Cobra
MARINE®

Owner's Manual

VHF MARINE RADIO
MR HH415LI VP EU

Nothing Comes Close to a Cobra®   English

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.

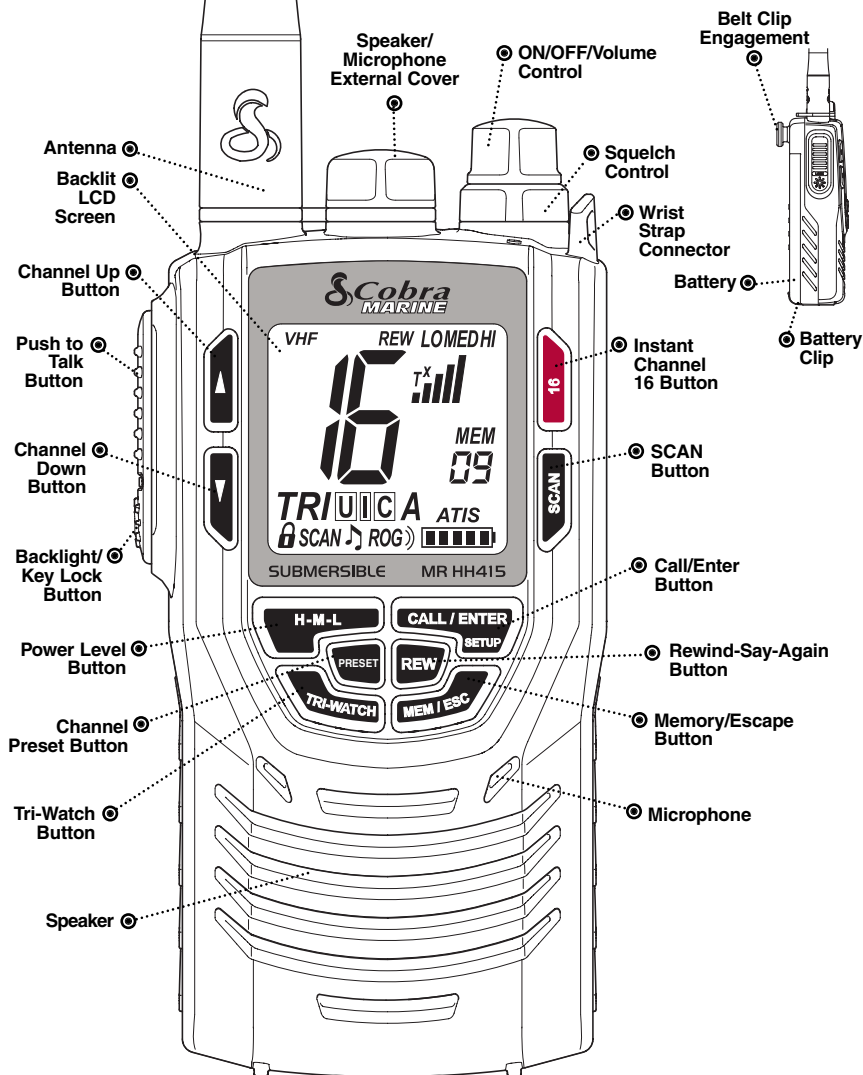This equipment is intended for use in:

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
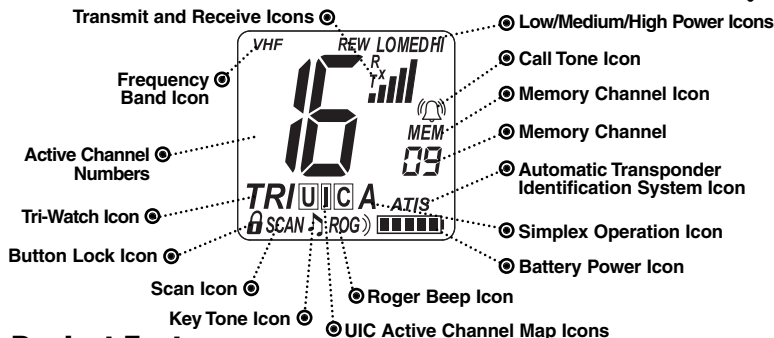the CobraMarine international distributors.

Speaker/
Microphone
External Cover

ON/OFF/Volume
Control

Belt Clip
Engagement

Antenna

Squelch
Control

Backlit
LCD
Screen

Wrist
Strap
Connector

Channel Up
Button

Battery

Push to
Talk
Button

Instant
Channel
16 Button

Channel
Down
Button

SCAN
Button

Battery
Clip

Backlight/
Key Lock
Button

Call/Enter
Button

Power Level
Button

Rewind-Say-Again
Button

Channel
Preset Button

Memory/Escape
Button

Tri-Watch
Button

Microphone

Speaker

VHF   REW LOMEDHI

T^x

MEM

TRI U I C A   ATIS

SCAN ROG

SUBMERSIBLE   MR HH415

H-M-L   CALL / ENTER

SETUP

PRESET   REW

TRI-WATCH   MEM / ESC

Backlit LCD (Liquid Crystal Display) Screen

Transmit and Receive Icons ◉

Low/Medium/High Power Icons ◉

Frequency ◉ Band Icon

Call Tone Icon ◉

Memory Channel Icon ◉

Memory Channel ◉

Active Channel ◉ Numbers

Automatic Transponder ◉ Identification System Icon

Tri-Watch Icon ◉

Simplex Operation Icon ◉

Button Lock Icon ◉

Battery Power Icon ◉

Scan Icon ◉

Key Tone Icon ◉

Roger Beep Icon ◉

UIC Active Channel Map Icons ◉

Product Features

Power Settings

Selectable power settings produce 1, 3 or 5 watts of output power for near or distant calling.

International/Canada/USA Channels

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

Submersible to JIS7 Standards

Waterproof to 1 m [3.3 ft] 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.

