



Owner's Manual



VHF MARINE RADIO MR HH350 FLT EU

Nothing Comes Close to a Cobra®

English

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.

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, please contact your local dealer.

This equipment is intended for use in:

AT	✓	CY	✓	FI	✓	IE	✓	MK		RO	
BA		CZ	✓	FR	✓	IS	✓	MT	✓	SE	✓
BE	✓	DE	✓	GB	✓	IT	✓	NL	✓	SI	✓
BG		DK	✓	GR	✓	LT	✓	NO	✓	SK	✓
CH	✓	EE	✓	HR		LV	✓	PL	✓	TR	✓
CS		ES	✓	HU	✓	LU	✓	PT	✓	UA	

✓Countries of use

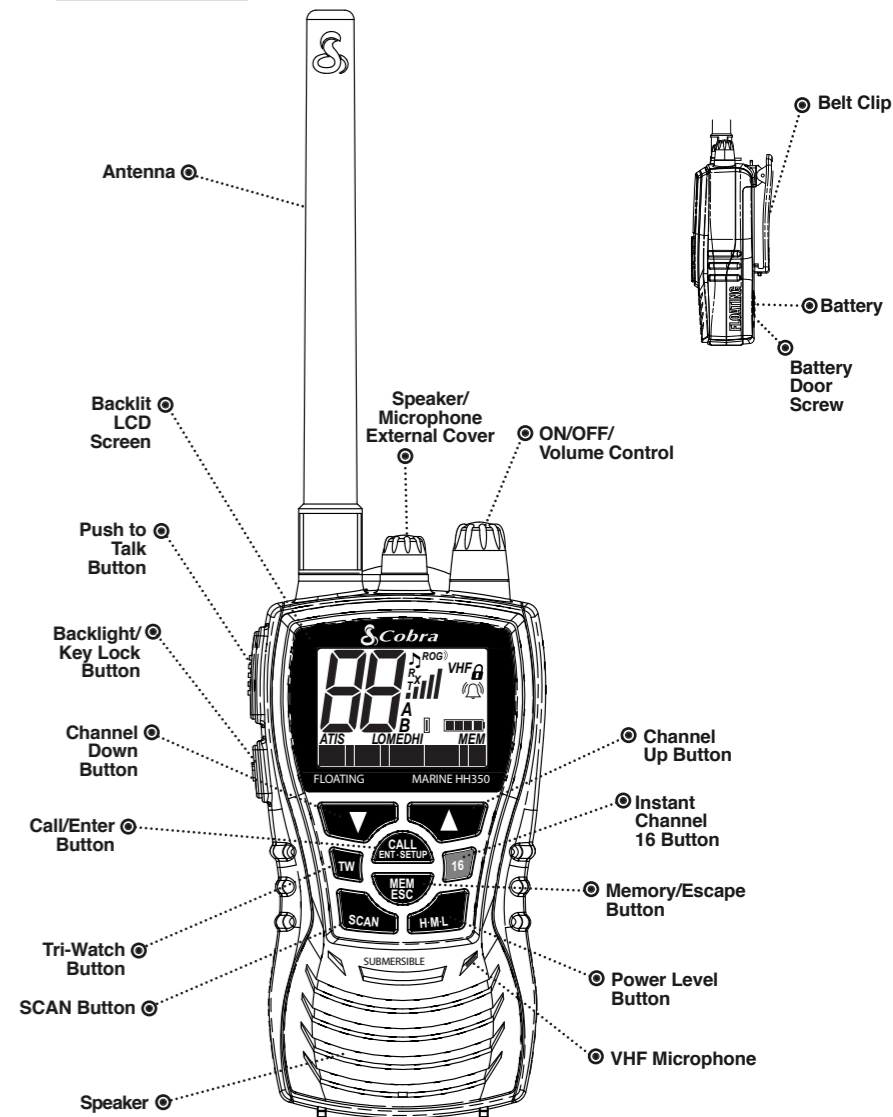
For Warranty, Product Service and Accessory Information

Please contact your local dealer or distributor. See the enclosed leaflet that provides contact information for the CobraMarine international distributors.

A1 English

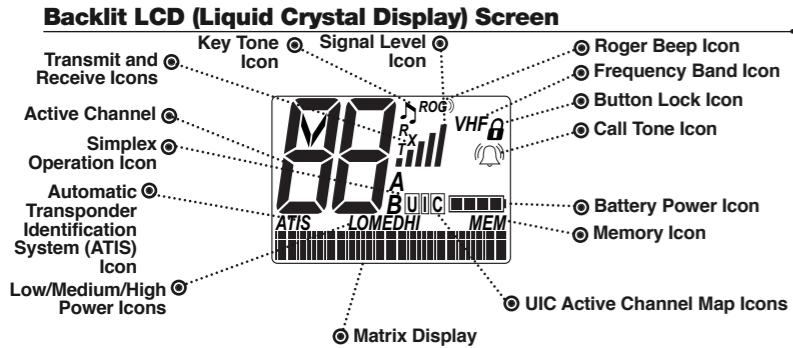
Radio Controls and Indicators

Introduction



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6500 West Cortland Street
Chicago, Illinois 60707 USA
www.cobra.com

A2 English



Product Features

Power Settings*

Selectable power settings produce 1, 3 or 6 watts of output power for near or distant calling.

* Units sold in Australia will transmit at 5 watts maximum.

USA/International/Canada Channels

Allows operation on any of the three (3) different channel maps established for these areas.

Submersible to JIS7 Standards

Waterproof to 3.3 ft (1 m) of water for 30 minutes.

Button/Key Lock

Prevents accidental setting changes when button lock is set.

Channel Scan/Memory Scan

Use to scan through unlimited channels or memory locations to find conversations in progress.

Matrix Display

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

AA Battery Compatible

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

Instant Channel 16

Provides instant access to priority Channel 16.

Tri-Watch

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

Floating

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

220V/12V Charger Included

Use to charge battery pack, at home, in a car or in a boat.

Product Features (continued)

Locking Desktop Charger

Holds the radio or battery in place while charging. Vertical or horizontal mounting.

Call Tones (Selectable)

10 selectable call tones

Automatic Transponder Identification System (ATIS)

Capable of operating within the Automatic Transponder Identification System. ATIS includes data at the end of a transmission for station identification.

Speaker/Mic Jack

Allows connecting optional Cobra Lapel Speaker/Mic and other Cobra accessories.

