of this radio in some countries.

Roger Beep Mode

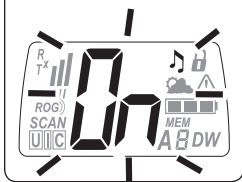
**Roger Beep Mode**

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** buttons to select ON or OFF. **ROG** will be displayed when On.
3. Press **Enter/Setup** button to save this entry and move to the next setup programming mode – **Key Tone**.

Key Tone Mode

**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** buttons to select ON or OFF.
3. Press **Enter/Setup** button to save all entries.

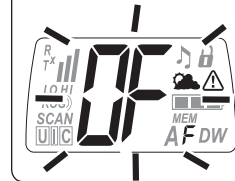
You have now ended **Marine (VHF) Setup** programming mode and will enter **Marine Standby** mode.

Weather (WX) Alert Mode Programming

Programming these features will allow your radio to listen to all NOAA Hazard Alert radio signals and warnings.

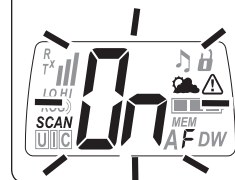
Start from **WX Standby** mode (see page 20) to begin **WX Alert Setup** programming. Press and hold the Enter/Setup button for three (3) seconds to enter the programming mode.

WX Alert On/Off

**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** and **Channel Down** buttons to select ON or OFF.
4. Press **Enter/Setup** button to save this entry and move to the next setup programming mode.

WX Auto Search (SCAN)

**To Set WX Auto Search (SCAN) On or Off:**

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

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

When **WX Alert** is On and **WX Auto Search (SCAN)** is Off, the unit will continuously check the selected WX channel from Marine or WX Standby for the WX Alert tone. When the tone is detected, the radio will sound an alert tone and flash the **WX Alert** icon. The unit will remain on that WX channel until you switch back to **Marine Standby** mode.

When **WX Auto Search (SCAN)** is On, the unit will periodically check all ten (10) weather channels from Marine Standby for the WX Alert tone.

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 that are active in **Marine Standby** mode. While in **Marine Standby** mode, the user will be able to transmit by pressing the **Push to Talk (Talk)** button. Users will hear signals on the selected channel(s) in **Receive (RX)** mode and can hear alerts broadcast by the Coast Guard and NOAA.



NOTE

Coast Guard alerts are broadcast on Channel 16 and you need to 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.

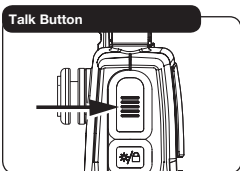
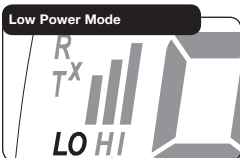
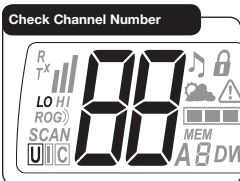
To Transmit a Message:

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.



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

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.

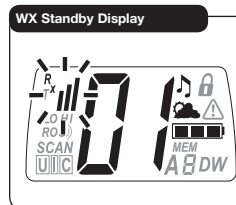
NOAA Emergency Weather Alert

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.

These signals will be received in **Marine** or **Weather Standby** modes as described below.



Weather (WX) Standby Mode

To enter the **WX Standby** mode, press and hold the **Power Level/Weather** button. All common operating functions of the radio will work the same in **WX Standby** mode as they do in the normal **Marine Standby** mode. The radio will be monitoring for all alerts in the background when in the **WX Standby** mode.

WX Alert Standby Mode

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 1050Hz alert tone, the radio will sound a series of beeps.

WX Auto Search (SCAN)



WX Auto Search (SCAN) Mode Function:

The purpose of the **WX Auto Search (SCAN)** function is to enable the receiver to automatically scan for Weather Alerts on all ten (10) WX channels while the radio is in **Marine Standby** status. This allows use of the communication functions of the radio without missing a Weather Alert when:

- **WX Auto Search (SCAN)** function is On.
- **WX Alert** is On.
- The radio is tuned to a **Marine VHF** channel and has entered **Power Save** mode (meaning there is no signal activity or user input for 10 seconds).
- The radio software has detected that the current **WX** channel signal level has dropped below a preset minimum level or is gone completely.

