

Cobra MARINE™

Owner's Manual

SPLASHPROOF

VHF MARINE RADIO

MR HH 100

Printed in the Philippines
Part No. 400-087-P

Nothing comes close to a Cobra®

English

Introduction

Our Thanks To You And Customer Assistance

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 2-way vessel-to-vessel and vessel-to-shore station communications, primarily for safety and secondarily for navigation and operational purposes. With it, you can call for help, get information from other boaters, talk to lock or bridge tenders, and make radiotelephone calls to anywhere in the world through a marine operator.

Besides 2-way communications, the radio can provide quick access to receive all ten (10) NOAA (National Oceanographic and Atmospheric Administration) weather channels and alert you to weather emergencies with a tone on a weather channel you can select for your area.

Customer Assistance

Customer Assistance

Should you encounter any problems with this product, or not understand its many features, please refer to this owner's manual. If you require further assistance after reading this manual, Cobra® Electronics offers the following customer assistance services:

For Assistance In The U.S.A.

Automated Help Desk English only.

24 hours a day, 7 days a week 773-889-3087 (phone).

Customer Assistance Operators English and Spanish.

8:00 a.m. to 6:00 p.m. CT Mon. through Fri. (except holidays) 773-889-3087 (phone).

Questions English and Spanish.

Faxes can be received at 773-622-2269 (fax).

Technical Assistance English only.

www.cobra.com (on-line: Frequently Asked Questions).

English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside The U.S.A.

Contact Your Local Dealer

A1 English

©2003 Cobra® Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 USA
www.cobra.com

Radio Controls And Indicators

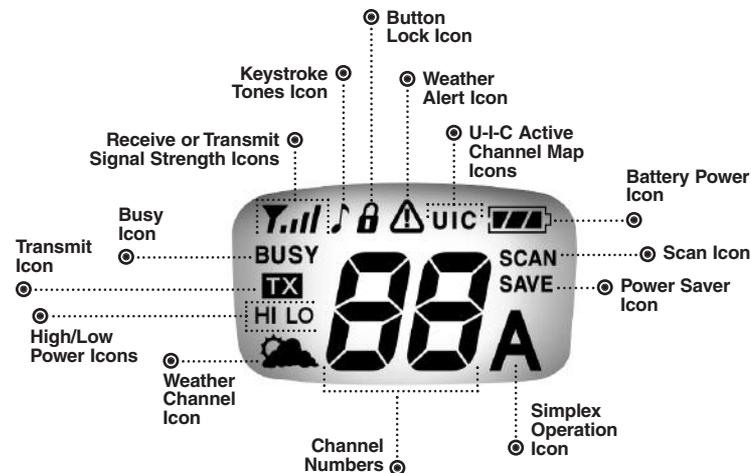
Introduction



Backlit LCD Screen and Product Features

Introduction

Backlit LCD (Liquid Crystal Display) Screen



Product Features

Dual Power

Selectable to 500 mW or two (2) watts output power for near or distant calling.

USA/International/Canada Channels

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

Ten (10) NOAA Weather Channels

Instant access to all of the national weather channels, 24 hours a day.

Emergency Weather Alert

Can alert you with an audible tone and visual alarm if threatening weather is nearby.

Splashproof

Water resistant — meets JIS4 Standards.

Channel Scan

Lets you scan through all channels to find conversations in progress.

Button Lock

Prevents accidental changes to your settings when you set this feature.

Instant Channel 16

Instant access to priority Channel 16.

Power Saver

Uses battery saver circuitry to extend the life of your batteries.

Keystroke Tones

Can be turned **On** or **Off**.

Waterproof Pouch

Makes the unit completely waterproof [one (1) pouch per radio included].



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Important Safety Information

Before assembling and using your CobraMarine™ VHF radio, please read these general precautions and warnings.

Warning And Caution Statements

To make the most of this radio, it must be assembled and used properly. Please read the assembly and operating instructions carefully before assembling and using it. Special attention must be paid to the **WARNING** and **CAUTION** statements in this manual.



