Cobra®

UI/Functional Specification

VHF Marine Radio

MRHH150FLT USA and EU Series

5-9-2018   LCD display requires update to support power level settings and add one more bar to RX/TX bar graph

STARTUP DESCRIPTIONS

- When the unit is first powered ON, a 500 Hz power up tone will sound for 100 ms unless KEY TONES are OFF.
- The LCD will display all Icons except ATIS for 2 seconds on USA models.
- The LCD will display all Icons including ATIS for 2 seconds on EU models.
- All buttons are inoperative during this 2 second period.
- After the 2 second period the display will turn ON only the appropriate Icons depending on last used condition.

Default startup settings USA:

- Marine Channel 16
- Power level - High
- Key tones are ON
- ROG Beep is OFF
- Channel map set to "U" for USA channels
- WX Alert is OFF
- WX channel "01" (WX mode)
- Clear all memory channels to "- -"
- DW memory channel 01 = VHF channel 16, memory channel
- 02 = VHF channel 09.
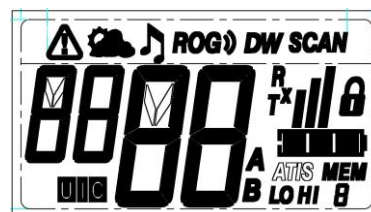
Default startup settings EU:

- Marine Channel 16
- Power level - High
- Key tones are ON
- ROG Beep is OFF
- Channel map set to "I" for INT channels
- Clear all memory channels to "- -"
- DW memory channel 01 = VHF channel 16, memory channel

Factory Default reset key press: - DW / Scan key and MEM/ Esc key together.
PC reprogramming mode key press: - DW / Scan key and Hi-Lo / WX key together.
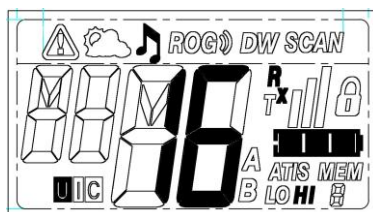

Default display   Startup ICONS

MARINE STANDBY MODE

Definitions: RX: unit is in receive mode and tuned to the displayed channel.
Bar graph meter will display received signal level.
Turn ON the following Icons: Rx, other depending
on last used state.

TX Mode: when PTT is pushed unit will transmit
on current channel. Turn off RX, Turn on TX. Bar graph
meter will indicate power level based on the following
description:
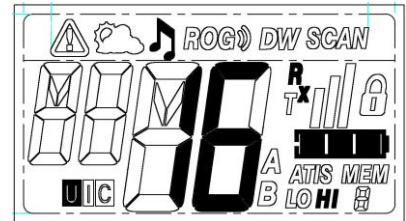
> High power - all bars ON (4 total)
> Med power - two bars ON
> Low power – one bar ON

Standby Display

TX time out timer is 5 minutes, at the end of 5 minutes turn off TX and
sound two beeps.

Beep tones: 1beep used to confirm any key press EXCEPT the PTT key
2 beeps used to confirm entry
3 beeps used to indicate error.
Beep tones are 500Hz at 100 ms duration with 20ms spacing between tones.
If Key tones are set to OFF then beep tones are also OFF.

Power save: If no key's pressed or signal detected for 10 seconds then go to
power save mode.

.   **If WX Alert mode is enabled (USA models only):**

If WX Alert is enabled: on the selected WX channel, the radio will periodically check the
WX channel for the 1050Hz tone.

When the WX alert conditions are met, the radio will switch to WX mode on the alert channel
and sound a 1050 Hz alert tone and flash the WX Alert Icon.

MARINE STANDBY MODE – Continue

KEY FUNCTIONS FOR MARINE STANDBY MODE:

1) Power Button
 Push and hold for two seconds to turn unit ON.
 Push and hold for two seconds to turn unit OFF.

2) Squelch Control

 Momentarily Press and hold Squelch key for < 5 seconds to open Squelch. Releasing the squelch key closes squelch.

 Press and hold Squelch key > 5 seconds to hold open Squelch. Releasing squelch button after 5 seconds – squelch remains open. Momentarily press the Squelch key again to close the Squelch.