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.

Lithium-Ion Rechargeable Battery Pack

Provides extended operating time compared to alkaline batteries with no memory effect.

220V/12V Rapid Charger Included

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

Locking Desktop Charger

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

Call Tones (Selectable)

10 selectable call tones.

Product Features (continued)

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.

Patented VibrAlert®
Provides a silent alert for incoming calls. Ideal for noisy or all-quiet environments.

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.

Rapid-Charge Locking Desktop Charger
Allows charging of batteries at home, car or boat. Vertical or horizontal mounting.

Cobra Exclusive Rewind-Say-Again™
A dedicated button allows user to replay up to the last 20 seconds of audio. Press the dedicated rewind button and Cobra VHF will replay the last 20 seconds of the audio from your VHF.

Introduction

VHF Marine Radio Protocols

Installation

Operating Your Radio

Trademark

Customer Service

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 **NOTICES** will make you aware of RF exposure hazards and how to assure you operate the radio within the recommended RF exposure limits established for it.

WARNINGS
Your CobraMarine 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 (beyond recommended allowable limits for occupational use):

ALWAYS hold the radio, especially the antenna, at least 5,1 cm [2 in.] away from you when you are transmitting.

NEVER allow the antenna to touch any part of your body when transmitting.

KEEP the radio and antenna at least as far from bystanders as from yourself.

DO NOT operate the radio without the supplied antenna or a Cobra Electronics Corporation™ authorized replacement attachment. In addition to the RF energy exposure hazard, doing so may damage the radio.

DO NOT transmit more than 50% of the time the radio is in use — 50% duty cycle. The radio is transmitting when the **Talk** button is pressed and the **Transmit** icon shows on the LCD screen.

ALWAYS use only Cobra Electronics Corporation authorized accessories (antennas, batteries, belt clips, etc.).

DO NOT operate the radio where RF energy generated during transmission may cause electromagnetic interference or incompatibility with other devices or systems. This includes aircraft, blasting sites and hospitals.

TURN OFF the radio in explosive atmospheres and where signs are posted prohibiting radio transmissions.

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

Important Safety Information

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

AVOID using or storing the radio at temperatures below -20℃ (-4℉) or above 60℃ (140℉).

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 an LiON (Lithium-Ion) rechargeable battery pack.

■ Use only the Cobra charger to recharge LiON battery in the radio.

■ Do not short circuit the battery pack.

■ When replacing the battery, dispose of the old battery properly. The LiON battery may explode if disposed of in a fire.

Changes or modifications to your radio MAY VOID its compliance with government 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 5 watt maximum output of your radio is not sufficient for the distances you travel from the coast, consider installing a CobraMarine fixed mount radio with up to 25 watts of output power. (Visit www.cobra.com or your local dealer for model availability.)

If you will be going 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.

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 Royal Mail 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 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.

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 kilometers. If there is no answer, switch to a higher power. This 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 your station by your call sign, ship name or other official number at both the beginning and end of each message.

Prohibited Communications
You **MUST NOT** transmit:

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

Voice Calling

To call another vessel or a shore installation such as a lock or bridge tender:

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

- Select Channel 16 and listen to make sure it is not being used.

- When the channel is quiet, press the **Talk** button and call the ship you wish to contact. (Hold the radio at least 5,1 cm [2 in.] from your face and speak directly into it in a normal tone of voice — clearly and distinctly.) Say "[name of station being called] THIS IS [your vessel's name or call sign]".

- Once contact is made on the calling channel, you must switch to a proper working channel. See the channel listings on pages 14 – 23.

> **For Example**
>
> **The vessel Corsair calling the vessel Vagabond:**
>
> **Corsair:** "Vagabond, this is Corsair."
>
> **Vagabond:** "Corsair, this is Vagabond. Reply 72 (or any proper working channel)."
>
> **Corsair:** "72." or "Roger."

- After communications are completed, each vessel must sign off with its call sign or vessel name and switch to Channel 16.

NOTE
For the best sound quality at the station you are calling, hold the radio at least 5,1 cm [2 in.] from your mouth and slightly off to one 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

Radiotelephone Calls

Boaters may make and receive radiotelephone calls to and from any number on the telephone network by using the services of public coast stations. Calls can be made — for a fee — between your radio and telephones on land, sea and in the air. See pages 14 through 23 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 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 fuel, 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.

Emergency Messages and Distress Procedure

Marine Emergency Signals

The three (3) spoken international emergency signals are:

MAYDAY

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

PAN

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

SECURITE

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

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

If You Hear a Distress Call

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

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

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 home in on.

For Example

"Mayday — Mayday — Mayday"

"This is Corsair — Corsair — Corsair"

"Mayday Corsair"

"Point Lynas bears 220 degrees magnetic — distance 5 kilometers"

"Struck submerged object and flooding — need pump and tow"

"Four adults, three children aboard — no one injured"

"Estimate we will remain afloat one-half hour"

"Corsair is an 8 metre 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.

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 36 for instructions on how to change the Channel Map.)

The following is a brief outline 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
Used for communication between parts of large ships.

Non-Commercial
Channels 68, 72
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 8, 9, 10, 11, 17, 67, 88, 88A
Working channels for working ships only. Messages must be about business or needs of the ship. Use Channels 8, 67, 88 and 88A only for ship-to-ship messages.

Public Correspondence (marine operator)

**Channels 1, 2, 3, 4, 5, 7, 23, 24, 25, 26, 27, 28, 60, 61,
62, 63, 64, 65, 66, 78, 82, 84, 85, 86, 87, 88**

For calls to marine operators at public coast stations. You can make and receive telephone calls through these stations.

Port Operations

**Channels 4, 5, 7, 12, 14, 18, 19, 20, 21, 22, 61, 62,
63, 64, 65, 66, 69, 71, 73, 74, 77, 79, 80, 81, 82, 83**

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.