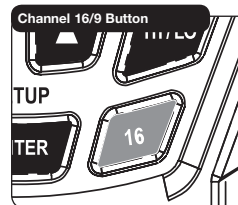
Under these conditions, the software will scan the **WX** channels looking for an active **WX** channel. When an active **WX** channel is found, it will stop the scan and use the new **WX** channel to look for the standard 1050Hz alert tone.

Advanced Operation

Several capabilities of your radio can add to its versatility and ease of use even though they are not needed for its basic 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 **Standby** channel.

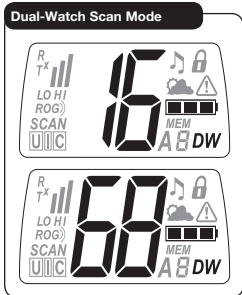
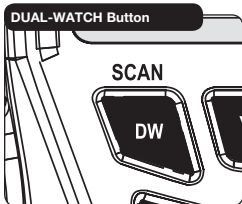


NOTE

This key is labeled as “16” for maximum visibility.

Dual-Watch Mode

Dual-Watch mode gives you one (1) button access to scan a total of two (2) channels of most importance to you. Channel 16 is preprogrammed and will always be one (1) of the scanned locations. The other channel can be any marine VHF channel of your choice.



Using Dual-Watch

1. In **Marine Standby** mode, select the desired channel for Dual-Watch scanning.
2. Press the **Dual-Watch** button. The **DW** icon will appear on the LCD display and the radio will scan channel 16 and the selected channel.
3. A signal on any one (1) of the two (2) channels will stop the scan for 10 seconds to allow you to listen to the traffic on that location.



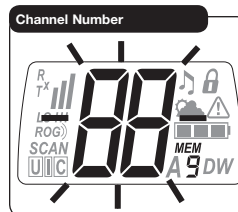
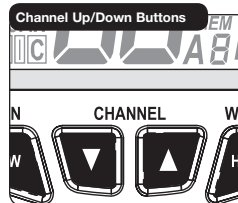
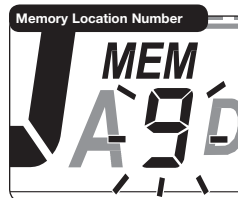
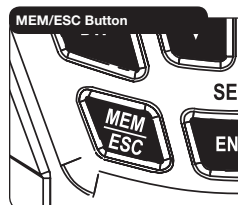
NOTE

After the **Dual-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 **Dual-Watch** channels.

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

Memory Location Mode

Your radio has ten (10) memory locations (numbered 0 to 9) for your most frequently used channels. These memory locations can be selected individually or can be scanned.



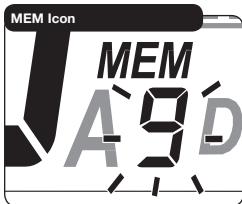
To enter **Memory** mode, press **Memory/Escape** button. The display will show the **MEM** icon and the **Memory Channel** bank will be activated and displayed.

To Program Memory Locations:

1. Press and hold the **Memory/Escape** 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** and **Channel Down** buttons to advance to the memory location (0-9) you want to program.
3. Press the **Memory/Escape** 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** and **Channel Down** buttons to change to the channel you want to store into the selected memory location.
5. Press the **Memory/Escape** button to program that channel. The memory location number will flash again.

Repeat steps 2 through 5 to program as many additional memory locations as you want [up to ten (10) VHF memory channels].

6. Press and hold the **Memory/Escape** button for two (2) seconds. This will return the radio to **Memory** mode.
7. Press and release the **Memory/Escape** button again to return to **Marine Standby** mode.



To Recall a Stored Memory Location:

1. Press the **Memory/Escape** button. The **MEM** icon will be turned On.
2. Press the **Channel Up** or **Channel 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:

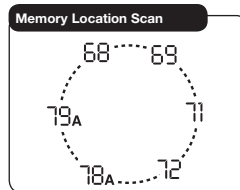
Press the **Memory/Escape** button to return the radio to **Marine Standby** mode. The last channel used in **Marine Standby** mode will now be displayed on the LCD and the **MEM** icon will disappear.