WARNING

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



CAUTION

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

General Precautions



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:

ALWAYS hold the radio at least two (2) inches [Five (5) cm] away from you when you are transmitting.

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

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

DO NOT transmit more than 50% of the time the radio is in use.

DO NOT operate the radio in an explosive atmosphere, near blasting sites, or in any area where signs are posted prohibiting radio transmissions.

DO NOT allow children or anyone unfamiliar with proper procedures to operate the radio without supervision.



CAUTIONS

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

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

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

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

Changes or modifications to your radio **MAY VOID** its compliance with FCC 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 two (2) watt maximum output of your radio isn't sufficient for the distances you travel from the coast, consider purchasing a CobraMarine™ hand held radio with up to five (5) watts of output power or installing a Cobra® 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 U.S. Coast Guard does not endorse cellular telephones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a cellular telephone, only the party you call will be able to hear you. Additionally, cellular telephones may have limited coverage over water and can be hard to locate. If you don't know where you are, the Coast Guard will have difficulty finding you if you're using a cellular telephone.

However, cellular telephones can have a place on board where cellular coverage is available — to allow social conversations and keep the marine frequencies uncluttered and available for their intended uses.



FCC LICENSING INFORMATION

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

The radio operates on all currently allocated marine channels and is switchable for use according to U.S.A., International, or Canadian regulations. It features instant access to emergency Channel 16 and calling Channel 9 as well as NOAA (National Oceanic and Atmospheric Administration) All Hazards Radio with Alert that can be accessed by pressing one (1) key.

Station License

An FCC ship station license is no longer required for any vessel traveling in U.S.A. waters which uses a VHF marine radio, RADAR, or EPIRB (Emergency Position Indicating Radio Beacon), and which is not required to carry radio equipment. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone, or carrying a marine satellite terminal must obtain a station license.



FCC license forms and applications for ship and land stations can be downloaded through the Internet at www.fcc.gov/forms. Forms can also be obtained by calling the FCC at 888-225-5322.

International Station License

If your vessel will be entering the sovereign waters of a country other than the U.S.A. or Canada, you should contact that country's communications regulatory authority for licensing information.

Radio Call Sign

Currently, the FCC does not require recreational boaters to have a license. The United States Coast Guard recommends that the boat's registration number and state of registry (e.g., Illinois 1234 AB) be used as a call sign and be clearly visible on the vessel.

Canadian Ship Station License

This portable VHF radiotelephone is suitable ONLY for voluntary carriage onboard Canadian ships NOT subject to the Ship Station (Radio) Regulations, 1999. You may need a license if your vessel is operated in Canadian waters. Please contact the nearest field office or write: Industry of Canada, Radio Regulatory Branch, Attn: DOSP, 300 Slater Street, Ottawa, Ontario, Canada K1A 0C8.

User Responsibility And Operating Locations

All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The VHF frequencies on your radio are reserved for marine use and require a special license to operate from land, including when your boat is on its trailer.



NOTE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two (2) conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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



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 one-half (½) watt first if the station being called is within a few miles. 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 or on Channel 9. (Channel 9 is preferred for recreational vessel use.) You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

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, ship name, the state registration number, 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.



NOTE

Channel 9 may be used by recreational vessels for general-purpose calling. This frequency should be used whenever possible to relieve congestion on Channel 16.

- When the channel is quiet, press the **Talk** button and call the ship you wish to call. (Hold the microphone a few inches 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 listing on page 12 through 13.

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 best sound quality at the station you’re calling, hold the microphone at least two (2) inches [five (5) cm] from your mouth and slightly off to one (1) side. Speak in a normal tone of voice.

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 VHF radio and telephones on land, sea, and in the air. See pages 12 to 21 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. Those services can provide you with detailed information and procedures to follow.



CAUTION

You may disclose privileged information during a radiotelephone call. Keep in mind that your transmission is **NOT** private, as it is on a regular telephone. Both sides of the conversation are being broadcast and can be heard by anyone who has a radio and tunes to the channel you are using.