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

VHF Marine
Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	Transmit	Receive	
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
14	●	●	●	156.700	156.700	
15	●			Rx Only	156.750	
15		●	●	156.750	156.750	1 watt CAN and INT
16	●	●	●	156.800	156.800	
17	●	●	●	156.850	156.850	1 watt USA and CAN

Channel	Use
01	Public Correspondence (Marine Operator)
01A	Port Operations and Commercial, VTS in selected areas
02	Public Correspondence (Marine Operator)
03	Public Correspondence (Marine Operator)
03A	**Government Only**
04	Public Correspondence (Marine Operator), Port Operations, Ship Movement
04A	**West Coast (Coastguard Only);** East Coast (Commercial Fishing)
05	Public Correspondence (Marine Operator), Port Operations, Ship Movement
05A	Port Operations, VTS in selected areas
06	Intership Safety
07	Public Correspondence (Marine Operator), Port Operations, Ship Movement
07A	Commercial
08	Commercial (Intership Only)
09	Boater Calling Channel, Non-Commercial (Recreational)
10	Commercial
11	Commercial, VTS in selected areas
12	Port Operations, VTS in selected areas
13	Intership Navigation Safety (Bridge-to-Bridge). In U.S. waters, large vessels maintain a listening watch on this channel.
14	Port Operations, VTS in selected areas
15	Environmental (Receive Only). Used by class C EPIRB's.
15	Canada (EPIRB Buoys Only); International (On-Board Communication)
16	**International Distress, Safety and Calling**
17	State Controlled (U.S.A. Only)

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	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	
22		●		157.100	161.700	
22A	●		●	157.100	157.100	
23		●	●	157.150	161.750	
23A	●			157.150	157.150	
24	●	●	●	157.200	161.800	
25	●	●	●	157.250	161.850	
26	●	●	●	157.300	161.900	
27	●	●	●	157.350	161.950	
28	●	●	●	157.400	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	

VHF Marine
Channel Assignments

Channel	Use
18	Port Operations, Ship Movement
18A	Commercial
19	Port Operations, Ship Movement
19A	Commercial
20	**Canada (Coastguard Only);** International (Port Operations, Ship Movement)
20A	Port Operations
21	Port Operations, Ship Movement
21A	**U.S. (Government Only); Canada (Coastguard Only)**
22	Port Operations, Ship Movement
22A	U.S. and Canadian coastguard Liaison and Maritime Safety Information Broadcasts that are announced on Channel 16
23	Public Correspondence (Marine Operator)
23A	**Government Only**
24	Public Correspondence (Marine Operator)
25	Public Correspondence (Marine Operator)
26	Public Correspondence (Marine Operator)
27	Public Correspondence (Marine Operator)
28	Public Correspondence (Marine Operator)
60	Public Correspondence (Marine Operator)
61	Public Correspondence (Marine Operator), Port Operation, Ship Movement
61A	**U.S. (Government Only); Canada (Coastguard Only); West Coast (Coastguard Only);** East Coast (Commercial Fishing)
62	Public Correspondence (Marine Operator), Port Operations, Ship Movement
62A	**West Coast (Coastguard Only);** East Coast (Commercial Fishing)

VHF Marine
Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	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	1 watt CAN
67	●	●	●	156.375	156.375	1 watt USA
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.
76		●		156.825	156.825	1 watt Only Int.
77	●	●	●	156.875	156.875	1 watt USA and CAN

VHF Marine
Channel Assignments

Channel	Use
63	Public Correspondence (Marine Operator), Port Operations, Ship Movement
63A	Port Operations and Commercial, VTS in selected areas
64	Public Correspondence (Marine Operator), Port Operations, Ship Movement
64A	**U.S. (Government Only);** Canada (Commercial Fishing)
65	Public Correspondence (Marine Operator), Port Operations, Ship Movement
65A	Port Operations
66	Public Correspondence (Marine Operator), Port Operations, Ship Movement
66A	Port Operations
67	U.S. (Commercial). Used for bridge-to-bridge communications in lower Mississippi River (Intership Only); Canada (Commercial Fishing), S&R
68	Non-Commercial (Recreational)
69	U.S. (Non-Commercial, Recreational); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
70	**Digital Selective Calling (Voice communications not allowed)**
71	U.S. and Canada (Non-Commercial, Recreational); International (Port Operations, Ship Movement)
72	Non-Commercial (Intership Only)
73	U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
74	U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
75	Port Operations (Intership Only)
76	Port Operations (Intership Only)
77	Port Operations (Intership only). Restricted to communications with pilots for movement and docking of ships.

Channel Number	Channel Map USA	Int'l	Canada	Frequency Transmit	Receive	Power Limits
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	
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	
87		●		157.375	157.375	
87A	●			157.375	157.375	
88	●		●	157.425	162.025	
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
78	Public Correspondence (Marine Operator)
78A	Non-Commercial (Recreational)
79	Port Operations, Ship Movement
79A	Commercial (Also Non-Commercial only in Great Lakes)
80	Port Operations, Ship Movement
80A	Commercial (Also Non-Commercial only in Great Lakes)
81	Port Operations, Ship Movement
81A	**U.S. (Government Only; Environmental Protection Operations)**
82	Public Correspondence (Marine Operator), Port Operation, Ship Movement
82A	**U.S. (Government Only); Canada (Coastguard Only)**
83	**Canada (Coastguard Only)**
83A	**U.S. (Government Only); Canada (Coastguard Only)**
84	Public Correspondence (Marine Operator)
84A	Public Correspondence (Marine Operator)
85	Public Correspondence (Marine Operator)
85A	Public Correspondence (Marine Operator)
86	Public Correspondence (Marine Operator)
86A	Public Correspondence (Marine Operator)
87	Public Correspondence (Marine Operator)
87	Public Correspondence (Marine Operator)
87A	Public Correspondence (Marine Operator)
88	Public Correspondence (Ship to Coast). In U.S. only within 75 miles of Canadian Border.
88	Commercial Intership only
88A	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 dealer or distributor.