To Erase Stored Memory Locations:

1. Press and hold the **Memory/Escape** 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** and **Channel Down** buttons to advance to the memory location you want to erase.
3. Press the **Memory/Escape** 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** and **Channel Down** buttons to change the channel to read "00" at the selected memory location.
5. Press the **Memory/Escape** button to erase that memory location.

Repeat steps 2 through 5 to erase as many additional memory locations as you want.

6. Press and hold the **Memory/Escape** button for two (2) seconds. This will return the radio to **Memory** mode.
7. Press and release the **Memory/Escape** button again to return to **Marine Standby** mode.



Memory Location Scan Mode

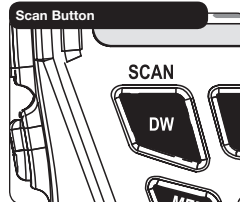
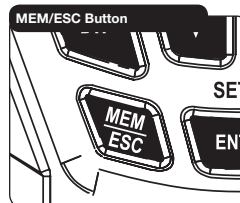
During **Memory Location Scan** mode, the radio will rapidly scan through all programmed memory channels. Whenever any activity is detected on a channel, the radio will stop the scan for 10 seconds to allow you to listen briefly on that channel. It will then continue to scan unless you switch out of **Memory Location Scan** mode.

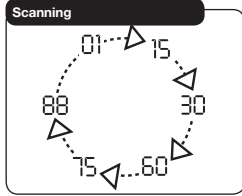
NOTE

If there are fewer than two (2) memory locations programmed in the radio, the **Memory Location Scan** option will not be available. At least two (2) memory locations need to be programmed to use the Scan button.

To Enter Memory Location Scan:

1. From **Marine Standby** mode, press the **Memory/Escape** button.
2. Press the **DUAL WATCH/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** or **Channel 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 **DUAL WATCH/SCAN** button again. The **SCAN** and **MEM** icons will disappear from the LCD and the radio will return to **Marine Standby** mode.



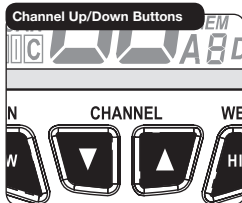
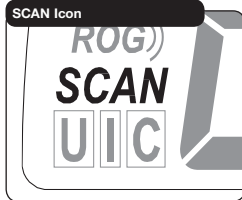
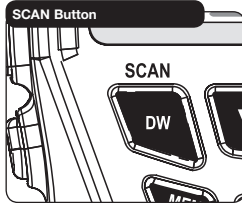


Channel Scan Mode

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

To Enter Channel Scan:

1. From **Marine Standby** mode, press and hold the **DUAL WATCH/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** or **Channel Down** button to resume scanning the **Channel Scan** channels or to change the scan direction.
4. To EXIT **Channel Scan** mode, press and hold the **DUAL WATCH/SCAN** button again. The **SCAN** icon will disappear from the LCD and the radio will return to **Marine Standby** mode.



Maintenance

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

- Keep the radio clean by wiping with a soft cloth and mild detergent. 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

Problem	Possible Cause(s)	Solution(s)
No display on LCD when radio is turned On	Batteries are exhausted Batteries not installed properly	Recharge or replace batteries Remove batteries and reinstall according to polarity markings
NiMH batteries run down quickly	Batteries are at the end of their life	Replace with new batteries
Will transmit at one (1) watt, but not at three (3) watts	Batteries are low Selected channel is limited to one (1) watt	Recharge or replace batteries Switch to another channel
Will not transmit	Selected channel is limited to receive only	Switch to another channel
No sound from speaker	Volume level is too low	Re-adjust volume
No response to button press	Button lock is On	Press Backlight/Key Lock button
No answer to calls	Out of range of other station Signal is blocked by terrain	Switch to three (3) watts or move closer Move until you have a "line-of-sight" to the other station



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. Remember, the lower wattage output 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 or 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 in the appendix.