Emergency Messages And Distress Procedure

The ability to summon assistance in an emergency is the primary reason to have a VHF marine radio. The marine environment can be unforgiving, and what may initially be a minor problem can rapidly develop into a situation beyond your control. The Coast Guard monitors Channel 16, responds to all distress calls, and coordinates all search and rescue efforts. Depending on the availability of other capable vessels or commercial assistance operators in your vicinity, Coast Guard or Coast Guard Auxiliary craft may be dispatched.

In any event, do communicate with the Coast Guard as soon as you experience difficulties and before your situation becomes an emergency. Use the emergency message procedures only after your situation has become grave or you are faced with a sudden danger threatening life or property and requiring immediate help. 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 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-it-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 VHF 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].”
5. **Say:**
“MAYDAY (or “PAN” or “SECURITE”)
[your vessel name or call sign].”
6. **Tell where you are:**
(what navigational aids or landmarks are near).
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 item 3 above.

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

For Example

“Mayday — Mayday — Mayday”

“This is Corsair — Corsair — Corsair” [or “Illinois 1234 AB” three (3) times]

“Mayday Corsair (or Illinois 1234 AB)”

“Navy Pier bears 220 degrees magnetic — distance five (5) miles”

“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 (or Illinois 1234 AB) is 26 foot sloop with blue hull and tan deck house”

“I will be listening on Channel 16”

“This is Corsair (or Illinois 1234 AB)”

“Over”

It is a good idea to write out a script of the message form and post it where you and others on your vessel can see it when an emergency message needs to be sent.



VHF Marine Channel Assignments

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

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

Distress, Safety, And Calling

Channel 16

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

Calling

Channel 9

General purpose (non-emergency) calling by non-commercial vessels. Recreational boaters are urged to use this channel to reduce congestion on Channel 16.

Intership Safety

Channel 6

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

Coast Guard Liaison

Channel 22A

To talk to the Coast Guard (non-emergency) after making contact on Channel 16.

Non-Commercial

Channels 68*, 69, 71, 72, 78A, 79A*, 80A*

Working channels for small vessels. Messages must be about needs of the vessel, such as fishing reports, berthing, and rendezvous. Use Channel 72 only for ship-to-ship messages.

Commercial

Channels 1A, 7A, 8, 9, 10, 11, 18A, 19A, 63A, 67, 72, 79A, 80A, 88A*

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



Public Correspondence (Marine Operator)

Channels 24, 25, 26, 27, 28, 84, 84A, 85, 85A, 86, 86A, 87, 87A, 88*

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

Port Operations

Channels 1A*, 5A*, 12*, 14*, 20A, 63A*, 65A, 66A, 73, 74, 77*

Used for directing the movement of ships in or near ports, locks, or waterways. Messages must be about operational handling, movement, and safety of ships.

Navigational

Channels 13, 67

Channels are available to all vessels. Messages must be about navigation, including passing or meeting other vessels. These are also the main working channels for most locks and drawbridges. You must keep your messages short and power output at no more than one (1) watt.

Maritime Control

Channel 17

For talking to vessels and coast stations operated by state or local governments. Messages must be about regulation and control, boating activities, or assistance.

Digital Selective Calling

Channel 70

This channel is set aside for distress, safety, and general calling using only digital selective calling techniques. Voice communication is prohibited; your radio cannot transmit voice messages on this channel.

Weather

Channels Wx 1 Thru 10

Receive-only channels for NOAA weather broadcasts. You cannot transmit on them.



NOTE

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



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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 CAN



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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 (Coast Guard 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)



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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

VHF Marine Radio Protocols

Channel	Use
18	Port Operations, Ship Movement
18A	Commercial
19	Port Operations, Ship Movement
19A	Commercial
20	Canada (Coast Guard Only); International (Port Operations, Ship Movement)
20A	Port Operations
21	Port Operations, Ship Movement
21A	U.S. (Government Only); Canada (Coast Guard Only)
22	Port Operations, Ship Movement
22A	U.S. and Canadian Coast Guard 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 (Coast Guard Only); West Coast (Coast Guard Only); East Coast (Commercial Fishing)
62	Public Correspondence (Marine Operator), Port Operations, Ship Movement
62A	West Coast (Coast Guard Only); East Coast (Commercial Fishing)



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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	
77	•	•	•	156.875	156.875	1 Watt CAN



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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)
77	Port Operations (Intership only). Restricted to communications with pilots for movement and docking of ships.



