Cobra MARINE™

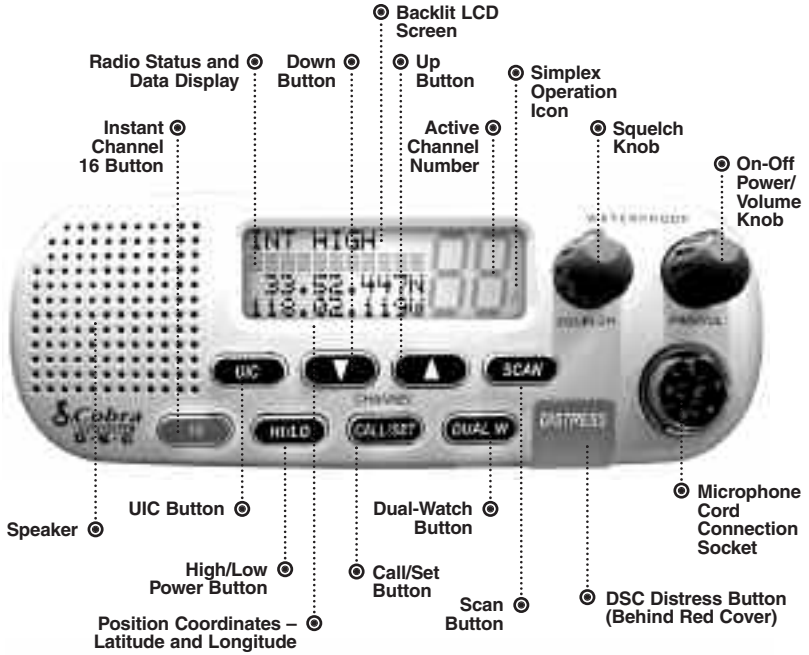
Owner's Manual

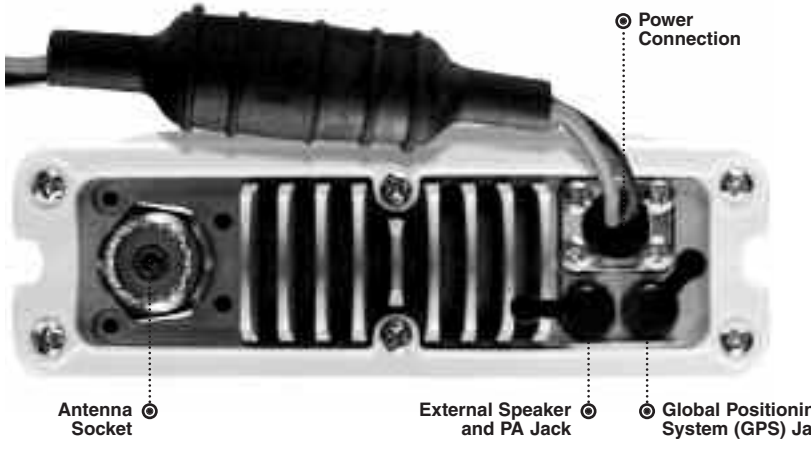
VHF MARINE RADIO

MR F55 EU

Printed in China Part No. 480-120-P

Transceiver Controls, Indicators and Connections





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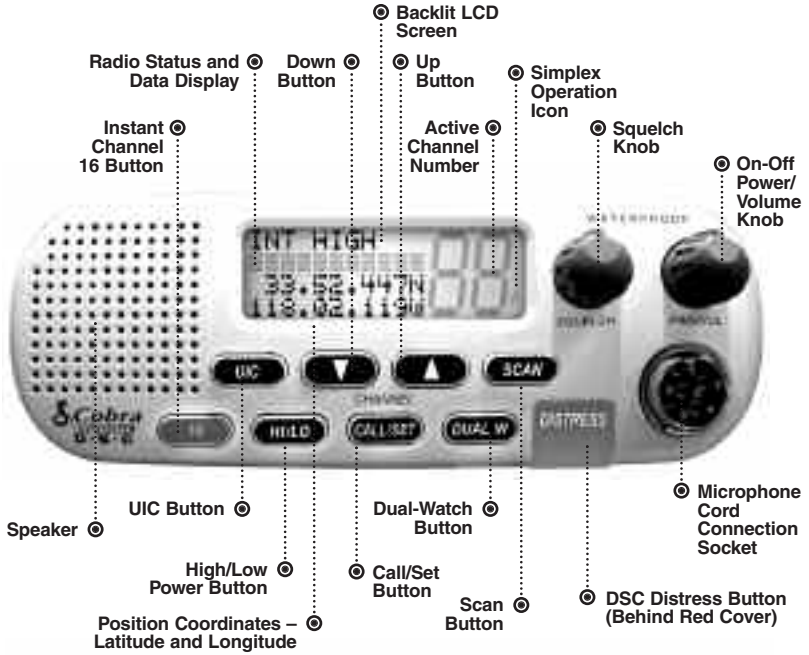