Included in this Package

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

Radio

Wrist Strap

Drop-In Battery Charger

Flexible Antenna
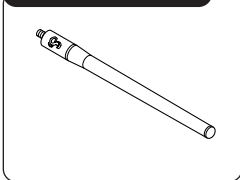
Battery Charger Power Cord
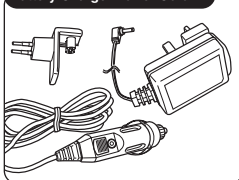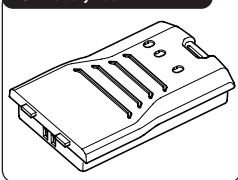
For connection to 12-volt and AC power sources.

LiON Battery Pack

Operating Instruction Manual

MR HH415 VP EU

Spring-Loaded Belt Clip
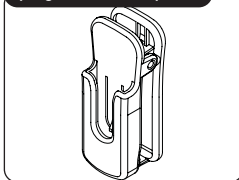
Alkaline Battery Tray
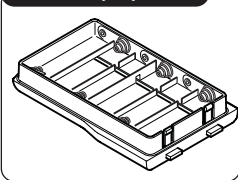
Alkaline batteries not included.

Antenna, Wrist Strap and Belt Clip
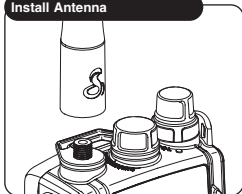
Antenna Installation

The flexible antenna is shipped separately in the package and must be attached before you use the radio.

1. Align the base of the antenna with the socket in the top of the radio.

2. Screw it all the way into the socket. Be sure that the seal seats properly.

⚠️ **NOTICE**
Operating the radio without the antenna in place may damage the unit. The radio is not waterproof until the antenna and battery pack are in place with their seals properly seated.

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.

Insert Knob onto Belt Clip

2. Insert the round guide on the back of the radio into the guide channel on the back of the belt clip. The radio must be upside-down, as shown, to remove it from the belt clip.

3. Once the knob is inserted all the way into the belt clip channel, the radio swings free but remains secure.
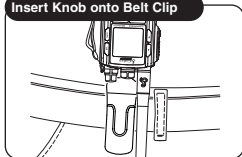
Secure Radio

Batteries and Charger
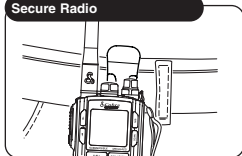
Batteries and Charger

Lithium-Ion Battery Pack
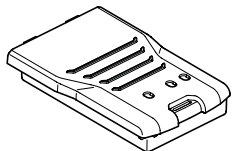
The radio is shipped with a sealed Lithium-Ion (LiON) battery pack (P/N CM 110-010) that is rechargeable.

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

When your rechargeable batteries begin to discharge too quickly, it is time to install a new battery pack. Your radio will also operate with six (6) high-quality AA alkaline batteries, using the AA alkaline battery tray (provided with this radio).

Install Battery Pack
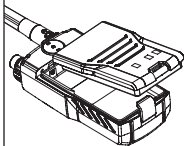
Installing the Battery Pack

1. Position the battery pack to line up the two (2) external alignment tabs to the alignment slots in the radio.

2. Engage the battery pack into the radio until battery pack is fully seated against the radio housing.

3. Pivot the locking tab up until it snaps into place on the back of the battery pack.
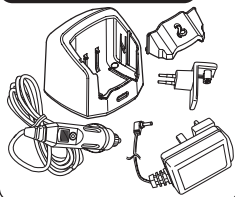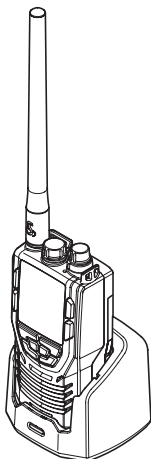
Initial Charge

The Cobra-provided lithium-ion (LiON) battery pack may be charged at home, in a car or in a boat using the appropriate 12V DC or 220V AC 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 DC or 220V AC power source.

3. Remove the spacer from the charger and insert the entire radio into the charger. The metal charge contacts on the radio will contact the mating prongs in the charger to transfer the charging current.

4. Observe that the red light on the front of the charger glows to indicate that the battery pack is properly seated and the charger is operating.

5. Allow the batteries to charge for three (3) to four (4) hours before use. The light will change back to green when the battery is fully charged.

WARNING
Only the rechargeable lithium-ion (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.
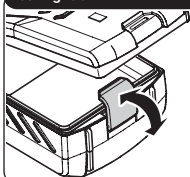
Locking Tab

To Remove Battery Pack from Radio
1. Pivot the locking tab off of the back of the battery pack to unlock.
2. Lift the bottom of the battery pack slightly to remove it from the radio housing.
3. Pull battery pack out of the radio housing.

NOTE
The lithium-ion (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.

Battery Pack Charging Only
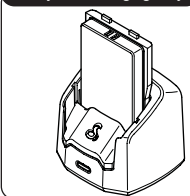
NOTICE
Lithium-ion (LiON) batteries are toxic. Please dispose of properly. Some marine suppliers accept old battery packs for recycling and some municipal waste disposal agencies have special provisions for battery disposal.
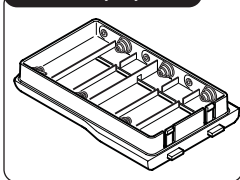
Alkaline Batteries
There is an alkaline battery tray (P/N CM 110-011) provided with this radio. The alkaline battery tray is provided as a backup or "Emergency" power source should the battery pack run low on power and needs to be recharged. The radio will transmit at full power when using six (6) new AA Alkaline batteries.