VHF Marine Channel Assignments

VHF Marine Radio Protocols

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	Transmit	Receive	
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	
87A	•			157.375	157.375	
88	•	•	•	157.425	162.025	
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).



VHF Marine Channel Assignments

VHF Marine Radio Protocols

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 (Coast Guard Only)
83	Canada (Coast Guard Only)
83A	U.S. (Government Only); Canada (Coast Guard 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)
87A	Public Correspondence (Marine Operator)
88	Public Correspondence (Ship to Coast). In U.S. only within 75 miles of Canadian Border.
88A	Commercial Intership only



NOTE

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

NOAA Weather Channels And Alert

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

NOAA Emergency Weather Alert

In the event of a major storm or other weather condition requiring vessels at sea or on other bodies of water to be notified, NOAA broadcasts a 1050 Hz tone that receivers such as your CobraMarine™ VHF radio can detect and warn you of a weather alert condition. When the weather alert signal is sent on the weather channel you last used, your radio will switch from **Standby** mode to that weather channel. You will not hear the tone signal, but you will hear the weather alert message. The **Weather Alert** icon can be turned **On** or **Off** by pressing the **Mode** button.

Test

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

Weather Frequency

Channel	RX Frequency MHz
1	162.550
2	162.400
3	162.475
4	162.425
5	162.450
6	162.500
7	162.525
8	161.650
9	161.775
10	163.275

Included In This Package

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



Wrist Strap, Belt Clip, Spkr/Mic Jack And Waterproof Pouch

The radio is shipped with a **Wrist Strap**, **Belt Clip** and **Waterproof Pouch** in the package. The **Speaker/Microphone Jack** can be used with additional accessories. Contact your local Cobra® dealer or Cobra® directly for optional accessories.

Wrist Strap



Wrist Strap

Your radio comes with the **Wrist Strap** already attached. It can be easily removed if you choose not to use it.

Belt Clip



Belt Clip

Use the **Belt Clip** to carry your radio around with you. Simply squeeze the clip and place it where you prefer.

External Speaker/Microphone Jack

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

Speaker/Microphone Tab



To Attach The External Speaker/Microphone:

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

Waterproof Pouch

Use the included **Waterproof Pouch** to not only keep your radio dry, but also dust and dirt free.

Waterproof Pouch



To Enclose The Radio In The Waterproof Pouch:

1. With the CobraMarine™ logo facing up, slip radio, face up, into opening under Velcro® flap at the bottom of the waterproof pouch.
2. Turn pouch and radio over so that the CobraMarine™ logo is facing down.
3. Roll bottom of pouch (between Velcro® pieces) towards upper piece of Velcro®.
4. Secure bottom piece of Velcro® to upper piece of Velcro®.

Batteries And Charger Jack

Remove Belt Clip



Remove Battery Cover



Insert Four (4) Batteries



Installing The Batteries (Not Included)

To Install Or Replace Batteries:

1. Remove belt clip by releasing belt clip latch and sliding clip down.
2. Pull down on the battery door latch to remove the battery compartment cover.
3. Insert four (4) AAA batteries. (Always use high quality alkaline batteries.) Position batteries according to polarity markings.
4. Replace battery compartment cover and belt clip.

Charger Jack

When the optional Cobra® NiCD rechargeable batteries (part No. NiCB) are used, the batteries can be charged using the optional Cobra® wall mount charger (part No. WWC). Simply place the Cobra® NiCD rechargeable batteries (part No. NiCB) in the battery compartment, open the charge tab on the side of the unit and insert the plug into the **Charger Jack** to start charging. The batteries should be fully charged in about 15 hours.



NOTE

Contact your local Cobra® dealer or Cobra® directly for optional accessories.



WARNING

Only the rechargeable NiCD batteries (part No. NiCB) can be recharged.