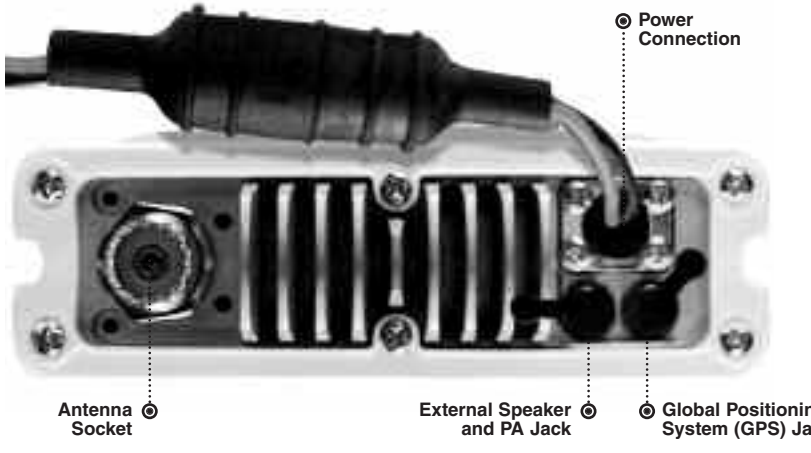

Table of Contents

Important Safety Information

Before installing 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 installed and used properly. Please read the installation and operating instructions carefully before installing 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

The following **WARNINGS** and **CAUTIONS** will make you aware of RF exposure hazards and how to assure you operate the radio within the recommended RF exposure limits.

WARNINGS
Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy, DO NOT touch the antenna when transmitting and KEEP yourself and all others on your vessel the required distance away from the antenna while transmitting. SEE page 28 in the antenna requirements section for further information.

DO NOT operate the radio without a proper antenna or equivalent dummy load attached. Doing so may expose you to excessive RF energy and will damage the radio.

DO NOT transmit more than 10% of the time the radio is in use — 50% duty cycle. The radio is transmitting when the **Talk** button is pressed and the transmit information shows on the LCD screen.

ALWAYS use only Cobra Electronics Corporation™ authorized accessories.

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

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Recommendations for Marine Communication

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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 25 watt maximum output of your radio isn't sufficient for the distances you travel from the coast, consider installing 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 don't know where you are, the coastguard will have difficulty finding you if you're 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.

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VHF Marine Radio Procedures

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 kilometres. 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 2 minutes before calling again. After three 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.

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Digital Selective Calling (DSC)

Digital selective calling is a semi-automated system for establishing a radio call. It has been designed by the International Maritime Organization (IMO) as an international standard for VHF, MF and HF calls and is part of the Global Maritime Distress and Safety System (GMDSS). This radio follows Class D DSC with a dedicated Channel 70 receiver.

DSC will eventually replace aural (listening) watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts. Until DSC is fully implemented, it is still necessary to maintain a listening watch on Channel 16.

The DSC system allows mariners to instantly send a distress call with GPS position coordinates (requires a GPS receiver to be connected to the radio) to the coastguard and other vessels within range of the transmission. DSC also allows mariners to initiate and receive distress, urgent, safety, routine, position request, position send and group calls between vessels equipped with DSC capable radios.

WARNING
This equipment is designed to generate a digital maritime distress and safety signal to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF station with a distress and safety watch system. The range of the signal may vary, but under normal conditions should be approximately 20 nautical miles.

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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 VHF radio and telephones on land, sea and in the air. See pages 14 – 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. 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 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, do 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. 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 give you a tow.

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Emergency Messages and Distress Procedure

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 PAN — PAN PAN"
   or "SECURITE — SECURITE — SECURITE").
4. **Say:**
   "THIS IS [your vessel name or call sign]."
5. **Say:**
   "MAYDAY (or "PAN PAN" or "SECURITE")
   [your vessel name or call sign].
6. **Tell where you are:**
   (Your position or 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.

For medical problems such as crew hit by sailboat boom or heart trouble, make a PAN PAN call as above with the word medico added.

"PAN PAN MEDICO — PAN PAN MEDICO — PAN PAN MEDICO"

The coastguard will try to link you to a doctor who can give expert advice and evaluate the need for evacuation.

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VHF Marine Channel Assignments

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Three sets of VHF channels 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 maps, but there are definite differences (see table on the following pages). Your radio has all three 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 38 for instructions on how to change the Channel Map.)

In many countries or areas, several additional recreational channels are available. To use any of these, they must be programmed into your radio by your local dealer or distributor.

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.

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VHF Marine Channel Assignments

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

VHF Marine Channel Assignments

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

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	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 Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	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 Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	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
78	•			156.925	161.525	
78A		•	•	156.925	156.925	

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	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
78	•			156.925	161.525	
78A		•	•	156.925	156.925	

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Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
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 A2).

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
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	
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World City Time Zones

World City Time Zones

Longitudinal Zone	Offset	City
E172.50 to W172.50	-12	IDLW (International Date Line West)
W172.50 to W157.50	-11	Nome
W157.50 to W142.50	-10	Honolulu
W142.50 to W127.50	-9	Yukon STD
W127.50 to W112.50	-8	Los Angeles
W112.50 to W097.50	-7	Denver
W097.50 to W082.50	-6	Chicago
W082.50 to W067.50	-5	New York
W067.50 to W052.50	-4	Caracas
W052.50 to W037.50	-3	Rio de Janeiro
W037.50 to W022.50	-2	Fernando de Noronha
W022.50 to W007.50	-1	Azores Islands
W007.50 to E007.50 GMT	+0	London
E007.50 to E022.50	+1	Rome
E022.50 to E037.50	+2	Cairo
E037.50 to E052.50	+3	Moscow
E052.50 to E067.50	+4	Abu Dhabi
E067.50 to E082.50	+5	Maldives
E082.50 to E097.50	+6	Dhuburi
E097.50 to E112.50	+7	Bangkok
E112.50 to E127.50	+8	Hong Kong
E127.50 to E142.50	+9	Tokyo
E142.50 to E157.50	+10	Sydney
E157.50 to E172.50	+11	Solomon Islands
E172.50 to W172.50	+12	Auckland

NOTE

See time offset on page 37 for more information on setting the time zone.