Alkaline Battery Tray

AA Alkaline batteries not included

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

Fully Charged

A

Partially Charged

A

Fully Discharged

A

Maintaining the Battery Charge

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

NOTICE
Use only the drop-in charger provided by Cobra. Do not use the charger with alkaline batteries; only the lithium-ion (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 alkaline battery tray with fresh alkaline batteries and continue to use your radio.

NOTE
Some radios with LiON batteries have AA or AAA battery packs which only allow low power transmit. The AA battery tray for the MR HH415 and a fresh set of alkaline batteries will allow for full power emergency transmissions.

Getting Started

MR HH415 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 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 the **Marine Standby** mode.

Power/Volume/Squelch Controls

On/Off/Volume Control (Clockwise)

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.

On/Off/Volume Control (Counterclockwise)

■ To increase the volume, turn the **On/Off/Volume** control clockwise.

■ To decrease the volume, turn the **On/Off/Volume** control counterclockwise.

Getting Started
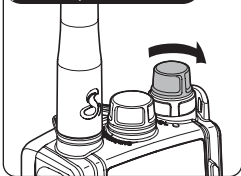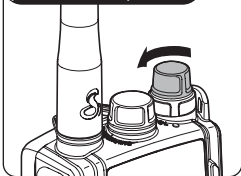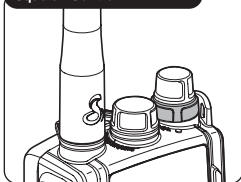
Squelch Control

Squelch Control

Squelch is controlled by turning the lower rotary concentric knob located directly below the **On/Off/Volume** switch.

With the power On, turn the knob counterclockwise until you hear a hissing sound, then turn the knob clockwise until the hissing stops. This will establish a "Baseline" squelch. By turning the knob further in a clockwise direction, you will filter weak and medium-strength signals. By turning the knob in a counterclockwise direction (further from your baseline setting), you will receive weaker signals. Squelch Control filters weak signals and radio frequency (RF) noise so that you will clearly hear the signals you want.

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.

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.

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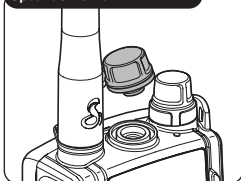
An underlined optional **Speaker/Microphone** port is located at the top of the radio between the antenna and the **Power/Volume/Squelch** control. Unthread the **Speaker/Microphone** port cover to access and install an optional speaker or microphone into this port.

Talk Button

Talk Button

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

Backlight/Key Lock Button

Key Locked Buttons
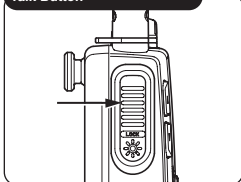
Key Lock Icon
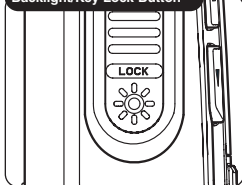
Backlight/Key Lock Button

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

To Display the Backlight Momentarily:

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

Key Lock

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

- **Channel Up** Button
- **Channel Down** Button
- **SCAN** Button
- **MEM/ESC** Button
- **H-M-L** Button
- **16** Button
- **TRI-WATCH** Button
- **Call/Enter/Setup** Button
- **Preset** Button
- **REW** 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 Button
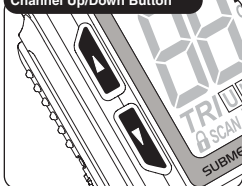
Currently On Channel 88
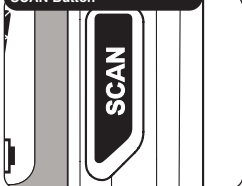
Channel Up/Down Button

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** button.

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

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.

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

NOTE

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

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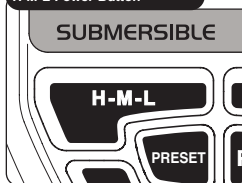
High/Medium/Low (H-M-L) Power Button

Your radio can transmit selectively at 1, 3 or 5 watts of power. Cobra suggests you maintain the low power setting for short-range communications. You will conserve battery life and avoid overpowering nearby stations with a low power setting signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at 1 watt.

To Toggle Between H-M-L Power Modes:

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

NOTE

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

Call /Enter/Setup Button

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

■ Press and release to transmit your unique **Call Tone** signal to another radio.

■ Press and hold to enter any **Setup** menu.

■ Functions as an **ENTER** button when making a selection in any **Setup** menu.

Getting Started
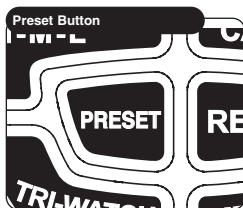
Preset Button

Preset Button

The **Preset** button will store all of the settings displayed on the LCD (i.e., Channel, Power Level, Memory Mode, etc...) into memory as your personal default radio settings.

To Set Personal Default Settings:

Press and hold the **Preset** button. This will store whatever settings are displayed on the LCD.

After changing any of the settings you can recall your default settings by pressing and releasing the **Preset** button.

Intial Preset Screen
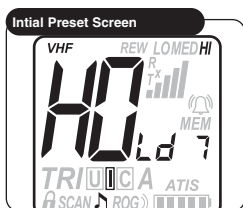
NOTE

Initial power-on of the radio and first-time press of **Preset** button will display the Intial Preset Screen. *"HOLd To SAVE"* will flash across the screen until the **Preset** button is depressed and held to save your personal default radio settings.

Setup Mode Programming

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

NOTE

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

Marine (VHF) Mode Programming

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

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

Set Channel Map
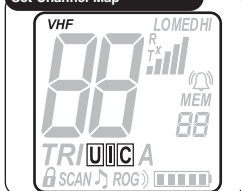
Active Channel Map Icon

Channel Up/Down Button

International/Canada/USA Channel Maps

Three (3) sets of VHF Channel Maps have been established for marine use in the USA, Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on pages 16 through 23). 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 **I** icon is the default) flashing.