Maintaining The Battery Charge

As you use your radio, the battery power icon will show the battery power remaining. When the icon shows only one or no segment, it is time to change the batteries.

Fully Charged



Getting Started

Refer to the foldout on the front cover 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 buttons on the transceiver or on the microphone. Press means a momentary press, then release; press and hold means to hold the button down.

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 five (5) 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.

Power On-Off

The **On-Off Power/Volume** knob on the top of the radio is held in the **Off** position by a click stop.

On-Off Power/Volume Knob



To Turn Your Radio On:

1. Turn the **On-Off Power/Volume** knob clockwise until you hear and feel a click.

When the radio is powered **On**, a brief tone will sound, the display backlight will turn **On**, and the display will show all icons for two (2) seconds. All buttons will be inoperative during these two (2) seconds.

After two (2) seconds, the radio will return to the settings in effect when it was last powered **Off**, the LCD will show the appropriate icons, and all controls will be operative. The radio will then be in **Standby** mode.

When first turned on or after memory loss, the following defaults will be set:

- Channel 1A
- Transmit power high
- Frequency channel map set to U.S.A.
- Battery indicator set

To Turn Your Radio Off:

1. Turn the **On-Off Power/Volume** knob all the way counter-clockwise until you hear and feel a click.

On-Off Power/Volume Knob



Volume

The **On-Off Power/Volume** knob also controls the speaker **Volume**. The **Volume** adjustment applies only to what you hear from the speaker and does not affect the **Volume** of your outgoing messages, which is controlled by the circuitry of your radio.

To Increase the Volume:

1. Turn the **On-Off Power/Volume** knob clockwise.

To Decrease the Volume:

1. Turn the **On-Off Power/Volume** knob counter-clockwise.

On-Off Power/Volume Knob



Power Saver Icon



Power Saver

Your radio has a unique circuit designed to extend battery life. If there are no transmissions within ten (10) seconds, the radio will automatically switch to **Power Save** mode and the **Save** icon will flash in the LCD. This will not affect the radio's ability to receive incoming transmissions.

Weather/UIC Button



Active Channel Map Icon



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

Three (3) sets of VHF **Channel Maps** have been established for marine use in the U.S.A, Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see information on pages 14 to 21). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

To Set Your Radio For The Area In Which You Will Be Using It:

1. From **Standby** mode, press and hold the **Weather/UIC** button for three (3) seconds. The **U**, **I**, or **C** icon will blink on the LCD. Repeat step 1 to shift to the next channel map(s).

Getting Started

Channel Up or Down Buttons



Channels

Your radio will receive and transmit VHF signals on the **Channel** indicated on the LCD. You can change the **Channel** at any time using the **Channel Up** and **Channel Down** buttons.

Currently On Channel 88



To Change Channels:

1. Press the **Channel Up** or **Channel Down** button.

You are on Channel 88, pressing the **Channel Up** button will advance to Channel 1. If you are on Channel 1, pressing the **Channel Down** button will advance to Channel 88.

You can hold the **Channel Up** or **Channel 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 radio is in the **Key Lock** mode, the channel will not change and the three (3) beep error signal will sound.

Low Power Mode



High Power Mode



High/Low Power – Lock Button



Transmit Power Output

Your radio can **Transmit** selectively at one-half ($\frac{1}{2}$) or two (2) watts of power. Cobra® suggests you maintain the low power setting for short-range communications, to conserve battery life, and to avoid overpowering nearby stations with your signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at one-half ($\frac{1}{2}$) watt.

To Toggle Between The High And Low Power Modes:

1. Press the **High/Low Power – Lock** button.
The LCD will show which mode is in effect.

Getting Started

Backlight/Monitor Button



Backlight

The LCD will be illuminated by the **Backlight** whenever the **Backlight/Monitor** button is pressed. It will remain **On** for (10) seconds. If a button on the front panel is pressed while the **Backlight** is **On**, it will remain **On** for ten (10) seconds after that button is pressed.