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W112.50 to W097.50	-7	Denver
W097.50 to W082.50	-6	Chicago
W082.50 to W067.50	-5	New York
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W037.50 to W022.50	-2	Fernando de Noronha
W022.50 to W007.50	-1	Azores Islands
W007.50 to E007.50 GMT	+0	London
E007.50 to E022.50	+1	Rome
E022.50 to E037.50	+2	Cairo
E037.50 to E052.50	+3	Moscow
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E112.50 to E127.50	+8	Hong Kong
E127.50 to E142.50	+9	Tokyo
E142.50 to E157.50	+10	Sydney
E157.50 to E172.50	+11	Solomon Islands
E172.50 to W172.50	+12	Auckland

NOTE

See time offset on page 37 for more information on setting the time zone.

Mounting and Powering the Radio

Before using your CobraMarine™ VHF radio, it must be installed on your vessel.

Installing Your Radio

Choose a location for your radio where it will be conveniently accessible with the following factors in mind:

- The leads to the battery and the antenna are best kept as short as possible.
- The antenna must be mounted at least 1 metre from the transceiver.
- The radio and all speakers need to be far enough from any magnetic compass to avoid deviation due to the speaker magnet.
- There needs to be free air flow around the heat-sink fins on the back of the transceiver.

Surface Mount

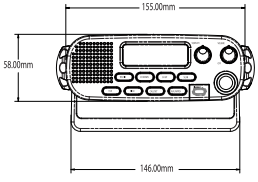
A **Surface Mounting** kit is included with your CobraMarine™ VHF radio to allow its installation on almost any flat surface.

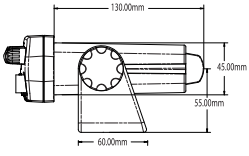
Surface Mounting Kit

To mount the transceiver on almost any flat surface:

1. Use the mounting bracket as a template to drill holes for the mounting screws.
2. Attach the mounting bracket to the chosen surface.
3. Attach the transceiver to the mounting bracket with the locking knobs.
4. Tilt the transceiver to a convenient angle and tighten the locking knobs.

Tilt Lock Knobs





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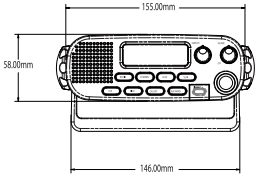
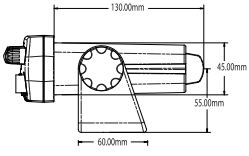
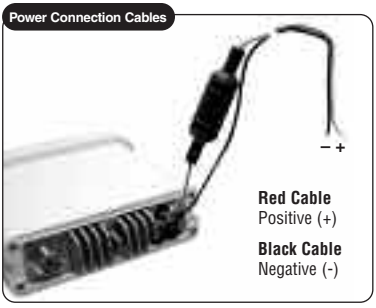




Antenna Requirements and Attachment



Electrical Power Connection

Your CobraMarine™ VHF radio is powered from the vessel's 13.8 volt negative ground direct current electrical system (12 volt nominal). A fused power connection lead is provided at the back of the transceiver.

To connect to a power source:

1. Attach the black power wire to a negative ground.
2. Attach the fused red power wire to the positive side of the power system.

CAUTION

A reverse polarity connection will damage the radio.

When replacing the fuse in your transceiver, use only the size and type originally provided.

NOTE

Please ensure that the radio is disconnected from the battery via an accessory switch or other means when not in use. All wiring is best kept as short as possible. If the power leads must be extended, use a high quality marine grade cable sized for up to 10 amps of current. To minimize voltage drop, choose a wire gauge as follows:

Length	Wire Gauge
Up to 1.5m	#14
Up to 3.0m	#12
Up to 5.0m	#10
Up to 6.0m	#8

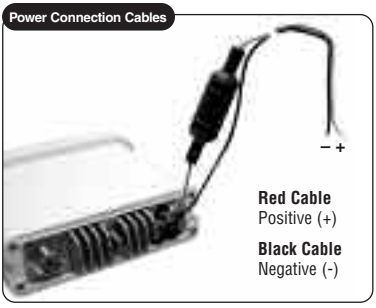
Antenna Requirements and Attachment

Antenna Requirements

Your CobraMarine™ VHF radio requires an external marine antenna to send signals into the air and to receive them. The radio is arranged to use any of the popular marine VHF antennas, but it is up to you to choose which antenna to use.

Since it represents the link between your radio and the outside world, Cobra Electronics Corporation™ suggests you purchase the best quality antenna, coaxial cable, and connectors you can. This is best accomplished with the guidance of a knowledgeable dealer who can assess the variables involved with your particular boat and preferences.

Antenna Requirements and Attachment



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External Devices and Connections

External Devices and Connections

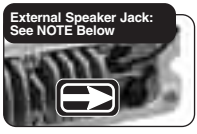
Your CobraMarine™ VHF radio is set up to connect auxiliary devices for navigation, convenience and added versatility. As is the case with the antenna, choosing these devices is best done with the advice and guidance of a knowledgeable dealer. Standard connectors are provided on the front and back of the transceiver.