Unlimited Memory Channels

Allows programming of unlimited VHF memory channels.

Signal Strength Meter

Shows the strength of incoming or outgoing signals.

Illuminated Buttons

Allows high visibility of all function buttons.

Roger Beep Tone (Selectable)

Confirmation tone indicates the completion of the user's transmission and signals to others it is clear to talk. On or Off selectable.

BURP

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

Left blank intentionally for your notes



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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.

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 recommended RF exposure limits established for the radio.

Changes or modifications to your radio MAY VOID its compliance with government rules and make it illegal to use.



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 5 cm (2 inches) away from yourself and others when transmitting.

DO NOT transmit more than 40% of the time the radio is in use — 40% duty cycle. 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 recommended RF exposure limits or create other dangerous conditions.



NOTICE

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

AVOID using the radio below -20°C and above +41/170°C.

AVOID storing the radio below -20°C and above +60°C.

KEEP your radio at least 0,9 m (3 ft) away from your vessel's magnetic navigation compass.

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

This radio is supplied with a lithium-ion (LiION) rechargeable battery pack.

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





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 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 coastguard does not endorse mobile phones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a mobile phone, only the party you call will be able to hear you. Additionally, mobile phones may have limited coverage over water and can be hard to locate. If you do not know where you are, the coastguard will have difficulty finding you if you are using a mobile phone.

However, mobile phones can have a place on board where mobile 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 33 before putting your radio into service.



Licensing Information

The radio operates on all currently allocated marine channels and is switchable for use according to International, Canadian or U.S.A. regulations. It features instant access to emergency Channel 16 by pressing one key.

Station License

The UK requires a ship's radio license and a marine radio operator's certificate before transmitting equipment can be used aboard a vessel. Other European countries have specific requirements of their own.

For detailed information and applications, contact the Radio Licensing Centre run by OFCOM in the UK. In other countries, contact the relevant national postal or telecommunications authority.

Canadian or U.S.A. Station License

If your vessel will be entering the sovereign waters of Canada or the U.S.A., you should contact Industry of Canada, Radio Regulatory Branch or the U.S. FCC (Federal Communications Commission) for licensing and operating information.

Radio Call Sign

A radio call sign is included as part of the ship's radio license in the UK. Other countries may have different practices; contact your local regulatory authority for information.

User Responsibility and Operating Locations

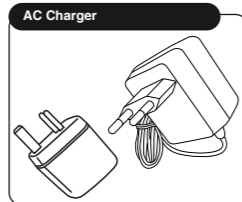
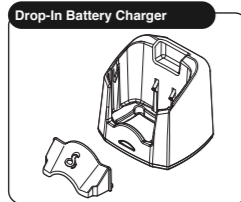
All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The transmitting frequencies in your radio are reserved for maritime use; any frequency you use for transmission must be specifically included on your ship's license. 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. The use of ATIS is prohibited outside the European inland waterways covered by the Basel Agreement.



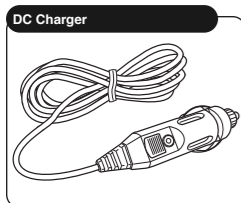
Included in this Package

Included in this Package

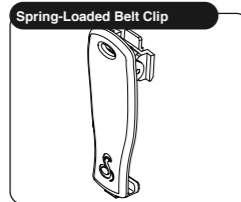
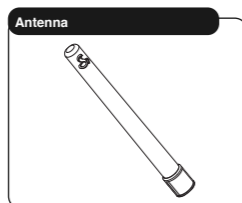
You should find all of the following items in the package with your CobraMarine VHF radio:



For connection to 220-volt power source.

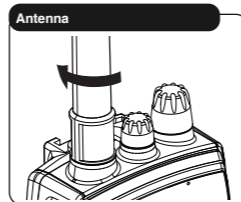


For connection to 12-volt power sources.



Install/Remove Antenna

Install/Remove Antenna



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

Batteries and Charger

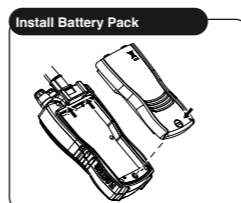


The radio is shipped with a sealed lithium-ion (LiON) battery pack (P/N CM 110-027) that is rechargeable.



WARNING

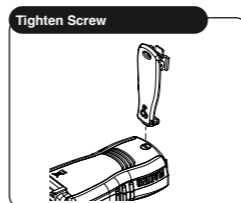
The charger provided for this radio is only to be used to charge the battery pack provided. Do not charge any other type of batteries in the charger as fire, explosion or battery damage will occur. Avoiding extreme room temperatures will also help prolong the life of the battery pack for the radio.



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

Installing the Battery Pack

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



Wrist Strap and Belt Clip

Wrist Strap and Belt Clip

Belt Clip

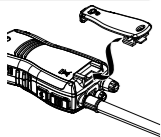


Belt Clip

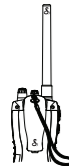
Use the spring-loaded belt clip to carry the radio on your person.

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

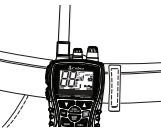
Insert Belt Clip onto Radio



Wrist Strap Attachment

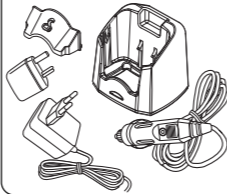


Secure Radio

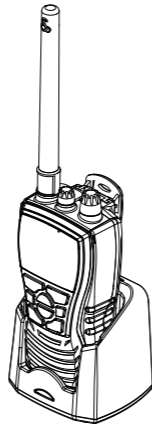


Batteries and Charger

Power Sources



Initial Battery Charge



Initial Charge

The Cobra-provided LiON battery pack may be charged at home, in a car or in a boat using the appropriate 12V or 220V power cord with the charger.

1. Insert one (1) of the power cords into the back of the drop-in charger.
2. Insert the other end of the power cord into the appropriate 12V or 220V power source.
3. Plug the wall charger into electrical outlet. The wall charger should be installed near the equipment and easily accessible.
4. Remove battery pack spacer from the charger and insert the entire radio/battery into the charger. The metal charge contacts on the battery will contact the mating prongs in the charger to transfer the charging current.
5. Observe that the red light on the front of the charger glows to indicate that the battery pack is properly seated and the charger is operating.
6. Allow the batteries to charge for five (5) to six (6) hours before use. The light will change back to green when the battery is fully charged.