Locked Buttons



High/Low Power-Lock Button



Key Lock Icon



Key Lock

To prevent accidental changes to your settings, you can **Lock**:

- Channel Up Button
- Channel Down Button
- High/Low Power Feature
- Mode Button
- Weather/UIC Button

To Lock Or Unlock The Buttons:

1. Press and hold the **Hi-Lo Power/Lock** button for three (3) seconds. The **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/Monitor** button and the **Talk** button are active — you can receive or transmit a message with key lock **On**, but you cannot change the channel.

Standby/Receive And Transmit

Standby And Receive

Standby mode is the usual mode for the radio whenever it is turned **On**. From this mode, you can change your settings using the buttons on the front of the radio and switch to **Transmit** mode using the **Talk** button. Signals will be **Received** on the selected channel(s) and alerts broadcast by the Coast Guard and NOAA will activate the corresponding routines in your radio.



NOTE

Coast Guard alerts are broadcast on Channel 16 and you need to have weather alert turned **On** to receive NOAA alerts.

While in **Standby** mode, you will receive any messages sent on the channel to which you are tuned.

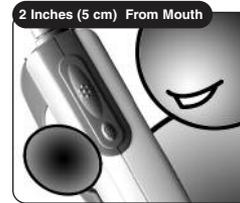
Transmit

Transmit 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 12 through 21 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 two (2) inches [five (5) cm] 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 the **Transmit** or the **Receive** mode at any given time. You will not hear the response to your message unless the **Talk** button is released.

When the last segment disappears from the **Battery Power** icon, the battery outline of the icon will start to blink to indicate very little power is left. The radio will still transmit until the battery voltage drops below the minimum required to operate the radio.



NOAA All Hazards/Weather Radio And Alert

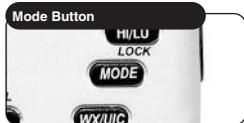
Weather Radio

NOAA broadcasts **Weather** information as described in the NOAA **Weather** channels section on page 22 of this manual. You can tune to these ten (10) channels at any time (only in the **Receive** mode).



NOTE

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



To Listen To The Weather Channels:

1. From **Standby** mode, press the **Weather/UIC** button. The radio will enter the **Weather** mode and the icon will show on the LCD.
2. Press the **Channel Up** or **Channel Down** button to change the weather channels — hold the button for fast advance.
3. To exit the **Weather** mode and return to **Standby** mode, press the **Weather/UIC** button again.

Weather Alert

NOAA also broadcasts special **Weather Alerts** to warn of severe weather. These are preceded by a special signal that your radio can detect. However, you must set your radio to the weather channel that broadcasts a strong signal in the area where you are, and you must activate the **Weather Alert** mode on your radio to benefit from this signal.



To Activate Weather Alert:

1. Press the **Mode** button until the **Weather Alert** icon flashes and the current **On** or **Off** setting is displayed.
2. Press the **Channel Up** or **Channel Down** button to turn **Weather Alert** mode **On** or **Off**.
3. **Alert** icon will continue to be displayed when weather alert is **On**.
 - a. Press the **Mode** button to enter the new setting and proceed to other functions.
 - b. Press the **Talk** button to enter the new settings and return to **Standby** mode.

Weather Alert Signal

In the event of a major storm or other weather condition requiring vessels at sea or on other bodies of water to be notified, NOAA broadcasts a 1050 Hz tone that receivers such as your CobraMarine™ VHF radio can detect and warn you of a **Weather Alert** condition. When the **Weather Alert** signal is sent on the weather channel you last used, your radio will switch from **Standby** mode to that weather channel. You will not hear the tone signal, but you will hear the weather alert message. The **Weather Alert** icon can be turned **On** or **Off** by pressing the **Mode** button.

Advanced Operation

Channel 16 Button



Channel 16

This function gives you quick access to the calling **Channel 16** — from any operational mode.

To Switch To Channel 16:

1. Press the **Channel 16** button to change to Channel 16.

To exit the **Channel 16** mode and return to whatever status existed before entering this mode, press the **Channel 16** button a second time.



While at Channel 16 in the **Channel 16** mode, you can also press the **Channel Up** and **Channel Down** buttons to change channels. In that event, another press of the **Channel 16** button will switch your radio to Channel 16 and the sequence will start over at step 1.