Microphone Attachment

Connect the **Microphone** to the cord socket located at the left side of the front of the transceiver.

To connect the microphone attachment:

1. Align the connector and push it firmly into the socket.
2. Tighten the captive nut to hold the connector in place.
3. Slide the waterproof sleeve over the nut until it seats in the recess around the socket.



External Speaker (not included)

An **External Speaker** can provide greater volume to hear messages than the speaker incorporated in the CobraMarine™ transceiver.

To install an external speaker:

1. Connect the speaker lead to the standard jack on the back of the transceiver.

NOTE

The **External Speaker** on the back of the transceiver requires a 3.5 mm standard mono plug that is wired appropriately for the auxiliary speaker:

Tip of plug = External Speaker output
Sleeve = Ground

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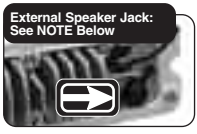

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Sleeve = Ground

Confirmation Tone

Single high-pitched beep confirms all button presses except the **Talk** button. It can be turned **on** or **off**. See set-up routines on page 37.

Error Tone

Double low-pitched beep indicates an invalid button press.

DSC Distress Alarm

High – low – high – low – high. Pause, then repeat. The volume of this alarm will increase after 10 seconds. Press any button to turn it **off**.

NOTE

This alarm sounds only for DSC distress calls on Channel 70. It does not sound for voice calls on Channel 16 — you still must listen for those.

Distress Acknowledgement Alarm

High – low. Long pause, then repeat. Press any button to turn it **off**.

DSC Routine Call Alarm

High – pause – high – pause – high. Long pause, then repeat. Press any button to turn it **off**.

Power On-Off

Transceiver power can be turned **on** or **off** by the **On-Off Power/Volume** knob on the transceiver.

To turn your radio on or off:

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

When the radio is powered **on**, the confirmation tone will sound.

Confirmation Tone

Single high-pitched beep confirms all button presses except the **Talk** button. It can be turned **on** or **off**. See set-up routines on page 37.

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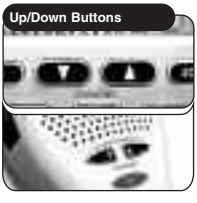
Standby and Receive

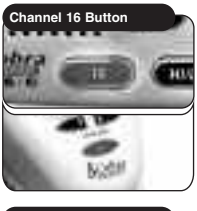
Standby mode is the usual mode for the radio whenever it is turned **on**.

Standby Mode

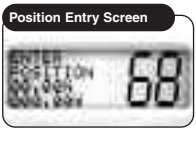
Up/Down Buttons



Channel 16 Button



Position Entry Screen



From Standby mode, you can:

- Change your radio's settings using set-up routines.
- Receive messages on the current channel as well as DSC messages.
- Switch to **Transmit** mode using the **Talk** button.

While the radio is in **Standby** mode, the **Receive** mode is entered whenever a strong enough signal to break squelch is sent to the radio. You will hear the message through whichever speakers are connected to the radio.

To change the channel you are listening to, you can choose one of the following:

a. Press the **Up/Down** buttons. This will take you to the next higher or lower VHF channel. For rapid advance, press and hold the **Up** or **Down** button.

b. Press the **Channel 16** button. This will take you directly to Channel 16.

Position Information:

If a GPS is connected, its position data will be displayed at the position coordinates portion of the LCD. If a GPS is not connected, either the last available input or zeros will be displayed as the position coordinates.

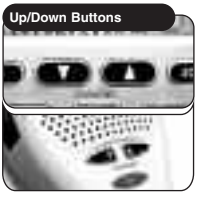
After 4 hours of operation with no position input, the position entry screen will request a manual position entry. Use the **Up/Down** and **Call/Set** buttons to enter the position of your vessel. If no entry is made within 19½ hours after the position entry screen appears, 9's will be displayed as the default position coordinates.

Standby and Receive

Standby mode is the usual mode for the radio whenever it is turned **on**.

Standby Mode

Up/Down Buttons



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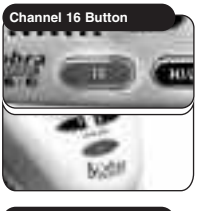

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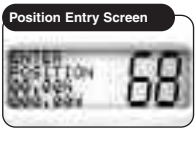

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Set-Up Routines

LCD Backlight

The LCD has a **Backlight** lamp to make it visible in the dark.
This lamp can be adjusted for brightness or turned **off**.

Lamp Adjustment

High/Medium/Low/Off

To adjust the backlight level:

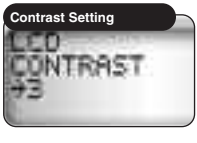
1. Enter the **Settings** menu and scroll to LAMP ADJ (lamp adjustment) with the **Up/Down** buttons.
2. Press the **Call/Set** button and observe the current backlight setting — HIGH, MEDIUM, LOW or OFF.
3. Use the **Up/Down** buttons to switch to the setting you want.
4. Press the **Call/Set** button to select the backlight setting.
5. Use the **Up/Down** buttons to scroll to EXIT.
6. Press the **Call/Set** button to return to the **Settings** menu.

LCD Contrast

The LCD backlight will not be visible in daylight, but the **LCD Contrast** can be adjusted to make it easier to read in different light conditions.