WARNING

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



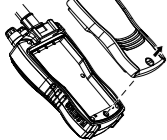
NOTE

If the drop-in charger is used on a boat, Cobra recommends you attach it to a horizontal shelf or vertical bulkhead (using the screw holes provided) to prevent possible damage due to the boat rolling or pitching. The charging base has been designed to hold the battery pack in place during rough sea conditions.



Batteries and Charger

Remove Battery



To Remove Battery Pack from Radio

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



NOTE

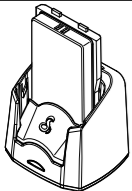
The LiON battery pack can also be charged in the battery charger without being installed in the radio. Insert the spacer into the battery charger to support the battery pack during this charging process. Follow the same procedures in "Initial Charge" to charge the battery pack.



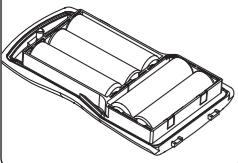
NOTICE

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

Battery Pack Charging Only



Alkaline Battery Tray



Alkaline Batteries

An optional alkaline battery tray (P/N CM 110-024) can be purchased for this radio. The alkaline battery tray acts as a backup or "Emergency" power source should the battery pack run low on power and needs to be recharged. The radio will transmit at full power when using five (5) new AA alkaline batteries.



WARNING

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

Batteries and Charger

Fully Charged



Partially Charged



Fully Discharged



Maintaining the Battery Charge

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



NOTE

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



NOTICE

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

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



Getting Started

HH350 Radio



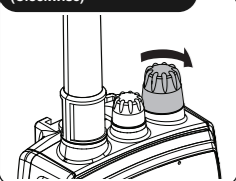
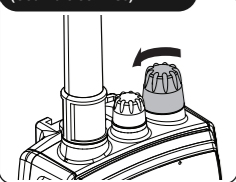
Refer to the foldout at the front of this manual to identify the various controls and indicators on your radio. Throughout this manual you will be instructed to “Press” or to “Press and Hold” various buttons (except “Push to Talk”) on the radio. “Press” means a momentary press of approximately one (1) second. “Press and Hold” means to hold the button down for approximately two (2) seconds.

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

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

Common Radio Functions

The following procedures define common operating functions of the radio when in **Marine Standby** mode.

On/Off/Volume Control
(Clockwise)On/Off/Volume Control
(Counterclockwise)

Power/Volume Control

Power On/Off Control

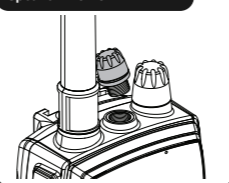
The **On/Off/Volume** control is located at the upper right side of the radio. Turning the **On/Off/Volume** control past the detent position will turn the radio On or Off.

Volume Control

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

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

Speaker/Mic Port



Talk Button



Backlight/Key Lock Button



Key Locked Buttons



Key Lock Icon



Radio Speaker and Microphone

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

An optional **Speaker/Microphone** port is located at the top of the radio between the antenna and the **Power/Volume** control. Unthread the **Speaker/Microphone** port cover to access and install an optional Cobra speaker or microphone into this port.

Talk Button

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

Backlight/Key Lock Button

To Display the Backlight Momentarily:

Press the **Backlight/Key Lock** button. The backlight will remain On for 10 seconds. If the backlight is already On, another press of the **Backlight/Key Lock** button will turn it Off.

Key Lock

To prevent accidental changes to your settings, you can lock all of the following buttons:

- **Channel Up** Button
- **Channel Down** Button
- **SCAN** Button
- **MEM/ESC** Button
- **H-M-L** Button
- **16** Button
- **TRI-WATCH** Button
- **Call/Enter/Setup** Button

To Lock or Unlock the Buttons:

Press and hold the **Backlight/Key Lock** button for two (2) seconds. The **Key Lock** icon will appear or disappear in the LCD. When **Key Lock** is On, pressing any of the listed buttons on the front of the radio will result in a three (3) beep error message.

Both the **Backlight/Key Lock** button and the **Talk** button are active — you can **Receive (Rx)** or **Transmit (Tx)** a message with **Key Lock** On, but you cannot change the channel.



Channel Up/Down Buttons

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

To Change Channels:

Press the **Channel Up/Down** button.

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

You can press and hold the **Channel Up/Down** button for fast advance. The beep sound will occur only at the first press of the button and not during fast advance.

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

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

SCAN Button

Press and release the **SCAN** button to scan all channels. The **SCAN** icon will display on the LCD display. Scanning begins at lower channels, and scans to higher channels. Press the **Channel Up/Down** button to change the scan direction.

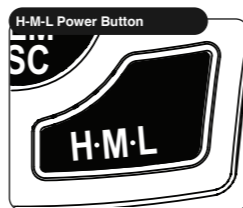
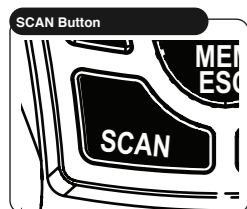
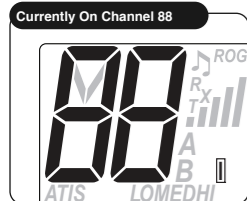
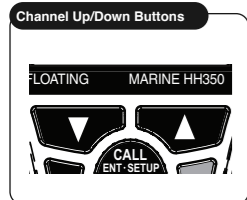
When a signal is received in **SCAN** mode, the radio will pause 10 seconds before resuming **SCAN** operation. The scan will stop on the paused channel and remain there when the **Talk** button is pressed.

In **Memory** mode, press and release the **SCAN** button to scan all memory channels. Because the unit is already in the **Memory Channel** mode, only the channels in the memory bank will be displayed.



NOTE

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



High/Medium/Low (H-M-L) Power Button

Your radio can transmit selectively at 1, 3 or 6 watts of power. Cobra suggests you maintain the low power setting for short-range communications. You will conserve battery life and avoid overpowering nearby stations with a low power setting signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at 1 watt.

To Toggle Between H-M-L Power Modes:

Press the **H-M-L Power** button. The LCD will show which mode is in effect. Some channels are restricted for a maximum use of 1 watt. Your radio will automatically set the power to **Low Power** mode when you select those channels.



NOTE

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



Call/Enter/Setup Button



NOTE

A few channels are Receive only and will not transmit in these channels.