3) Channel UP/DN Key
 Press and release UP key; channel # increase.
 Press and hold UP key >0.5 seconds; channels increase in rapid sequence every
 250ms.
 Press and release DN key; channel # decrease.
 Press and hold DN key >0.5 seconds; channels decrease in rapid sequence every
 250ms.

4) PTT Key
 Press and hold to transmit; release to stop transmitting
 PTT key should only activate the transmitter on valid Transmit US, Canada, and International channels only. If PTT is pressed on a Receive only channel, unit will sound 3 error tones.

5) Back light/Lock Key
 Press and release to turn on backlight of display
 Back light should remain on for 10 seconds if no other keys are pressed
 Press and release again to turn off backlight of display

 Press and hold key for 2 seconds to activate key lock feature, lock icon on display
 All front panel keys are locked.

 PTT and Backlight/lock keys are the only keys active in lock mode
 Press and hold Back light/Lock key again to unlock keys

6) 16 Key
 Press and release; instant channel 16
 Press and release again to return to last used standby channel

7) H/M/L and WX Key
 Press and release H / M / L and WX key to toggle TX output power levels.
 Press and hold >2 s for WX mode.

MARINE STANDBY MODE – Continue

KEY FUNCTIONS FOR MARINE STANDBY MODE:

8) Dual Watch / Scan Key - DW operation
Press and release DW / Scan; unit will activate Dual Watch mode. "DW" will appear on display as channels are scanned.

Dual Watch setup:

Select a desired DW channel.
Press and release the DW/Scan button to start DW scan between selected channel and channel 16.

During Dual watch scan mode:
PTT key, exit Dual Watch scan and enter TX mode on selected DW channel from standby mode.
Backlight Lock, operates backlight or key pad lock accordingly.
Channel UP/Down, does nothing during DW scan.
DW/Scan key, Press and release DW/Scan key to exit DW scan and return to standby mode on selected DW channel.
MEM/ESC key, exit DW scan mode and return to standby mode on selected DW Channel.
Setup/Enter key, exit DW scan mode and return to standby mode on selected DW Channel.
WX – H /M/ L key, short press < 5 seconds – change power levels, long press > 2 seconds exit DW scan mode and go to WX. When user returns to VHF Marine mode the displayed channel will be the selected DW channel.
16 key, exit DW scan mode and go to channel 16, press a third time go to selected DW channel.
Activating DW when initially on Ch16 will sound 3 error tones.

9) Enter / Setup Key

Press and hold to enter setup menu.
Press and release in setup menu to save changes and advance to next setup item.

MARINE STANDBY MODE – Continue

10) MEM / ESC Key
     MEM KEY:
Press and release to enter Memory mode. MEM and memory channel icons turns on.
First memory location is "0", last is "9"
Push and Hold MEM key for 2 seconds to enter memory channel program mode.
Memory channel number blinks.
Channel up/down keys change memory channel number. Push and hold to scroll.
Push and release MEM key to change to receiver channel number (the two main LCD digits).
Main channel digits blink and channel up/down keys change channel number.
Setting the Main channel number to zero clears this memory location.
Push and release MEM key goes back to memory channel number (blinking).
     ESC KEY:
Functions as ESC key to cancel and exit during setup mode functions unless
specified in other function calls..
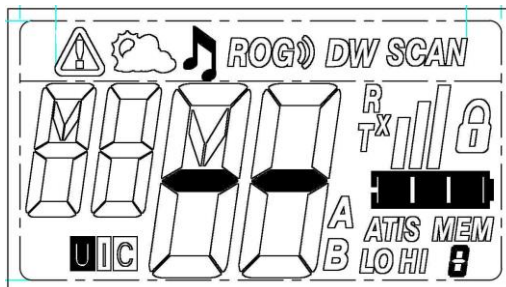
Empty memory channel 0

11) Dual Watch / Scan Key – Scan operation

Push and hold for two seconds to scan all channels.
Direction of scan by default is from Lower to higher channel. User can change scan direction with
CH UP/DOWN keys.