Contrast

Contrast Setting



To change the contrast:

1. Enter the **Settings** menu and scroll to CONTRAST with the **Up/Down** buttons.
2. Press the **Call/Set** button and observe the current contrast setting — a number between 1 and 16.
3. Use the **Up/Down** buttons to change the number up or down.
4. Press the **Call/Set** button to select a contrast level.
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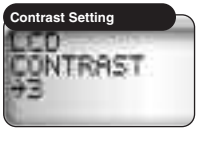

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Set-Up Routines

Setting Position and Time of Day

This allows you to manually set your position and time if you do not have a GPS connected. This might be used for emergency calls and other features that are part of this radio.

Manual

To set position and time:

1. Enter the **Settings** menu and scroll to MANUAL using the **Up/Down** buttons.
2. Press the **Call/Set** button to enter MANUAL position entry.
3. Use the **Up/Down** buttoms to select the digits for your position.
4. Press the **Call/Set** button to select and move to the next choice until you have entered your current position and time of day.

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

Three 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 maps, but there are definite differences (see table on pages 14 – 23). Your radio has all three maps built into it and will operate correctly in whichever area you choose.

UIC Button

Active Channel Map

To set your radio for the area in which you will be using it:

1. From **Standby** mode, press and hold the **UIC** button. The radio will shift one channel map and the active channel map will show on the top line of the LCD.
2. Repeat step 1 to shift to the next channel map(s) in the sequence INT (International), CAN (Canada), USA then back to INT.

The radio will return to **Standby** mode each time the button is released.

Set-Up Routines

Setting Position and Time of Day

This allows you to manually set your position and time if you do not have a GPS connected. This might be used for emergency calls and other features that are part of this radio.

Manual

To set position and time:

1. Enter the **Settings** menu and scroll to MANUAL using the **Up/Down** buttons.
2. Press the **Call/Set** button to enter MANUAL position entry.
3. Use the **Up/Down** buttoms to select the digits for your position.
4. Press the **Call/Set** button to select and move to the next choice until you have entered your current position and time of day.

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

Three 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 maps, but there are definite differences (see table on pages 14 – 23). Your radio has all three maps built into it and will operate correctly in whichever area you choose.

UIC Button

Active Channel Map

To set your radio for the area in which you will be using it:

1. From **Standby** mode, press and hold the **UIC** button. The radio will shift one channel map and the active channel map will show on the top line of the LCD.
2. Repeat step 1 to shift to the next channel map(s) in the sequence INT (International), CAN (Canada), USA then back to INT.

The radio will return to **Standby** mode each time the button is released.

Voice Transmission

Transmit Power Output

Your radio can **Transmit** selectively at 1 or 25 watts of power. Cobra Electronics Corporation™ suggests you maintain the low power setting for short-range communications 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 1 watt.

High/Low Power Button

To toggle between the High and Low Power modes:

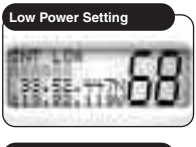
1. Press the **High/Low Power** button.
   The LCD will show which mode is in effect.

Some channels are restricted to use at a maximum of 1 watt. Your radio will automatically set the power to **Low Power** mode when you select those channels.

While using the U.S.A. channel map, if, in an emergency, you need to increase the output power on Channel 13 and Channel 67 for your signal to be heard, you can override the **Low Power** mode by pressing and holding the **High/ Low Power** button.

High/Low Power

Low Power Setting

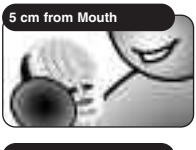


Transmit a Message

To transmit a message:

1. Check to see that your unit 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 cm from your mouth, press and hold the **Talk** button and speak into the microphone. Transmit will be indicated on the LCD.
4. Release the **Talk** button when you are finished speaking. Your unit 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.

5 cm from Mouth



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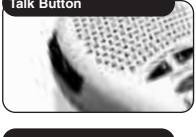
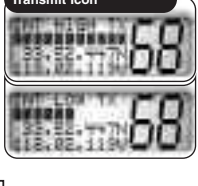


NOTE

If the **Talk** button is held down for five minutes, the radio will automatically cease transmitting to prevent unwanted signal generation. As soon as the **Talk** button is released, it can be pressed again to resume transmission.

Transmit Icon



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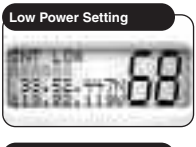

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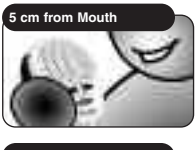

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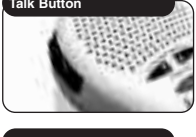

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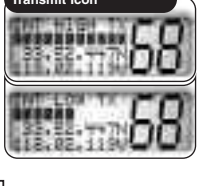

Advanced Operation

Dual-Watch

Dual-Watch gives you one button access to scan the two locations of most importance to you. Channel 16 will always be included as a scanned location. The remaining location will be the VHF channel in effect when you enter **Dual-Watch** mode.

NOTE
The radio must be squelched for dual-watch to function.
See page 33 for squelch procedure.

Standby Mode

Dual-Watch Button

To enter Dual-Watch mode:

1. In **Standby** mode, use the **Up/Down** buttons to go to the channel you want to add as the second location to be scanned.
2. Press the **Dual-Watch** button.

Dual-watch will be indicated on the LCD and the radio will scan between Channel 16 and the second dual-watch location you selected. A signal on any one of the two channels will stop the scan to allow you to listen to the traffic on the channel. The channel number will be displayed on the LCD.