The **Call/Enter/Setup** button has multiple functions. It is generally used in the following ways:

- Press and release to transmit your unique **Call Tone** signal to another radio.
- Press and hold to enter any **Setup** menu.
- Functions as an **Enter** button when making a selection in any **Setup** menu.



Setup Mode Programming

Setup Mode Programming

The following series of procedures is designed to allow you to set the programmable features of your radio. Correctly following these steps results in a minimal amount of radio setup programming time.

During setup programming, the matrix display will show text describing the programming action you are now performing.



NOTE

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

Marine (VHF) Mode Programming

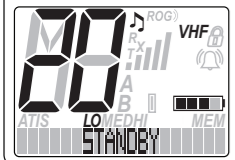
Programming these features will allow you to customize certain features of this radio to enhance your “On-Water” radio use.

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

The mode programming follows this sequence:

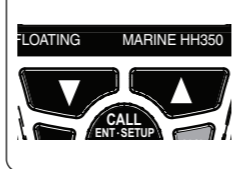
- Squelch Level Set
- UIC Channel Map
- Tone Alert On/Off
- Call Tone Select
- Roger Beep On/Off
- Key Tone On/Off
- ATIS On/Off (displayed only when ATIS enabled)

Marine Standby Mode

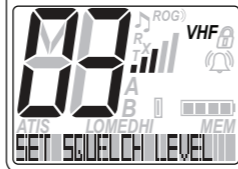


Setup Mode Programming

Channel Up/Down Buttons



Squelch Control



Squelch Control

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

To Set Squelch Control:

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



NOTE

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



Setup Mode Programming

International/Canada/USA Channel Maps

Three (3) sets of VHF Channel Maps have been established for marine use: International, Canada, and USA. Most of the channels are the same for all three (3) maps, but there are definite differences (see table in the Appendix on page 42). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

To Set Channel Map Operating Area:

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



NOTE

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

Call Tone Alert

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

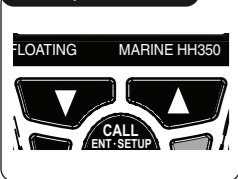
To Set Call Tone On or Off:

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

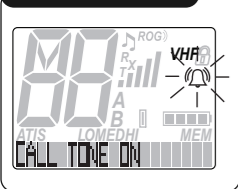
Active Channel Map Icon



Channel Up/Down Buttons

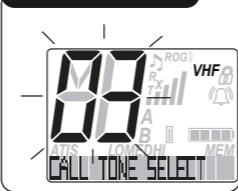


Call Tone Alert



Setup Mode Programming

Call Tone Select



Call Tone Select

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

To Set Call Tone:

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



NOTE

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

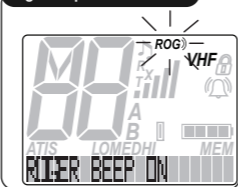
Roger Beep Mode

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

To Set Roger Beep On or Off:

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

Roger Beep 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 flashing and matrix will display **KEY TONE ON** or **OFF**.
2. Press **Channel Up/Down** button to select **ON** or **OFF**.
3. Press **Call/Enter/Setup** button to save entry.

ATIS Mode

ATIS mode allows control over ATIS packet transmissions. This mode is only visible after initial ATIS set-up (see page 21).

To Set ATIS On or Off:

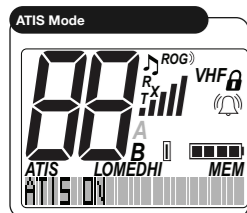
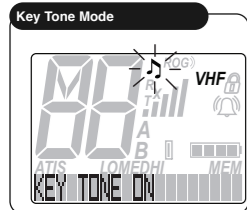
1. Display will show **ATIS** icon and the matrix will display **ATIS ON** or **ATIS OFF**.
2. Press **Channel Up/Down** button to select **ON** or **OFF**.
3. Press **Call/Enter/Setup** button to save entry.

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



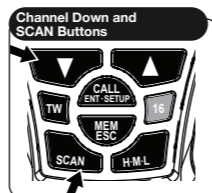
NOTE

Scan and Tri-Watch features are not available when ATIS is on.



ATIS ID Programming

The Automatic Transmission Identification System (ATIS) feature of this Cobra radio is used to identify marine vessels in some inland waterways of European countries that require **ATIS** transmission. An **ATIS ID** number is required to operate the ATIS feature. The **ATIS ID** number is derived from your vessel's call sign. You must enter your **ATIS ID** number into this radio before the **ATIS** system will become functional. Please consult your local dealer for questions about local ATIS requirements. The use of **ATIS** is prohibited outside the European inland waterways covered by the Basel Agreement. With this feature activated the vessels **ATIS ID** number is transmitted after every push of the **Talk** button.



To Set the ATIS ID Number:



NOTE

The **ATIS ID** is a 10-digit number that will always begin with the number "9." You will be asked to enter only the last nine digits. The first digit, "9," has been automatically entered for you.

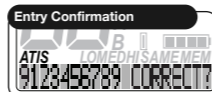
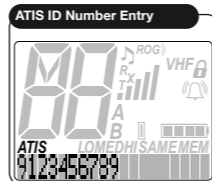
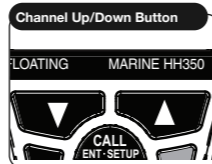
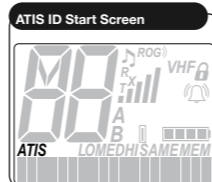
1. With the radio turned Off, press and hold the **Channel Down** and **SCAN** buttons and simultaneously power On the radio.
2. The LCD will display the **ATIS** icon. A dash (-), to the right of the digit "9," will be flashing for the next entry.



NOTICE

Remember, you only have **one (1) attempt** to set the **ATIS ID** number. Once this number has been entered, only your Cobra distributor can reset the **ATIS ID** number. You can also return the radio to Cobra for reprogramming.

3. Press the **Channel Up/Down** button to scroll through the specific **ATIS** digit being entered.
4. Pressing the **Call/Enter/Setup** button advances to the right, one (1) digit, for the next entry.
5. If an error is made during entry, use the **MEM/ESC** key to back-up through the dot matrix display to correct the number.
6. Repeat this input sequence until all nine digits have been entered. The nine digits will be displayed on the matrix. The **ATIS** icon will stop flashing when a successful **ATIS ID** entry has been made.
7. When all 10 digits are displayed, press and release the **Call/Enter/Setup** button. The dot matrix will flash **CORRECT?**
8. Press and hold the **Call/Enter/Setup** button again to save the **ATIS ID** number and return to the **Marine Standby** mode.