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 party 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.

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. For a fee, calls can be made 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

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.

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 PAN

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

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 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 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.



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 1-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 One (1) year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is used 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, U.S.A..

Cobra Electronics Corporation™ is a trademark of Cobra Electronics Corporation, U.S.A.

Product Service

For any questions about operating or installing this new Cobra product, or if parts are missing...**PLEASE CALL COBRA FIRST**...do not return this product to the store.

If this product should require factory service, please call Cobra first before sending the product. This will ensure the fastest turnaround time on any repair. If Cobra asks that the product be sent to its factory, the following must be furnished to have the product serviced and returned:

1. For Warranty Repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon of a sales receipt. Make sure the date of purchase and product model number are clearly readable. If the originals are sent, they cannot be returned;
2. Send the entire product;
3. Enclose a description of what is happening with the product. Include a typed or clearly printed name and address of where the product is to be returned, with phone number (required for shipment).
4. Pack the product 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:
Cobra Factory Service
Cobra Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 U.S.A.;
6. If the product is in warranty, upon receipt of the product, it will either be repaired or exchanged depending on the model. Please allow approximately 3 – 4 weeks before contacting Cobra for status. If the product is out of warranty, a letter will automatically be sent with information as to the repair charge or replacement charge.

For any questions, please call 773-889-3087 for assistance.

Specifications

General	
Number of Channels	All U.S., Canadian, International and NOAA Weather Channels
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	6.0 VDC
Battery Life: 5% TX, 5% RX, 90% Standby	NiMH: 9.4 hours @ 3 watts 12 hours @ 1 watt Alkaline: 26 hours @ 3 watts 33 hours @ 1 watt
Current Drain: Standby Receive (Rx) Transmit (Tx)	40 mA 100 mA 1.1 A @ High Power, 700 mA @ Low Power
Temperature Range	-20°C to 50°C
Radio Dimensions	4.0" x 2.4" x 1.2" (102 mm x 62 mm x 31 mm) not including antenna
Radio Weight	0 lbs 5 oz. (228 g) without batteries
Receiver	
Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 20 dB Quieting 12 dB Sinad	0.35 uV 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 or 3 watts
Spurious Emissions	-60 dB @ High Power, -55 dB @ Low Power
Microphone Type	Condenser
Frequency Stability	+/-10 ppm
FM Hum and Noise	40 dB



VHF Marine Channel Assignments

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

The following is a brief outline of the channel assignments in the U.S.A. Channel Map.

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 deberán 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 deberán 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.



Channel Assignments (English)

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.



NOTE

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



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.



NOTA

* 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.



Channel Number Número de canal	Channel Map Mapa de canales			Frequency Frecuencia		Power Limits Límites de potencia
	USA EE.UU.	Int'l Internac	Canada Canadá	Transmit Transm.	Receive Recepción	
01		•	•	156.050	160.650	
01A	•			156.050	156.050	
02		•	•	156.100	160.700	
03		•	•	156.150	160.750	
03A	•			156.150	156.150	
04		•		156.200	160.800	
04A			•	156.200	156.200	
05		•		156.250	160.850	
05A	•		•	156.250	156.250	
06	•	•	•	156.300	156.300	
07		•		156.350	160.950	
07A	•		•	156.350	156.350	
08	•	•	•	156.400	156.400	
09	•	•	•	156.450	156.450	
10	•	•	•	156.500	156.500	
11	•	•	•	156.550	156.550	
12	•	•	•	156.600	156.600	
13	•	•	•	156.650	156.650	1 watt USA and CAN 1 watio EE.UU. y Canadá



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
Public Correspondence (Marine Operator), Port Operations, Ship Movement	Correspondencia pública (operador marítimo) operaciones portuarias,movimiento de embarcaciones
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
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). In U.S. waters, large vessels maintain a listening watch on this channel.	Seguridad marítima entre embarcaciones (de puente de mando a puente de mando). En aguas estadounidenses, las grandes embarcaciones se mantienen vigilantes con sus radios sintonizados en este canal