If you press the **Channel Up** or **Channel Down** button when **Key Lock** mode is **On**, you will get a three (3) beep error message and your radio will not change mode.

Channel Scan

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

Mode Button



To Enter Channel Scan:

1. Press the **Mode** button until the **Scan** icon flashes on the display.
2. Press the **Channel Up** or **Channel Down** button to begin scanning channels.

Scan Icon



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.



NOTE

The radio's operation will be suspended indefinitely until the **Channel Up** or **Channel Down** button is pressed while the **Scan** icon is flashing.

Channel Up or Down Buttons



To Exit Channel Scan:

1. From **Scan** mode, press the **Talk** button. This will return the radio to **Standby** mode on the last scanned channel

Talk or Channel Up/Down



During **Channel Scan** (while receiving an incoming transmission), You Can Choose From The Following:

- a. Press the **Talk** button to remain on that channel and end scanning. This will return the radio to **Standby** mode.
- b. Press the **Channel Up** or **Channel Down** button to resume scanning channels.

If you do not press any buttons within ten (10) seconds, your radio will automatically resume scanning channels.

During **Channel Scan** (while not receiving a transmission), You Can Choose From The Following:

- a. Press the **Talk** button to communicate on the last memory location scanned and return to **Standby** mode.
- b. Press the **Channel Up** or **Channel Down** button to change scan direction.

Keystroke Tones

With **Keystroke Tones** turned **On**, your radio will sound beeps each time you press a button or change a setting.

Mode Button



To Turn Keystroke Tones On Or Off:

When you turn **On** your radio for the first time, keystroke tones will be **On**.

Keystroke Tones Icon



1. Press the **Mode** button until the **Keystroke Tones** icon flashes on the display. The current **On** or **Off** setting is displayed.

2. Press the **Channel Up** or **Channel Down** button to turn keystroke tones **On** or **Off**.

3. When your desired **Keystroke Tone** mode setting is displayed, choose one (1) of the following:

- a. Press the **Mode** button to enter the new setting and proceed to other functions.
- b. Press the **Talk** button to enter the new setting and return to **Standby** mode.

The setting you select will be saved when you turn your radio off and on again. When keystroke tones are **On**, the **Keystroke Tone** icon will be displayed.

Channel Up or Down Buttons



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 build-up 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 compartment and store them in a separate package. This is especially so 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	Replace batteries Remove batteries and reinstall according to polarity markings
Will transmit at one-half (½) watt, but not at two (2) watts	Batteries are low Selected channel is limited to one (1) watt	Replace batteries Switch to another channel
Will not transmit	Selected channel is limited to receive only	Switch to another channel
No sound from speaker	Volume level is too low	Re-adjust volume
No response to button press	Button lock is On	Press and hold Hi-Lo Power/Lock button
No answer to calls	Out of range of other station Signal is blocked by terrain	Switch to two (2) watts or move closer Move until you have a “line-of-sight” to the other station

Specifications

General	
Frequency Range: TX	156.025 to 157.425 MHz
Frequency Range: RX	156.050 to 163.275 MHz
Number of Channels	All U.S., Canadian, and International 10 NOAA Weather Channels
Channel Spacing	25 kHz
Modulation	16 KOF3E
Input Voltage	6 VDC
Battery Life: 5% TX, 5% RX, 90% Stand-by	Alkaline Batteries: 20 Hours @ 2 Watts, 24 hours @ ½ Watt
Current Drain: Stand-by Receive Transmit	10 mA 35 mA 700 mA @ High power 200 mA @ Low
Temperature Range	-20°C to 60°C
Radio Dimensions W x D x H	2.13" x 1.2" x 8.77" (including antenna) (4.1 mm x 0.5 mm x 22.8 mm)
Radio Weight	4 oz. (without batteries) (0.1 kg)
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	-50 dB
Intermodulation and Rejection	-60 dB
Spurious and Image Rejection	-50 dB
AF Output	250 mW @ 8 Ohms
Transmitter	
Frequency Range: TX	156.025 to 157.425 MHz
RF Output Power	½ Watt and 2 Watts
Spurious Emissions	-60 dB High -55 dB Low
Microphone Type	Condenser
External Microphone Impedance	1000 Ohms
Frequency Stability	+/-10 ppm
FM Hum and Noise	-45 dB



Limited 1-Year Warranty

For Products Purchased In The U.S.A.