Standby/Receive and Transmit

Marine Standby and Receive (Rx) Mode

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



NOTE

Coastguard alerts are broadcast on Channel 16. While in **Marine Standby** mode, you will receive any messages sent on the channel to which you are tuned.

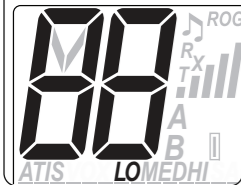
Transmit (Tx) Mode

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 51 mm [2 in.] from your mouth, press and hold the **Talk** button and speak into the microphone. The **Transmit** icon will appear on the LCD.
4. Release the **Talk** button when you are finished speaking. Your radio can only operate in either **Transmit (Tx)** or **Receive (Rx)** mode at any given time. You will not hear the response to your message unless the **Talk** button is released. **Battery Power** icon is frozen for Tx at whatever level it was during receive.

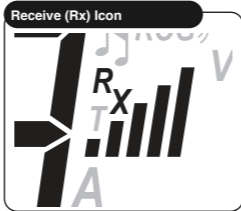
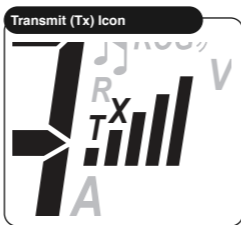
Check Channel Number



Low Power Mode



Talk Button



NOTE

If the Talk button is held down for four (4) 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.



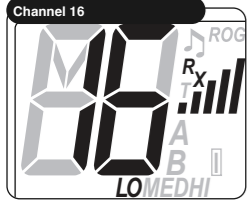
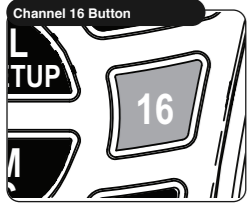
Advanced Operation

Channel 16 Mode

Channel 16 mode gives you quick access to calling on Channel 16 from any operational mode.

To Switch to Channel 16:

1. Press the **Channel 16** button to change to Channel 16.
2. Press the **Channel 16** button a second time and return to the last used channel.



Tri-Watch Mode

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



NOTE

The radio must be squelched for **Tri-Watch** mode to function. See page 17 for **Squelch** procedure.

Tri-Watch Setup

To Program or Edit the Tri-Watch Channels:

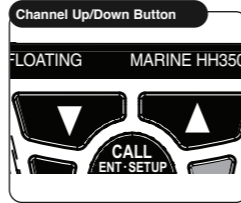
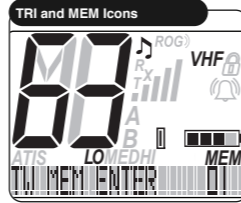
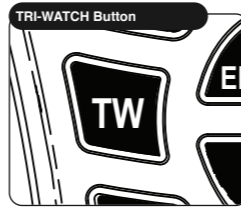
1. Press and hold the **TRI-WATCH** button for two (2) seconds to activate **Tri-Watch Setup** mode. The **MEM** icon on the display will turn On and the matrix will display **TW MEM ENTER 01**.

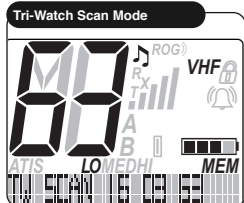
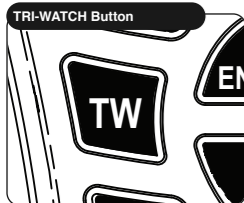


NOTE

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

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





Using Tri-Watch

Tri-Watch Scan Mode:

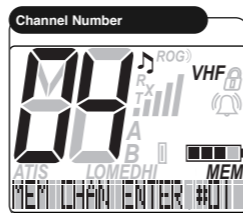
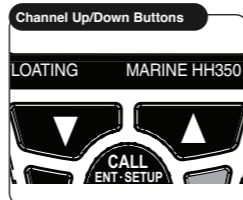
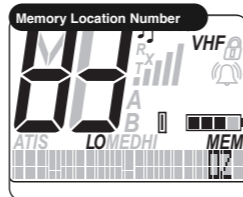
1. From **Marine Standby** mode, press the **TRI-WATCH** button. The **TW SCAN** will display on the matrix along with the three marine channels stored in the **Tri-Watch** memory.
2. The radio will scan through the three (3) **Tri-Watch** memory channels.
3. A signal on any one (1) of the three (3)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



NOTE

After the **Tri-Watch** scan stops to monitor a channel, as long as you do not press any buttons within 10 seconds, your radio will automatically resume scanning the **Tri-Watch** channels. Channel 16 is given priority in **Tri-Watch** Mode.

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



Memory Location Mode

Your radio has unlimited memory locations for storing your most frequently used channels. These memory locations can be selected individually or can be scanned. (See page 30 under **Memory Location Scan**.)

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

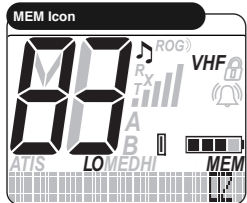
To Program Memory Locations:

1. Press and hold the **MEM/ESC** button for two (2) seconds. The memory location number will be displayed on the matrix and the **MEM** icon will be turned On.
2. Use the **Channel Up/Down** button to advance to the memory location (00-99) you want to program.
3. Press the **MEM/ESC** button to select the memory location.
4. Use the **Channel Up/Down** button to change to the channel you want to store into the selected memory location.
5. Press the **MEM/ESC** button to program that channel. The memory location will be displayed on the matrix again.

Repeat steps 2 through 5 to program as many additional memories as you want.

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





To Recall a Stored Memory Location:

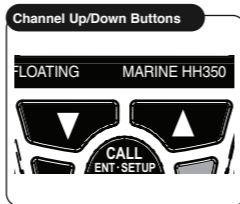
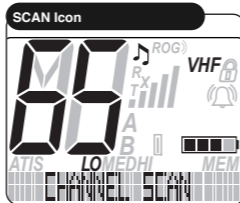
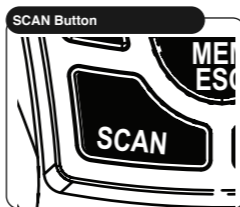
1. Press the **MEM/ESC** button. The **MEM** icon will be turned On.
2. Press the **Channel Up/Down** button to select the memory location. If a memory location has been programmed, its associated channel will display on the LCD. Your radio is now in **Marine Standby** mode on the selected memory location.