3. Press **Channel Up/Down** button to select the **I, C** or **U** icon.

4. Press **Call/Enter/Setup** button to save this entry and move to the next setup programming mode.

NOTE

One (1) or two(2) of the channel maps might have been disabled for sales of this radio in some countries.

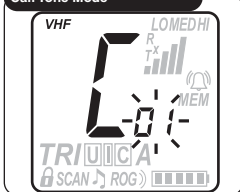# Setup Mode Programming
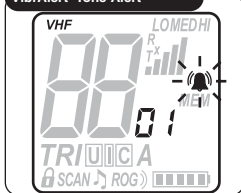
VibrAlert® Mode

In **VibrAlert®** mode, your radio can alert you to incoming signals by sounding an audible call tone, a silent vibration or both.

To set VibrAlert®:

1. The display will show either the **Vibrate** icon (shake bars), **Call Tone** icon (bell shape) or a combination **VibrAlert®** icon.

2. The present setting of either, **01**, **02** or **03** will be flashing.

3. Press **Channel Up/Down** button to select one of the following:

   01 = VibrAlert® On (both shake bars and bell shape).

   02 = Vibrate On (shake bars only).

   03 = Call Tone Only On (bell shape only).

4. Press **Call/Enter/Setup** button to save this entry and move to the next setup programming mode.

Call Tone Mode

VHF   LO MED HI
R
TX
MEM
TRI UIC A
SCAN ♪ ROG

Call Tone Mode

In **Call Tone** mode, your radio can alert you to incoming signals by sounding an audible call tone, a silent vibration or both. This setting will also allow you to transmit a unique **Call Tone** alert to identify your radio when you transmit messages. You can select from one of 10 different **Call Tone** signals.

To Set Call Tone:

1. From the previous press of the **Call/Enter/Setup** button, the LCD will display the letter **"C"** and the current **Call Tone** number (01 through 10).

2. Press the **Channel Up/Down** button to select a different **Call Tone**. An example of each call tone will sound for 1.5 seconds.

3. Press **Call/Enter/Setup** button to save this entry and move to the next setup programming mode.

NOTE

Call Tones are not usually used for **Marine VHF** communications. We allow you to turn it On for your unique communication needs.
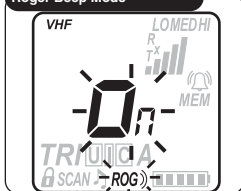
Roger Beep Mode

Roger Beep Mode

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

To Set Roger Beep On or Off:

1. Display will show **ROG** icon and **ON** or **OFF** flashing.

2. Press **Channel Up/Down** button to select **ON** or **OFF**. **ROG** will be displayed when On.

3. Press **Call/Enter/Setup** button to save this entry and move to the next setup programming mode.

Key Tone Mode
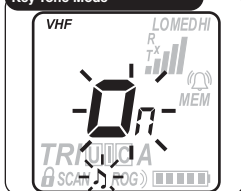
Key Tone Mode

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** button to select **ON** or **OFF**.

3. Press **Call/Enter/Setup** button to save entry.

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

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 vessels 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.

With this feature activated the vessels **ATIS ID** number is transmitted after every push of the **Talk** button.

Channel Down and SCAN Buttons
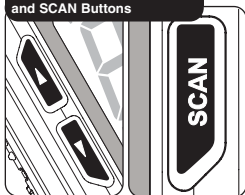
ATIS ID Start Screen
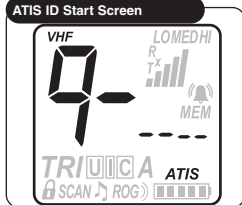
To Set the ATIS ID Number:

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 and flash 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 with PC software can reset the **ATIS ID** number. You can also return the radio to Cobra for reprogramming.

Channel Up/Down Button
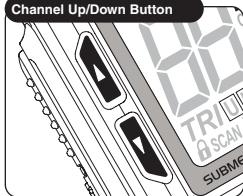
ATIS ID Number Entry
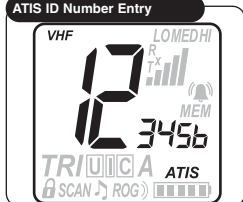
3. Press the **Channel Up/Down** button to scroll through the specific **ATIS** digit being entered.

4. Pressing the **Call/Enter/Setup** button advances to the right, one (1) digit, for the next entry.

5. Repeat this input sequence until all nine digits have been entered. The **ATIS** icon will stop flashing when a successful ATIS ID entry has been made.

6. Press the **Call/Enter/Setup** button again, after all numbers have been entered, 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).

NOTE
Coastguard alerts are broadcast on Channel 16.

VHF LO MED
88
TR/Ⓤ ⓒ A

Low Power Mode

LO MED HI
R
-x

Talk Button

Transmit (Tx) Icon

LO MED **HI**
R
T **X**

Receive (Rx) Icon

LO MED **HI**
R
X
T
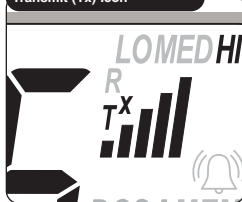
Transmit (Tx) Mode

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 pages 14 through 23 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 5,1 cm [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. 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.
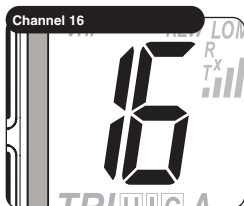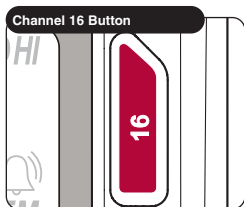
Advanced Operation

Channel 16 Button

Channel 16

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 **Standby** 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 31 for **Squelch** procedure.