Cobra® Electronics Corporation warrants that its CobraMarine™ VHF radio, and the component parts thereof, will be free of defects in workmanship and materials for a period of one (1) year from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Cobra® will, without charge, repair or replace, at its option, defective radios, products or component parts upon delivery to the Cobra® Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra®'s expense, if the product is repaired or replaced under warranty. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Exclusions: This limited warranty does not apply:

1. To any product damaged by accident;
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs;
3. If the serial number has been altered, defaced, or removed;
4. If the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. Cobra® shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

For Products Purchased Outside The U.S.A.

Please contact your local dealer for warranty information.



Product Service

If you have any questions about operation or installing your new CobraMarine™ VHF product, or if you are missing parts...

Please call Cobra® first! DO NOT RETURN THIS PRODUCT TO THE STORE! See customer assistance on page A1.

If your product should require factory service, please call Cobra® first before sending your radio. This will ensure the fastest turn-around time on your repair. You may be asked to send your radio to the Cobra® factory. It will be necessary to furnish the following to have the product serviced and returned:

1. For warranty repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon of a sales receipt. If you send the original receipt, it cannot be returned.
2. Send the entire product.
3. Enclose a description of what is happening with the radio. Include a typed or clearly printed name and address of where the radio is to be returned.
4. Pack radio securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to: Cobra® Factory Service, Cobra® Electronics Corporation, 6500 West Cortland Street, Chicago, Illinois 60707 U.S.A.
6. If the radio is in warranty, upon receipt of your radio, it will either be repaired or exchanged depending on the model. Please allow approximately three (3) to four (4) weeks before contacting Cobra® for status. If the radio is out of warranty, a letter will automatically be sent informing you of the repair charge or replacement charge.

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

Order Form

Name

Address (No P.O. Boxes)

City

State/Province

Zip

Country

Telephone

Credit Card Number

Type: Visa MasterCard Discover

Exp. Date

Customer Signature

Amount Shipping/Handling*

\$10.00 or less \$3.00

\$10.01-\$25.00 \$5.50

\$25.01-\$50.00 \$7.50

\$50.01-\$90.00 \$10.50

\$90.01-\$130.00 \$13.50

\$130.01-\$200.00 \$16.50

\$200.01 plus 10% of purchase

*For AK, HI and PR add additional \$26.95 for FedEx Next Day or \$10.95 for FedEx 2nd Day. Excludes weekend and holiday shipments.

Please allow 2-3 weeks for delivery in the U.S. Prices subject to change without notice.

The Cobra® line of quality products includes:

CB Radios
microTALK® Radios
Radar/Laser Detectors
Safety Alert® Traffic Warning Systems
Accessories
GPS (Global Positioning System)
HighGear® Accessories
VHF Marine Radios
Power Inverters

Item #	U.S. Cost Each	Qty	Amount
Tax Table		U.S. Subtotal	
Wisconsin add 5%	(Tax if Applicable)		
Indiana, Ohio, Michigan add 6%	Shipping/Handling		
California add 7.25%	Total		
Illinois add 8.75%			

Optional Accessories

You can find quality Cobra® products and accessories at your local Cobra® dealer, or in the U.S.A., you can order directly from Cobra®.

Ordering From U.S.A.

Call 773-889-3087 for pricing or visit www.cobra.com.

For credit card orders, complete and return this order form to fax number 773-622-2269. Or call 773-889-3087 (Press 1 from the main menu) 8:00 a.m. to 6:00 p.m. CT, Monday through Friday.

Make check or money order payable to:

Cobra® Electronics, Attn: Accessories Dept.
6500 West Cortland Street, Chicago, IL 60707 USA

To order online, please visit our website: www.cobra.com