Channel Number Número de canal	Channel Map Mapa de canales			Frequency Frecuencia		Power Limits Límites de potencia
	USA EE.UU.	Int'l Internac	Canada Canadá	Transmit Transm.	Receive Recepción	
14	•	•	•	156.700	156.700	
15	•			Rx Only	156.750	
15		•	•	156.750	156.750	1 watt CAN and INT 1 vatio Canadá y Internac.
16	•	•	•	156.800	156.800	
17	•	•	•	156.850	156.850	1 watt USA and CAN 1 vatio EE.UU. y Canadá
18		•		156.900	161.500	
18A	•		•	156.900	156.900	
19		•		156.950	161.550	
19A	•		•	156.950	156.950	
20	•	•	•	157.000	161.600	1 watt CAN 1 vatio Canadá
20A	•			157.000	157.000	
21		•	•	157.050	161.650	
21A	•		•	157.050	157.050	
21B			•	RX only	161.650	
22		•		157.100	161.700	
22A	•		•	157.100	157.100	
23		•	•	157.150	161.750	



Channel Use (English)	Uso de canales (Español)
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 (boyas 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)



Channel Number Número de canal	Channel Map Mapa de canales			Frequency Frecuencia		Power Limits Límites de potencia
	USA EE.UU.	Int'l Internac	Canada Canadá	Transmit Transm.	Receive Recepción	
24	•	•	•	157.200	161.800	
25	•	•	•	157.250	161.850	
25B			•	RX only	161.850	
26	•	•	•	157.300	161.900	
27	•	•	•	157.350	161.950	
28	•	•	•	157.400	162.000	
28B			•	RX only	162.000	
60		•	•	156.025	160.625	
61		•		156.075	160.675	
61A	•		•	156.075	156.075	
62		•		156.125	160.725	
62A			•	156.125	156.125	
63		•		156.175	160.775	
63A	•			156.175	156.175	
64		•	•	156.225	160.825	
64A	•		•	156.225	156.225	
65		•		156.275	160.875	
65A	•	•	•	156.275	156.275	
66		•		156.325	160.925	



Channel Use (English)	Uso de canales (Español)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Safety: Continuous Marine Broadcast (CMB) service by MCTS Canada	Seguridad: Transmisión Marítima Continua (CMB) servicio por MCTS Canadá
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Safety: Continuous Marine Broadcast (CMB) service by MCTS Canada	Seguridad: Transmisión Marítima Continua (CMB) servicio por MCTS Canadá
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator) Port Operation, Ship Movement	Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones
U.S. (Government Only); Canada (Coast Guard Only); West Coast (Coast Guard Only); East Coast (Commercial Fishing)	EE.UU. (entidades gubernamentales solamente); Canadá (guardia costera solamente); 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
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
Port Operations and Commercial, VTS in selected areas	Operaciones portuarias y comerciales; VTS en áreas selectas
Public Correspondence (Marine Operator), Port Operations, Ship Movement	Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones
U.S. (Government Only); Canada (Commercial Fishing)	EE.UU. (entidades gubernamentales solamente); Canadá (pesca comercial)
Public Correspondence (Marine Operator), Port Operations, Ship Movement	Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones
Port Operations	Operaciones portuarias
Public Correspondence (Marine Operator), Port Operations, Ship Movement	Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones



Channel Number Número de canal	Channel Map Mapa de canales			Frequency Frecuencia		Power Limits Límites de potencia
	USA EE.UU.	Int'l Internac	Canada Canadá	Transmit Transm.	Receive Recepción	
66A	•	•	•	156.325	156.325	1 watt CAN 1 vatio Canadá
67	•	•	•	156.375	156.375	1 watt USA 1 vatio EE.UU.
68	•	•	•	156.425	156.425	
69	•	•	•	156.475	156.475	
70	•	•	•	RX only	156.525	
71	•	•	•	156.575	156.575	
72	•	•	•	156.625	156.625	
73	•	•	•	156.675	156.675	
74	•	•	•	156.725	156.725	
75		•		156.775	156.775	1 watt Only Int. Sólo 1 vatio Int.
76		•		156.825	156.825	1 watt Only Int. Sólo 1 vatio Int.
77	•	•	•	156.875	156.875	1 watt USA and CAN 1 vatio EE.UU. y Canadá