Tri-Watch Setup

To Program or Edit the Tri-Watch Channels:

TRI-WATCH Button
PRESET
TRI-WATCH

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

NOTE

The main channel number will flash to indicate channel position. If there is no input activity for 15 seconds, the radio will sound two (2) beeps and return to **Marine Standby** mode.

TRI and MEM Icons

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.

Channel Up/Down Button

5. After programming both **Tri-Watch** memory channels the radio will immediately engage **Tri-Watch** mode. (See page 46 for further details.)

TRI-WATCH Button

PRESET

TRI-WATCH
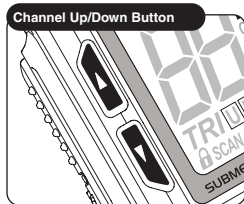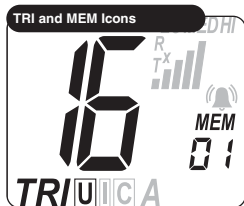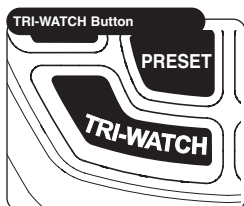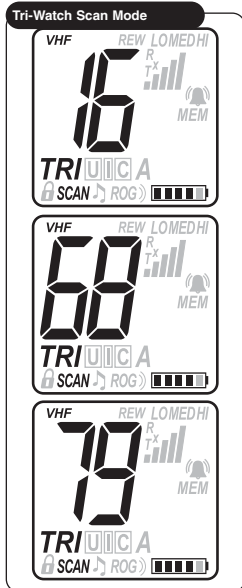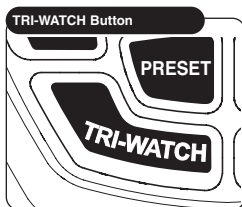
Tri-Watch Scan Mode

Using Tri-Watch

Tri-Watch Scan Mode:

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

2. A signal on any one (1) of the three (3) channels will stop the scan for 10 seconds to allow you to listen to the traffic on that location.

NOTE

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

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

4. To EXIT the **Tri-Watch** scan, press the **TRI-WATCH** button again. The **TRI** icon will disappear from the LCD and the radio will return to **Marine Standby** mode.

Advanced Operation

Memory Location Mode

Your radio has unlimited memory locations for storing your most frequently used channels. These memory locations can be selected individually or can be scanned. (See page 50 under **Memory Location Scan**.)

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

MEM/ESC Button

REW

MEM / ESC

Memory Location Number

MEM
-09-

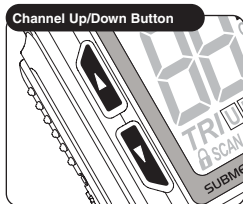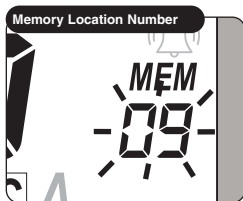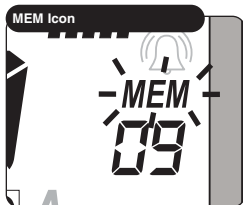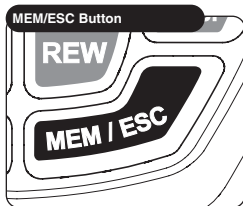**Channel Up/Down Button**

Channel Number

To Program Memory Locations:

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

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.

MEM/ESC Button

REW

MEM / ESC

MEM Icon

MEM
09

Memory Location Number

MEM
09

Channel Up/Down Button
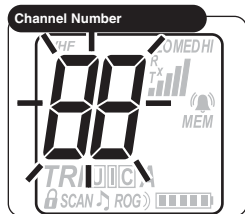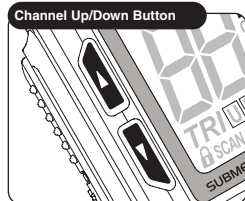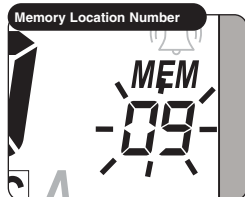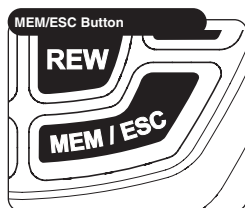
To Recall a Stored Memory Location:

1. Press the **MEM/ESC** button. The **MEM** icon will be turned On.

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

To Exit Memory Location Mode:

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

To Erase Stored Memory Locations:

1. Press and hold the **MEM/ESC** button for two (2) seconds. The memory location number will start flashing and the **MEM** icon will be turned On.

2. Use the **Channel Up/Down** button to advance to the memory location you want to erase.

3. Press the **MEM/ESC** button to select the memory location. The memory channel number will stop flashing and the channel number will start flashing.

4. Use the **Channel Up/Down** button to change to the channel to read "00" at the selected memory location.

5. Press the **MEM/ESC** button to erase that channel.

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.

Scanning
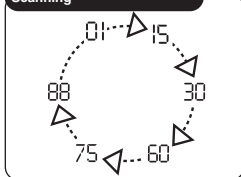
Channel Scan Mode

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.

NOTE
The radio must be squelched for **Channel Scan** mode to function. See page 31 for **Squelch** procedure.

To Enter Channel Scan:

1. From **Marine Standby** mode, press the **SCAN** button. The radio will immediately begin to scan the entire channel map selected in the active channel map. The **SCAN** icon will show on the LCD.

2. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location.

3. Press the **Channel Up/Down** button to resume scanning the **Channel Scan** channels or to change the scan direction.