To Exit Memory Location Mode:

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

To Erase Stored Memory Locations:

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



Channel Scan Mode

During **Channel Scan** mode, the radio will rapidly switch from channel to channel through all the channels. Channel 16 will be given priority in Channel Scan Mode.



NOTE

The radio must be squelched for **Channel Scan** mode to function. See page 17 for **Squelch** procedure.

To Enter Channel Scan:

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



Memory Location Scan Mode

During **Memory Location Scan** mode, the radio will rapidly scan through all pre-assigned memory channels. Channel 16 will be given priority in Memory Scan Mode.



NOTE

The radio must be squelched for **Memory Location Scan** mode to function. See page 17 for **Squelch** procedure.



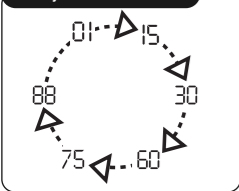
NOTE

If there are fewer than two (2) memory locations programmed in the radio, the **Memory Location Scan** option will not be available. To program at least two (2) memory locations, see page 27.

To Enter Memory Location Scan:

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

Memory Location Scan



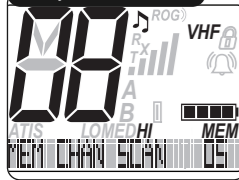
MEM/ESC Button



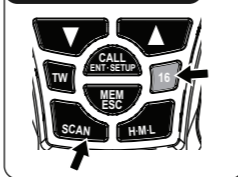
SCAN Button



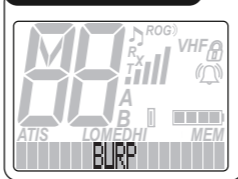
Memory Channel Scan



16 and Scan



Burp Feature



Floating Radio



Burp Feature

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

To Activate Burp:

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

Floating Radio

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



NOTE

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

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





Maintenance

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

- Keep the radio and charger clean by wiping with a soft cloth and mild detergent. Do not use solvents or harsh or abrasive cleaners, which could damage the case or scratch the LCD screen.
- If the radio is exposed to salt water, wipe with a soft, moist cloth at least once a day to prevent buildup of salt deposits, which could interfere with button operation.
- If the radio will be stored for a long period, such as over the winter, remove the batteries from the battery tray and store them in a separate package. This is especially important if you are using alkaline batteries.

Troubleshooting

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
Batteries run down quickly	Batteries are at the end of their life	Replace with new batteries
Will transmit at one (1) or three (3) watts, but not at six (6) 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 or squelch level is too deep	Re-adjust volume and squelch
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) or six (6) 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. You have the ability to go up to 6 watts of output power to increase your calling distance. Remember, the lower wattage outputs will conserve your battery and minimize interference to other users.

Calling Coast Stations

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

Calling Other Vessels

Call other vessels on Channel 16. You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

Limits on Calling

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

Change Channels

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

Station Identification

Identify, in English, your station by your FCC call sign (if available), vessel name and the state registration number, at both the beginning and at the end of the message.

Prohibited Communications

You **MUST NOT** transmit:

- False distress or emergency messages.
- Messages containing obscene, indecent or profane language.
- General calls, signals or messages (messages not addressed to a particular station) on Channel 16, except in an emergency or if you are testing your radio.
- When you are on land.





Voice Calling

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

- Make sure the radio is On.
- Make sure you are in standby listening mode on Channel 16. Make sure Channel 16 is not in use.
- When the channel is open (quiet), press the **Talk** button and call a vessel. Hold the radio or microphone several inches from your face and speak clearly and distinctly in a normal voice tone. Say “name or station being called,” “THIS IS [your vessel name or call sign].”
- Once contact is made, you must leave Channel 16 and go to another working channel. See channel listing on page 41.

For Example

The vessel Corsair is calling the vessel Vagabond:

Corsair: “Vagabond, this is Corsair. Over.”

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

Corsair: “Switching to Channel 68. Over.”



- If the other does not respond, wait two (2) minutes and repeat. You are permitted to attempt contact three (3) times, two (2) minutes apart. If you still have not made contact, wait 15 minutes before trying again.
- After communications are completed, each vessel must sign off with its call sign or vessel name and the word “out” and return to Channel 16.



NOTE

For best sound quality at the station you are calling, hold the microphone on the front of the radio at least 51 mm (2 in.) 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.

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 coastguard 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, coastguard or coastguard Auxiliary craft may be dispatched.

In any event, communicate with the coastguard 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

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

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.



NOTE

Do not use the emergency signal SECURITE if a vessel or person is in danger. Use either MAYDAY or PAN PAN, depending on the immediacy of the danger involved.



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,”
 or “SECURITE — SECURITE — SECURITE.”)
4. **Say:**
 “THIS IS [your vessel name or call sign],” repeated three (3) times.
5. **Say:**
 “MAYDAY (or “PAN” or “SECURITE”)
 [your vessel name or call sign].
6. **Tell where you are:**
 (what navigational aids or landmarks are nearby).
7. State the nature of your distress.
8. State the kind of assistance needed.
9. Give number of persons aboard and conditions of any injured.
10. Estimate present seaworthiness of your vessel.
11. Briefly describe your vessel (length, type, color, hull).
12. **Say:**
 “I WILL BE LISTENING ON CHANNEL 16.”
13. **End message by saying:**
 “THIS IS [your vessel name or call sign]. OVER.”
14. Release **Talk** button and listen. Someone should answer.
 If not, repeat the call, beginning at step 3 above.

Keep the radio nearby. Even after your message has been received, the coastguard 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” [repeated three (3) times]
 “Mayday Corsair”
 “Point Lynas bears 220 degrees magnetic — distance 5 kilometers”
 “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 is 8 meter sloop with blue hull and tan deck house”
 “I will be listening on Channel 16”
 “This is Corsair”
 “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.