To exit Dual-Watch mode:

1. Press the **Dual-Watch** button. The radio will return to **Standby** mode.

Dual-Watch Mode

During Dual-Watch (while receiving an incoming transmission), you can choose from the following:

a. Press the **Talk** button to remain on that dual-watch location and return to **Standby** mode.

b. Press the **Up/Down** buttons to resume scanning dual-watch locations.

If you do not press any buttons, your radio will automatically resume scanning dual-watch locations when the incoming transmission is complete.

During Dual-Watch (while not receiving a transmission):

a. Press the **Talk** button to communicate on the last dual-watch location scanned and return to **Standby** mode.

Advanced Operation

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DSC Set-Up

Digital selective calling — **DSC** — employs digital RF signals which tend to carry further and be less susceptible to distortion from noise and atmospheric conditions than analog ones. The result is greater range and more reliable message delivery per watt of output power.

But, that is not the only advantage of DSC equipped radios. Those radios are set up to interface with GPS and to automate many of the operations involved in sending and receiving messages. That results in more compact and accurate messages and less congestion of the airwaves.

The price of these benefits to the user is the time it takes to do the required set-up to make the DSC features work. A little time spent when your radio is new will pay dividends over its life.

This radio follows Class D DSC with a dedicated Channel 70 receiver.

These procedures use the **Settings** menu. Refer to page 35 for information on entering and exiting the **Settings** menu.

User MMSI Number

This nine digit number is similar to a telephone number in that it is a unique identifier for you and your vessel. DSC uses this number in every message it sends and receives. That is why your radio will not operate in the **DSC** mode until you enter your **MMSI Number**. You should enter it or have your dealer do so as soon as you receive it from one of the issuing agencies listed on page 9.

NOTE

Because it is important to correctly enter the MMSI number in the radio, the following procedure requires that the number be entered, then verified by entering it again. If the same number is entered both times, the system will accept it. If the two entries are different, an error message will appear with a prompt to try again.

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DSC Set-Up

If You Transfer Your Radio to a Different Vessel

Contact the MMSI issuing agency from which you obtained your number and change the information associated with your number to correspond to vessel in which it will be mounted.

User MMSI

User MMSI ID Entry

To view your MMSI number at any time:

1. Enter the **Settings** menu and scroll to USERMMSI with the **Up/Down** buttons.
2. Press the **Call/Set** button and the blinking cursor will appear at the first digit of your already entered number under USERMMSI ID ENTRY.
3. Press and hold the **Call/Set** button to return to the **Settings** menu.

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DSC Set-Up

Position Request Reply Type

The ability to send your position to another station is an added feature of DSC radios that have GPS attached. It is handy for rendezvous and rescue situations.

Your CobraMarine™ VHF radio allows you to choose whether to have the radio automatically respond to all **Position Requests** it receives or to alert you to a **Position Request** and allow you to choose whether to respond or not — manual reply.

Position Reply

Auto/Manual/Exit

To set the position request reply type:

1. Enter the **Settings** menu and scroll to POS RPLY (position reply) with the **Up/Down** buttons.
2. Press the **Call/Set** button and observe the current setting — AUTO or MANUAL.
3. Use the **Up/Down** buttons to change the setting.
4. Press the **Call/Set** button to select the setting.
5. Use the **Up/Down** buttons to scroll to EXIT.
6. Press the **Call/Set** button to return to the **Settings** menu.

Individual Directory

DSC calling allows you to call another vessel or station directly if you know its MMSI number. Your CobraMarine™ VHF radio allows you to store up to ten names and their associated MMSI numbers for quick access.

Individual Directory

Location 01

To enter or edit names and your MMSI numbers in the directory:

1. Enter the **Settings** menu and scroll to INDV DIR (individual directory) with the **Up/Down** buttons.
2. Press the **Call/Set** button to enter a memory location (1-10).
3. Use the **Up/Down** buttons to scroll through the memory locations to one you want to select.

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DSC Operation

Sending DSC calls is done from menus similar to the settings menu. Whereas entering the settings menu required a press and hold of the **Call/Set** button, the sending menus appear with a press of the **Call/Set** button or the **Distress** button.

All received DSC calls will sound one or another of the alarms to alert you to them. See pages 31 – 32 for descriptions of the different alarms. Pressing any button will turn **off** the alarm while maintaining the received call information on the LCD.

This radio follows Class D DSC with a dedicated Channel 70 receiver.

Sending Distress Calls

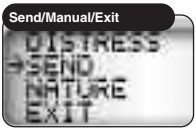
The ability to send and receive distress calls and their acknowledgements on Channel 70 can literally be a lifesaver for you or another mariner.

NOTE

The DSC call will:

- Sound the distress alarm at all receiving stations.
- Inform receiving stations of your identity (MMSI).
- Inform receiving stations of your position if you have a GPS device connected or you have manually entered your position.
- Optionally inform the receiving stations of the nature of the emergency.

  It will not provide the receiving stations with other distress information such as the nature of your problem, number of persons aboard, injuries, or the like. For that, you will have to communicate by voice on Channel 16 with the station that acknowledges your DSC distress call.



To begin sending a DSC distress call:

1. From **Standby** mode, lift the red door on the transceiver and press the **Distress** button under it. This will open the **Distress** menu with the arrow pointing to SEND. You will have three choices:
   - Send the distress call automatically with the position provided by a connected GPS, or with old or no position information if a GPS is not connected.
   - Manually enter your position, then send the distress call.
   - Abort the distress call process and return to **Standby** mode.