4. To EXIT **Channel Scan** mode, press the **SCAN** button again. The **SCAN** icon will disappear from the LCD and the radio will return to **Marine Standby** mode.
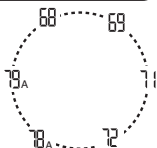

SCAN Button

SCAN Icon

Channel Up/Down Button

Memory Location Scan

68 - - - - - - 69

73ₐ   7 1

18ₐ - - - - - 72

Memory Location Scan Mode

During **Memory Location Scan** mode, the radio will rapidly scan through all pre-assigned 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

The radio must be squelched for **Memory Location Scan** mode to function. See page 31 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 47.

MEM/ESC Button
REW
MEM / ESC
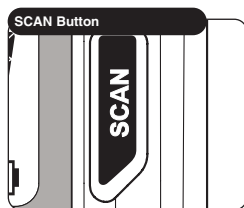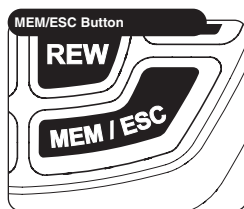
SCAN Button
SCAN

To Enter Memory Location Scan:

1. From **Marine Standby** mode, press the **MEM/ESC** button.

2. Press the **SCAN** button. The radio will immediately begin to scan all pre-assigned memory channels. The **SCAN** and **MEM** icons will show on the LCD.

3. A signal on any channel will stop the scan for 10 seconds to allow you to listen to the traffic on that location.

4. Press the **Channel Up/Down** button to resume scanning the **Memory Location Scan** channels or to change the scan direction.

5. To EXIT **Memory Location Scan** mode, press the **SCAN** button again. The **SCAN** and **MEM** icons will disappear from the LCD and the radio will return to **Marine Standby** mode.

Rewind-Say-Again™

REW Button
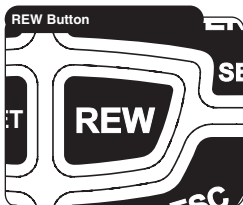
Rewind-Say-Again™ Feature

Use the Cobra exclusive **Rewind-Say-Again™** feature to replay or record the last 20 seconds of an incoming audio transmission.

Example 1:

When engine noise, music or conversation creates too much noise to hear an inbound message clearly, press the **REW** button to hear the message a second time.

Example 2:

When listening to an urgent distress message of an excited caller with confusing background noise, press the **REW** button to hear the message a second time and get life saving information. Use this feature to record call details including position coordinates, call signs, registration numbers and store details that will help authorities locate the distressed vessel.

NOTE

Hold in the **Rewind** button to turn the recording mode Off and save the currently recorded transmission.

Using Rewind-Say-Again

1. During audio transmission, press **REW** button to listen to 20 seconds of the last recorded audio transmission. The **REW** icon will flash during the playing back of the message and a 20-second countdown begins.

2. Press the **TALK**, **REW** or **MEM/ESC** button during playback to stop the playback transmission. The radio returns to **Standby** mode.

Advanced Operation

SCAN Button Enter Record

Rewind Countdown Timer
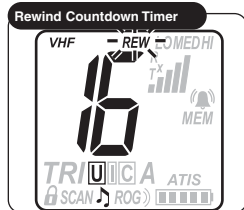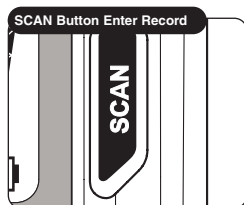
Using Rewind-Say-Again to Record Audio Transmission

1. Press and hold **SCAN** button for two (2) seconds to enter Record mode.

2. Press and hold **Talk** button to begin recording from radio microphone. If **Talk** button is released, recording stops. While recording, a 20-second countdown begins on display. When 20-second countdown time has ended, recording stops and two (2) beep tones will be heard.

3. Press and hold the **SCAN** button again for two (2) seconds or press **MEM/ESC** button to cancel recording and return to last operation.

NOTE

When using radio in **Record** mode, the **REW** feature is turned Off to prevent "recording over" previous message.

Maintenance and Troubleshooting

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	Recharge or replace batteries
	Batteries not installed properly	Remove batteries and reinstall according to polarity markings
LiON 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 five (5) watts	Batteries are low	Recharge or replace batteries
	Selected channel is imited to one (1) watt	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	Switch to three (3) or five (5) watts or move closer
	Signal is blocked by terrain	Move until you have a "line-of-sight" to the other station

Specifications

General	
Number of Channels	All International, Canadian and U.S.A. Channels
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	7.2 VDC
Battery Life: 5% TX, 5% RX, 90% Standby	LiON: 14 hours @ 5 watts, 23.5 hours @ 1 watt Alkaline: 20 hours @ 5 watts, 35 hours @ 1 watt
Current Drain: Standby Receive (Rx) Transmit (Tx)	40 mA 200 mA 1.8 A @ High Power, 700 mA @ Low Power
Temperature Range	-20°C to 50°C
Radio Dimensions	4.8" x 2.4" x 1.4" (123 mm x 62 mm x 36 mm) not including antenna
Radio Weight	0 lbs 8 oz. (228 g) without batteries
Receiver	
Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 20 dB Quieting 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, 3 or 5 watts
Spurious Emissions	-60 dB @ High Power, -55 dB @ Low Power
Microphone Type	Condenser
Frequency Stability	+/-10 ppm
FM Hum and Noise	40 dB

Trademark Acknowledgement

Cobra®, CobraMarine®, Nothing Comes Close to a Cobra®, VibraAlert®, and the snake design are registered trademarks of Cobra Electronics Corporation, USA.
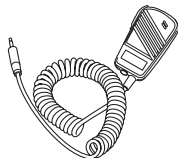
Cobra Electronics Corporation™ and Rewind-Say-Again™ are a trademark of Cobra Electronics Corporation, USA.

Accessories

Accessories

Additional accessories for your Cobra radio can be purchased separately. Each accessory will enhance the use of the radio and also offer convenience the end user.

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** button on the lapel speaker/ microphone allows you to answer any incoming call.

Declaration of Conformity

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later insertion of DOC