When a signal is received; unit will pause for 10 seconds before resuming Scan.
Unit will cease scanning when PTT is activated.

In MEM mode, push and release to scan all memory channels.
If only one memory channel is stored, then sound 3 error beeps – no scanning.

While in scan mode, all other keys function as follows:
     PTT – exit SCAN and return to standby on last active SCAN channel or
     last used standby channel if no activity during SCAN.

     Backlight / lock - push and hold to lock/ push and release to turn on
     Back light for 10 seconds.

     16 key – push and release exit SCAN and go to channel 16, push again go
     to last active SCAN channel or last used standby channel if no activity during SCAN.

MARINE STANDBY MODE – Continue

11) Scan Key

> **H / M /L and WX** - push and release to change power level, no interruption of scan. Push and hold, exit SCAN and enter WX mode. When returning to VHF mode, display last active scanned channel or last used standby channel if no activity during SCAN mode.

> **Setup / Enter** - push and release, exit scan and return to standby on last active scanned channel or last used standby channel if no activity during SCAN. Push and hold, exit scan and enter setup. When returning to VHF standby, display last used active scanned channel or last used standby channel if no activity during SCAN.

> **Dual Watch** - push and release, exit scan and start Dual Watch. Push and hold, exit scan enter Dual Watch program mode.

> **MEM / ESC** - push and release or hold, exit scan and enter MEM mode.
> When returning to VHF, display last active scanned channel or last used standby channel if no activity during SCAN.

12) Volume

Volume (left of key panel center) –

- Push and release to decrement volume level one step.
- Push and hold 0.5 seconds to rapid advance volume level until minimum step.
- Sound beep tone once when volume button is pushed.
- Sound beep tone once at minimum step.
- Beep tone sound level is controlled by Volume level.

Volume (right of key panel center) –

- Push and release to increment volume level one step.
- Push and hold 0.5 seconds to rapid advance volume level until minimum step.
- Sound beep tone once when volume button is pushed.
- Sound beep tone once at maximum step.
- Beep tone sound level is controlled by Volume level.

Volume level shall have a total of 15 steps with "0" = to the minimum and "15 = the maximum level.

While changing the volume level the two largest channels numbers shall momentarily display the current volume level.

The volume level numeric display shall remain for 1 second after any Volume button release before returning to display the current Marine channel.

WX STANDBY MODE

From WX standby:
Unit is in receive mode and tuned to the last used WX channel The cloud Icon is turned ON
WX channel number is displayed in the main channel digits (1st & 2nd digit locations)
Bar graph display shows received signal level
1.5uV of received signal produces full scale on bar graph.
Use channel UP or DOWN keys to change WX channel
When channel 10 is selected, next UP key press wraps around to channel 01
When channel 01 is selected, next Down key press wraps around to channel 10
Default WX channel is 01
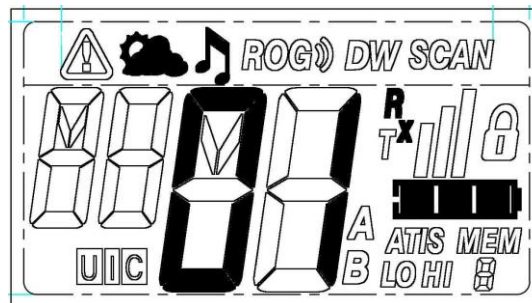
Default WX display

If WX Alert is enabled:

1) If WX Alert is enabled, on the selected WX channel, the unit will periodically check the WX channel for the 1050Hz WX Alert tone.

2) When the 1050 Hz WX Alert tone is detected, the radio will sound a 1050 Hz alert tone, and flash the WX Alert Icon.

KEY FUNCTIONS FOR WX STANDBY MODE (USA model only):

1) **Power**
Push and hold for two seconds to turn unit ON.
Push and hold for two seconds to turn unit OFF.

2) **Volume**
Functions same as 12 on page 8.

3) **Squelch Control**
Press and hold the Squelch key to open the Squelch.