Channel Use (English)	Uso de canales (Español)
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 de mando a puente de mando en la parte baja del Río Misisipí (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 (Voice communications not allowed)	Llamadas selectivas digitales (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

Appendix

Channel Number Número de canal	Channel Map Mapa de canales			Frequency Frecuencia		Power Limits Límites de potencia
	USA EE.UU.	Int'l Internac	Canada Canadá	Transmit Transm.	Receive Recepción	
78		•		156.925	161.525	
78A	•		•	156.925	156.925	
79		•		156.975	161.575	
79A	•		•	156.975	156.975	
80		•		157.025	161.625	
80A	•		•	157.025	157.025	
81		•		157.075	161.675	
81A	•		•	157.075	157.075	
82		•		157.125	161.725	
82A	•		•	157.125	157.125	
83		•	•	157.175	161.775	
83A	•		•	157.175	157.175	
83B			•	RX only	161.775	
84	•	•	•	157.225	161.825	
84A	•			157.225	157.225	
85	•	•	•	157.275	161.875	
85A	•			157.275	157.275	
86	•	•	•	157.325	161.925	
86A	•			157.325	157.325	
87	•	•	•	157.375	161.975	
87A	•			157.375	157.375	
88	•	•	•	157.425	162.025	
88A	•			157.425	157.425	



VHF Marine Channel Assignments

Appendix

Channel Use (English)	Uso de canales (Español)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Non-Commercial (Recreational)	No comercial (recreativo)
Port Operations, Ship Movement	Operaciones portuarias, movimiento de embarcaciones
Commercial (Also Non-Commercial only in Great Lakes)	Comercial (en los Grandes Lagos también no comercial)
Port Operations, Ship Movement	Operaciones portuarias, movimiento de embarcaciones
Commercial (Also Non-Commercial only in Great Lakes)	Comercial (en los Grandes Lagos también no comercial)
Port Operations, Ship Movement	Operaciones portuarias, movimiento de embarcaciones
U.S. (Government Only; Environmental Protection Operations)	EE.UU. (entidades gubernamentales solamente; operaciones de protección medioambiental)
Public Correspondence (Marine Operator), Port Operation, Ship Movement	Correspondencia pública (operador marítimo), operaciones portuarias, movimiento de embarcaciones
U.S. (Government Only); Canada (Coast Guard Only)	EE.UU. (entidades gubernamentales solamente); Canadá (guardia costera solamente)
Canada (Coast Guard Only)	Canadá (guardia costera solamente)
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
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Marine Operator)	Correspondencia pública (operador marítimo)
Public Correspondence (Ship to Coast). In U.S. only within 75 miles of Canadian Border.	Correspondencia pública (entre embarcación y costa). En los EE.UU., solamente dentro de los casi 121 kilómetros (75 millas) de la frontera canadiense
Commercial Intership only	Comercial entre embarcaciones solamente



VHF Marine Channel Assignments (English)



NOTE

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



NOTE

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

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.



Weather Channel Assignments

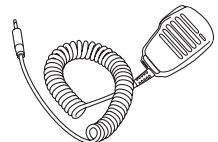
Asignaciones de canales meteorológicos

Channel Number Número de canal	RX Frequency MHz Frecuencia de recepción (MHz)	Weather Channel Weather Channel
1	162.550	NOAA
2	162.400	NOAA
3	162.475	NOAA
4	162.425	NOAA
5	162.450	NOAA
6	162.500	NOAA
7	162.525	NOAA
8	161.650	Canada
9	161.775	Canada
10	163.275	NOAA

Accessories

Optional Cobra accessories can enhance the use of the radio and offer convenience to the end user.

Lapel Speaker/Microphone



Lapel Speaker/Microphone

A speaker/microphone, that attaches to your lapel.
Order 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** button on the lapel speaker/microphone allows you to answer any incoming call.

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