Specifications (typical)

General	
Number of Channels	All U.S., Canadian and International Channels
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	7.4 VDC
Battery Life: 5% TX, 5% RX, 90% Standby	LiON: 8 hours @ 6 watts, 14 hours @ 1 watt
Current Drain: Standby Receive (Rx) Transmit (Tx)	45 mA 200 mA 1.8 A @ High Power, 700 mA @ Low Power
Temperature Range	-20°C to 40°C
Radio Dimensions	4.8" x 2.4" x 1.4" (123 mm x 62 mm x 36 mm) not including antenna
Radio Weight	0 lbs 8 oz. (228 g) without batteries
Receiver	
Frequency Range	155.450 to 162.825 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 12 dB Sinad	-116 dBm
Adjacent Channel Selectivity	-70 dB
Intermodulation Rejection	-68 dB
Spurious and Image Rejection	-70 dB
AF Output	250 mW @ 8 Ohms and 5% distortion
Transmitter	
Frequency Range (Tx):	155.450 to 162.425 MHz
RF Output Power	1, 3 or 6 Watts Max (5 Watts rated)
Spurious Emissions	-36 dB
Microphone Type	Condenser
Frequency Stability	±5 ppm
FM Hum and Noise	40 dB
Bluetooth®	
Classification	Class 2,1
Version	2.0
Range	10 Meters

VHF Marine Channel Assignments

Three (3) sets of VHF **Channel Maps** have been established for marine use internationally, in Canada and in the U.S.A. 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. When shipped from the factory, your radio will be set to the International Channel Map. (See page 18 for instructions on how to change the Channel Map.)

The following is a brief outline for some of the channel assignments in the International Channel Map.

Distress, Safety and Calling

Channel 16

Getting the attention of another station (calling) or in emergencies (distress and safety).

Intership Safety

Channel 6

Ship-to-ship safety messages and for search and rescue messages to coastguard ships and aircraft.

On-Board Communication

Channel 15, 17

Used for communication between parts of large ships.

Navigational

Channels 13, 67, 75, 76

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.

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.



NOTE

The U.S.A. and Canada impose restrictions on the use of many channels within their territorial waters. These are noted in the channel assignment chart. If operating your vessel in U.S.A. or Canadian waters, consult the national communication authority or a knowledgeable local radio operator for further guidance.





Channel Number	Channel Map			Frequency		Power Limits
	USA	INT	CAN	Transmit	Receive	
01		•	•	156.050	160.650	
01A	•			156.050	156.050	
02		•	•	156.100	160.700	
03		•	•	156.150	160.750	
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
14	•	•	•	156.700	156.700	
15	•			Rx Only	156.750	
15		•	•	156.750	156.750	1 watt CAN
16	•	•	•	156.800	156.800	
17	•	•	•	156.850	156.850	1 watt CAN



Channel Use
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Public Correspondence
Port Operations, Commercial, VTS In selected areas
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Public Correspondence
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Public Correspondence
Port Operations, Ship Movement, Public Correspondence
West Coast (Coastguard Only); East Coast (Commercial Fishing)
Port Operations, Ship Movement, Public Correspondence
Port Operations, VTS in selected areas
Intership Safety
Port Operations, Ship Movement, Public Correspondence
Commercial
Intership
INT - Intership, Port Operations, Ship Movement; USA & CAN - Boater Calling Channel, Non-Commercial (Recreational)
INT - Intership, Port Operations, Ship Movement; USA & CAN - Commercial
INT - Port Operations, Ship Movement; USA & CAN - Commercial, VTS In Selected Areas
Port Operations, Ship Movement
INT - Intership, Port Operations, Ship Movement; USA & CAN - Intership Navigation Safety (Bridge-To-Bridge)
INT - Port Operations, Ship Movement; USA & CAN - Port Operations, VTS In Selected Areas
Environmental (Receive Only).
INT - Intership, Port Operations, Ship Movement; CAN - EPIRB Buoys Only
Universal Distress, Safety and Calling
INT - Intership, Port Operations, Ship Movement; USA - State Controlled; CAN - Pilotage





Channel Number	Channel Map			Frequency		Power Limits
	USA	INT	CAN	Transmit	Receive	
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
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	
23A	•			157.150	157.150	
23B			•	RX only	161.750	
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	



Channel Use
Port Operations, Ship Movement, Public Correspondence
Commercial
Port Operations, Ship Movement, Public Correspondence
Commercial
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Coastguard Only
Port Operations
INT - Port Operations, Ship Movement, Public Correspondence
USA - Government Only ; CAN - Coastguard Only
Coastguard Only (Weather Broadcasts)
Port Operations, Ship Movement, Public Correspondence
Coastguard Liaison and Maritime Safety Information Broadcasts That Are Announced On Channel 16
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Public Correspondence
Government Only
Coast Guard Only - Weather broadcasts
INT - Port Operations, Ship Movement, Public Correspondence; USA & CAN - Public Correspondence
INT - Port Operations, Ship Movement, Public Correspondence; USA & CAN - Public Correspondence
Safety: Continuous Marine Broadcast (CMB) Service by MCTS Canada
INT - Port Operations, Ship Movement, Public Correspondence; USA & CAN - Public Correspondence
INT - Port Operations, Ship Movement, Public Correspondence; USA & CAN - Public Correspondence
INT - Port Operations, Ship Movement, Public Correspondence; USA & CAN - Public Correspondence
Safety: Continuous Marine Broadcast (CMB) Service by MCTS Canada
INT - Port Operations, Ship Movement, Public Correspondence; CAN - Public Correspondence
Port Operations, Ship Movement, Public Correspondence
CAN - West Coast (Coastguard Only) ; East Coast (Commercial Fishing)
International Port Operations, Ship Movement, Public Correspondence
West Coast (Coastguard Only) ; East Coast (Commercial Fishing)





Channel Number	Channel Map			Frequency		Power Limits
	USA	INT	CAN	Transmit	Receive	
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	
66A	•		•	156.325	156.325	
67	•	•	•	156.375	156.375	
68	•	•	•	156.425	156.425	
69	•	•	•	156.475	156.475	
70	•	•	•	RX only	156.525	
71	•	•	•	156.575	156.575	1 watt USA
72	•	•	•	156.625	156.625	
73	•	•	•	156.675	156.675	
74	•	•	•	156.725	156.725	
75	•	•	•	156.775	156.775	1 watt
76	•	•		156.825	156.825	1 watt
77	•	•	•	156.875	156.875	1 watt USA
78		•		156.925	161.525	
78A	•		•	156.925	156.925	
79		•		156.975	161.575	
79A	•		•	156.975	156.975	