4) **Channel UP/DN Key**
Press and release UP key; channel # increase.
Press and hold UP key >0.5 seconds; channels increase in rapid sequence every 250ms.

Press and release DN key; channel # decrease.
Press and hold DN key >0.5 seconds; channels decrease in rapid sequence every 250ms.

5) **WX STANDBY MODE - Continue**

6) **PTT Key**
Any press results in 3 tone error beep

7) **Back light/Lock Key**
Press and release to turn on backlight of display
Back light should remain on for 10 seconds if no other keys are pressed
Press and release again to turn off backlight of display
Press and hold key for 2 seconds to activate key lock feature, lock icon on display
All front panel keys are locked.
PTT and Back light keys are the only keys active in lock mode
Press and hold Back light/Lock key again to unlock keys

8) **16 Key**
Press and release; instant channel 16
Press and release again to return to last used WX standby channel

9) **WX / Hi / Med / Lo Key**
Press and release return to VHF standby mode.
Press and hold return to VHF standby mode.

10) **DW / Scan Key**
Press and release sounds 3 tone error beep.

11) **Enter / Setup Key**

Press and hold to enter SETUP MODE
Functions as Enter key in setup menus.

12) **Mem / ESC Key**
Memory Function:

Press and release to enter Memory mode. MEM and memory channel icons turn on.
Push and Hold MEM key for 2 seconds to enter memory channel program mode.
Memory channel number blinks. Channel up/dwn keys change memory channel number.
Push and release MEM key to change receiver channel number (the two main LCD digits).
Main channel digits blink and channel up/dwn keys change channel number.
Setting the Main channel number clears this memory location.
Push and release MEM key goes back to memory channel number (blinking).

ESC Function:
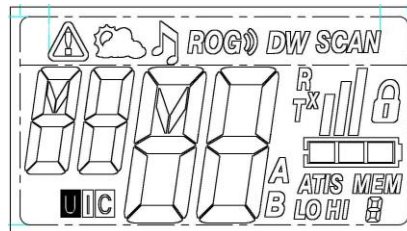Functions as ESC key to navigate backwards during Mode functions.

MARINE SETUP MODE
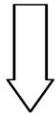
From Marine Standby:

Push and hold **Setup** key for 3 seconds.   (Enters Setup Mode)

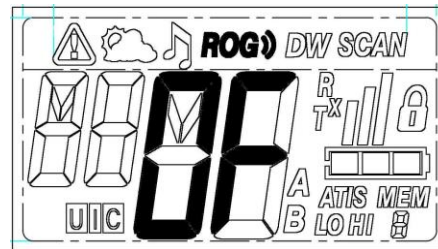LCD is cleared of all Icons except those relevant to each setup step.

UIC CHANNEL MAP SELECT

Turn ON "U", "I", and "C". Flash current channel Map.
Use channel UP or DOWN keys to change setting.
Push **Setup** Key to save setting and move to the next setup item.

ROG BEEP ON / OFF

"ROG))" and "ON" or "OFF" are flashing
("OFF" is the default setting).
Use channel UP or DOWN keys to change setting.
Note: This is a global setting (all radio modes).

Push **Setup** Key to save setting and move to the next setup item.

MARINE SETUP MODE - (continued)

From Marine Standby:

Push and hold **Setup** key for 3 seconds.   (Enters Setup Mode)

LCD is cleared of all Icons except those relevant to each setup step.

KEY TONE ON / OFF

Keytone symbol "♫" and "ON" or "OFF" are flashing.
("ON" is the default setting)
Use channel UP or DOWN keys to change setting.
Note: This is a global setting (all radio modes).

Push **Setup** Key to save setting and move to the next setup item.
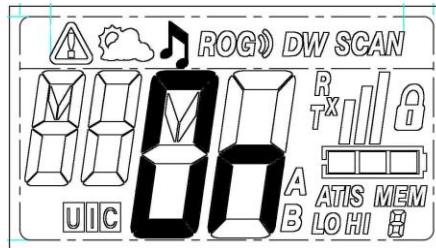
Marine Setup notes:

While in setup mode, if no action from user for 15 seconds, then SAVE and EXIT to standby.
When entering setup mode, the last saved value should be displayed.
Default settings are restored and displayed after a factory reset.
No signal reception in setup mode.