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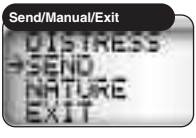

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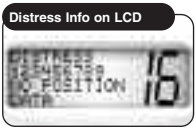
DSC Operation

Receiving Distress Calls

If your vessel is within range of a DSC **Distress** call, the radio will receive the call, sound the distress alarm and switch to Channel 16.

Distress Info on LCD

Distress Info on LCD



When a distress call is heard:

1. Press any button to turn **off** the alarm and return to **Standby** mode.
2. Read and write down the distress information on the LCD (there may or may not be position data shown), then determine whether you should answer the call.
3. Respond, if appropriate, by pressing and holding the **Talk** button to transmit on Channel 16.

NOTE

Your radio will automatically switch to Channel 16 upon receiving a DSC distress call.

Regarding Distress Relay Calls

Your radio cannot send **Distress Relay** calls. Only large ships and shore stations with specially equipped radios can send these calls.

Receiving Distress Relay Calls

Your radio will respond to a received **Distress Relay** call in the same way as it will to a distress call.

DSC Operation

Receiving Distress Calls

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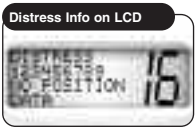

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DSC Operation

Receiving an All Ships Call

All Ships calls sent by stations within range of your radio will sound the distress alarm on your radio and switch your radio to Channel 16.

All Ships Call

When an all ships call is heard:

1. Press any button to turn **off** the alarm and return to **Standby** mode.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call in case you will want to respond.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming all ships call.

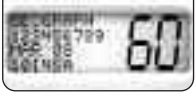
Sending a Geographical Call

Your radio cannot send **Geographical** calls. Only large ships and shore stations with specially equipped radios can send these calls.

Receiving a Geographical Call

Geographical calls are sent by specially equipped radios to all stations in a particular geographical area to alert only those stations of the call and not stations in unaffected areas. If you are in an area to which a **Geographical** call is made, it will sound the geographical alarm on your radio and switch your radio to the channel chosen by the sending station.

Geographical Call



When a geographical call is heard:

1. Press any button to turn **off** the alarm.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call in case you will want to respond.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming geographical call.
4. Press one of the following three buttons to switch from geographical call receive to **Standby** mode: **Call/Set** button, **Channel 16** button, or **Talk** button.

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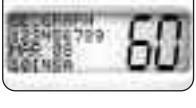

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3. Listen to the voice message sent on the channel your radio was switched to by the incoming geographical call.
4. Press one of the following three buttons to switch from geographical call receive to **Standby** mode: **Call/Set** button, **Channel 16** button, or **Talk** button.

DSC Operation

Caller Identified

Receiving an Individual Call

When another station makes an **Individual** call to your radio, the individual alarm will sound, the caller will be identified on the LCD and your radio will be switched to the channel selected by the caller. Press any button to turn **off** the alarm.

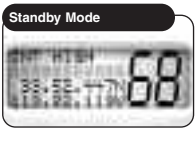
To receive an individual call:

1. Press the **Talk** button and greet the caller — almost as if you were answering the telephone.

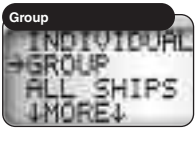
Sending a Group Call

Sending a **Group** call is very similar to sending an individual call, except that the group MMSI is used and the resend and DSC responses do not apply.

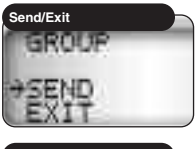
Standby Mode



Group



Send/Exit



Group Waiting

To send a group call:

1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Call/Set** button to enter the **Call Send** menu.
3. Use the **Up/Down** buttons to scroll to GROUP.
4. Press the **Call/Set** button to move to the send or exit menu.
5. Use the **Up/Down** buttons to select SEND or EXIT.
6. Press the **Call/Set** button to send the message or return to the **Call Send** menu if EXIT was chosen.

All radios will be switched to the channel selected in step 1. Press and hold the **Talk** button to send your voice message to everyone in the group.

Anyone in the group can now also transmit on that channel.

DSC Operation

Caller Identified

Receiving an Individual Call

When another station makes an **Individual** call to your radio, the individual alarm will sound, the caller will be identified on the LCD and your radio will be switched to the channel selected by the caller. Press any button to turn **off** the alarm.

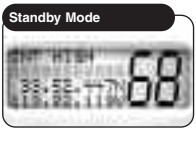
To receive an individual call:

1. Press the **Talk** button and greet the caller — almost as if you were answering the telephone.

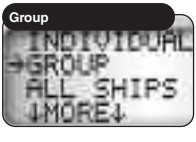
Sending a Group Call

Sending a **Group** call is very similar to sending an individual call, except that the group MMSI is used and the resend and DSC responses do not apply.

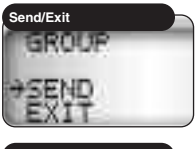
Standby Mode



Group



Send/Exit



Group Waiting

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5. Use the **Up/Down** buttons to select SEND or EXIT.
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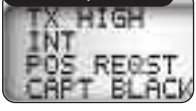
Anyone in the group can now also transmit on that channel.

DSC Operation

Position Request



6. Press the **Call/Set** button.

Your radio will send the position request and there will be one of three possible responses:

- You will receive the position.
- You will receive a no position data response, meaning the station you queried is not connected to a GPS device and cannot send its position.
- You will receive a no reply response, meaning the operator of that station has chosen not to reply to your request.