Channel Use
Port Operations, Ship Movement, Public Correspondence
Port Operations & Commercial, VTS In Selected Areas CAN - Tow Boats BCC
Port Operations, Ship Movement, Public Correspondence
CAN - Commercial Fishing
Port Operations, Ship Movement, Public Correspondence
Port Operations
Port Operations, Ship Movement, Public Correspondence
Port Operations
INT - Intership, Port Operations, Ship Movement; USA - Commercial, Bridge-To-Bridge Communication In Lower Mississippi River (Intership Only)
INT - Port Operations, Ship Movement; USA & CAN - Non-Commercial (Recreational)
INT - Intership, Port Operations, Ship Movement; USA - Non-Commercial (Recreational)
Digital Selective Calling (Voice Communications Not Allowed)
INT - Port Operations, Ship Movement; USA & CAN - Non-Commercial (Recreational)
Intership
INT - Intership, Port Operations, Ship Movement; USA - Port Operations
INT - Port Operations, Ship Movement; USA - Port Operations
Port Operations, Ship Movement
Port Operations, Ship Movement
INT - Intership; USA & CAN - Intership (Restricted To Communications With Pilots For Movement And Docking Of Ships)
Port Operations, Ship Movement, Public Correspondence
Non-Commercial (Recreational)
Port Operations, Ship Movement, Public Correspondence
Commercial (Also Non-Commercial In Great Lakes Only)



Channel Number	Channel Map			Frequency		Power Limits
	USA	INT	CAN	Transmit	Receive	
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	
85	•	•	•	157.275	161.875	
86	•	•	•	157.325	161.925	
87	•	•	•	157.375	157.375	
88	•	•	•	157.425	157.425	
88A	•			157.425	157.425	

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).

Channel Use
Port Operations, Ship Movement, Public Correspondence
Commercial (Also Non-Commercial In Great Lakes Only)
Port Operations, Ship Movement, Public Correspondence
USA - Government Only (Environmental Protection Operations)
Port Operations, Ship Movement, Public Correspondence
USA - Government Only; CAN - Coastguard Only
INT - Port Operations, Ship Movement, Public Correspondence
Coastguard Only
Coastguard Only (Weather Broadcasts)
Port Operations, Ship Movement, Public Correspondence
Port Operations, Ship Movement, Public Correspondence
Port Operations, Ship Movement, Public Correspondence
Port Operations, Ship Movement
INT - Port Operations, Ship Movement; USA & CAN - Public Correspondence (Ship-To-Coast) (In USA, Only Within 75 Miles Of Canadian Border)
Commercial Intership Only

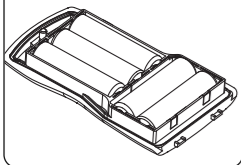
NOTE
 All the listed channels are pre-programmed at the factory according to international regulations, those of Industry Canada (Canada) and those of the FCC (U.S.A.). They cannot be altered by the user nor can modes of operation be changed between simplex and duplex.
 In some countries, additional channels are available. These can be programmed on the radio by the local distributor.



Accessories

Your Cobra radio has several optional accessories available to enhance the use of the radio. Some are listed below:

Alkaline Battery Tray



Alkaline Battery Tray

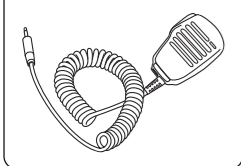
A special alkaline battery tray (P/N CM 110-024) is available as an optional accessory to have as an emergency backup. By using five (5) high-quality AA alkaline batteries, you can have a spare battery backup source for your radio.



NOTE

Alkaline batteries are not rechargeable.

Lapel Speaker/Microphone

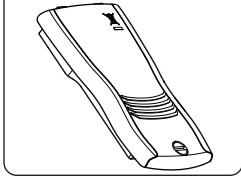


Lapel Speaker/Microphone

A speaker/microphone that attaches to your lapel, by ordering P/N CM 330-001.

This unique accessory allows you to wear the radio on your belt while still being able to communicate with other vessels. A small Push to Talk (PTT) button on the lapel speaker/microphone allows you to answer any incoming call.

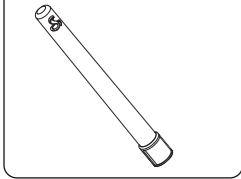
LiION Battery Pack



LiION Battery

LiION replacement battery (P/N CM 110-027). Can be used with the charger included with this radio.

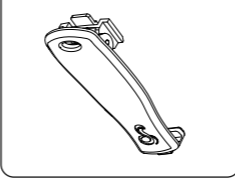
Antenna



Antenna

Replacement Antenna P/N CM 300-002

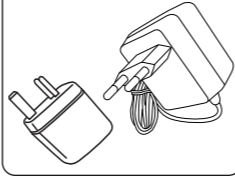
Belt Clip



Belt Clip

Replacement Belt Clip P/N CM 240-003

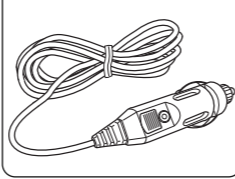
AC Charger



AC Charger

Replacement AC Charger P/N CM 120-006

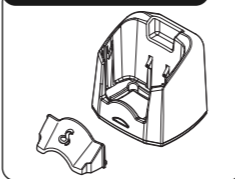
DC Charger



DC Charger

Replacement DC Charger P/N CM 130-005

Drop-In Battery Charger



Drop-In Battery Charger

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





Declaration of Conformity and CE Markings

Appendix

Declaration of Conformity

We Cobra Electronics Europe Limited of
Dungar House
Northumberland Avenue
Dun Laoghaire
County Dublin, Ireland

declare under our sole responsibility that the products **VHF Marine Radios**:

MR HH350 FLT EU

to which this declaration refers, conform with the following relevant standards or other standardising documents when properly installed and maintained and used for their intended purpose

EN 60950-1:2006+A11:2009+A1:2010+A12:2011;
EN301 178-1 V1.3.1(2007-02);
EN 301 178-2 V1.2.2; (2007-02);
EN 300 698-1 V1.4.1 (2009-12) Annex B;
EN 300 698-2 V1.2.1 (2009-12)
EN 301 843-1 V1.3.1 (2012-08)
EN301 843-2 V1.2.1(2009-09);
EN 62311:2008.

according to the regulations in DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIMENT AND OF THE COUNCIL of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

This product complies with Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies.



Dublin, Ireland
February 2013

JEAN-LOUIS POOT
Managing Director

CE Marking

This radio is marked **CE1177** adjacent to the serial number.

That means that this radio:

1. Complies with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.
2. May operate in some non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use.

The user should be sure to check that the model and programming of this radio complies with his or her national licensing requirements.