Choose one of the following:

Receiving a Position

a. If you receive a position:

The requested position with the station name and MMSI will show on your screen.

1) Press the **Call/Set** button to return to **Standby** mode after you have noted the station's position.

No Position Data

b. If the station you called cannot send its position:

NO POS DATA (no position data) will show on your screen.

1) Press the **Call/Set** button to return to the **Individual Directory** menu.

2) Use the **Up/Down** buttons to scroll to EXIT.

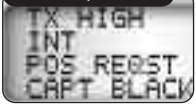
3) Press the **Call/Set** button to return to the **Call Send** menu.

4) Use the **Up/Down** buttons to scroll to EXIT.

5) Press the **Call/Set** button to return to **Standby** mode.

DSC Operation

Position Request



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2) Use the **Up/Down** buttons to scroll to EXIT.

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4) Use the **Up/Down** buttons to scroll to EXIT.

5) Press the **Call/Set** button to return to **Standby** mode.

DSC Operation

Receiving a Position Request

When you went through the DSC set-up process, you set a position request reply type. (See page 48 to change your setting.) Depending on the setting you chose, when a **Position Request** message is received, your radio will enter either:

- The **Auto Reply** mode.
- The **Manual Reply** mode.

When the radio is in Auto Reply mode:

A position request will sound the position request alarm and show the name of the requesting station on the LCD. Your radio will automatically respond. It will send your position, if you have a GPS connected to your radio, or NO POS DATA (no position data), if you do not have a GPS device connected.

1. Press any button to silence the alarm and exit the display.

DSC Operation

Receiving a Position Request

When you went through the DSC set-up process, you set a position request reply type. (See page 48 to change your setting.) Depending on the setting you chose, when a **Position Request** message is received, your radio will enter either:

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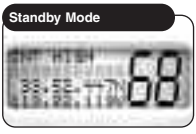
DSC Operation

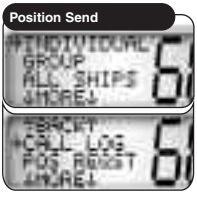
Sending a Position Send

Position Send uses your connected GPS in similar fashion to the position request function, except that you initiate the activity to let another station know where you are.

Standby Mode



Position Send



Individual Directory

Transmit Position

Send/Exit

To send a position send message:

1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Call/Set** button to enter the **Call Send** menu.
3. Use the **Up/Down** buttons to scroll to POS SEND (position send).
4. Press the **Call/Set** button to enter the individual directory.
5. Use the **Up/Down** buttons to select the station to which you want to send your position.
6. Press the **Call/Set** button to send your position.

After your position is sent, the LCD will show POS SEND (position send). You will have two choices.

- Resend your position to the same station.
- Exit from **Position Send** mode.

a. To resend your position:

1) Use the **Up/Down** buttons to select SEND.

2) Press the **Call/Set** button to resend your position.

b. To exit from the position send mode:

1) Use the **Up/Down** buttons to select EXIT.

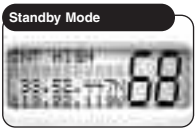
2) Press the **Call/Set** button to return to the **Call Send** menu.

DSC Operation

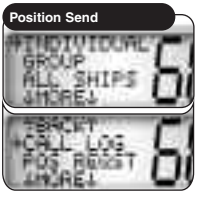
Sending a Position Send

Position Send uses your connected GPS in similar fashion to the position request function, except that you initiate the activity to let another station know where you are.

Standby Mode



Position Send



Individual Directory

Transmit Position

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To send a position send message:

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2) Press the **Call/Set** button to resend your position.

b. To exit from the position send mode:

1) Use the **Up/Down** buttons to select EXIT.

2) Press the **Call/Set** button to return to the **Call Send** menu.

Maintenance

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

- Keep the radio clean by wiping with a soft cloth and mild detergent. Rinse with fresh water. 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, rinse it in fresh water at least once a day to prevent build-up of salt deposits, which could interfere with button operation.

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Specifications

General	
Number of Channels	All International, Canadian and U.S.A.*
DSC	Class D
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	13.8 VDC
Current Drain: Stand-by Receive Transmit	 200 mA 300 mA 5A @ High power 1A @ Low
Temperature Range	-20˚ C to 50˚ C
Unit Dimensions	15.9 cm x 5.7 cm x 18 cm
Unit Weight	1100 g
Receiver	
Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 20 dB Quieting 12 dB Sinad	 0.3 uV 0.2 uV
Adjacent Channel Selectivity	-60 dB
Intermodulation and Rejection	-60 dB
Spurious and Image Rejection	-60 dB
AF Output	4 Watts @ 8 Ohms
Transmitter	
Frequency Range: TX	156.025 to 157.425 MHz
RF Output Power	1 and 25 Watts
Spurious Emissions	-60 dB High -55 dB Low
Microphone Type	Electret
Frequency Stability	+/-10 ppm
FM Hum and Noise	40 dB

* Programmable Recreation Channels available.
Please contact your local dealer for details.

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Spurious Emissions	-60 dB High -55 dB Low
Microphone Type	Electret
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The Cobra Electronics Corporation™ line of quality products includes:

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microTALK® Radios

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Safety Alert® Traffic Warning Systems

Handheld GPS Receivers

Mobile GPS Navigation Systems

HighGear® Accessories

CobraMarine™ VHF Radios

Power Inverters

Accessories

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