Other key definitions during Marine setup mode:

1) PTT - save settings and exit to Marine standby mode
2) DW- save settings, exit to Marine standby mode and start Dual Watch scan.
3) MEM/ESC - save settings, exit to Marine standby.
4) WX/HI/LO – Press and release or Press and hold to save settings, exit to Marine standby mode.
5) SCAN - save settings, exit to Marine standby mode.
6) 16 - save settings, exit to channel 16.
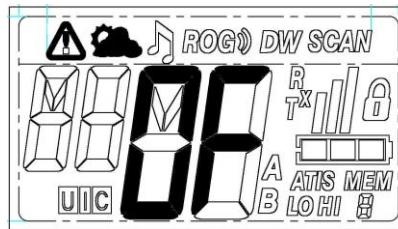7) LIGHT/LOCK - turn ON/OFF back light - 10 seconds ON time.

WX SETUP MODE (USA model only)

From WX Standby:

Push and hold **Setup** key for 3 seconds.   (Enters Setup Mode)

LCD is cleared of all Icons except those relevant to each setup step.

WX ALERT ON / OFF

WX ALERT symbol and "ON" or "OFF" are flashing.
("OFF" is the default setting).
If WX ALERT is set to "ON", turn ON WX ALERT Icon.
Use Channel UP or DOWN keys to change setting.
Push **Setup** Key to save setting and move to the next setup item.
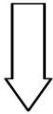
WX ALERT FUNCTION NOTES:

From WX Standby:

1) Once WX Alert is enabled, and on the selected WX channel, the unit will continuously check the WX channel for the 1050Hz WX Alert tone.

2) When the 1050 Hz WX Alert tone is detected, the radio will sound a 1050 Hz alert tone, and flash the WX Alert Icon.

WX SETUP MODE

From WX Standby:

WX AUTO SCAN ON / OFF

**Default OFF -
alternate SCAN
and OFF in LCD**

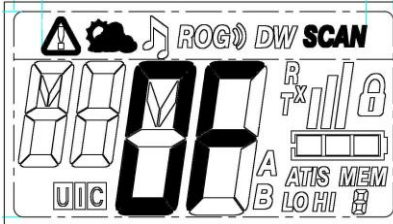WX Icon is flashing. "SCAN" and "ON" or "OFF" are flashing alternately.
("OFF" is the default setting).
When WX auto search is set to "ON", Scanning starts under the following
conditions:

1) Unit is in Marine Standby mode.
2) Unit is in Power Saver mode.
3) Once every 5 seconds the unit will wake up and check all 10 weather
   channels for the 1050Hz WX Alert tone. (The WX Alert tone is sent for
   8 seconds.)
4) If the WX Alert tone is detected, the unit will switch to the WX mode
   on the WX Alert channel, sound a 1050 Hz tone, and flash the WX
   Alert Icon..
5) The unit will remain on that WX channel until the user switches back to
   the Marine Standby mode.

Use channel UP or DOWN to change setting.
Push **Setup** Key to save setting and move to the next setup item.
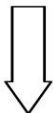
WX STANDBY

WX SETUP MODE – Continue

WX setup mode notes:

While in setup mode, if no action from user for 15 seconds then SAVE and EXIT to standby.
When entering setup mode, the last saved value should be displayed.
Default settings are restored and displayed after a factory reset.
No signal reception in setup mode.

Other key definitions during Marine setup mode:

1) PTT - save settings and exit to WX standby mode
2) DW- save settings, exit to WX standby mode.
3) MEM / ESC - save settings, backup one level at time ultimately ending in WX standby.
4) WX / HI / LO - save settings, exit to WX standby mode.
5) SCAN - save settings, exit to WX standby mode.
6) 16 - save settings, exit to channel 16.
7) LIGHT / LOCK - turn ON / OFF back light - 10 seconds ON time.

ATIS (EU model only)

ATIS is entered and reset through the PC programming software utility for use by dealerships only.

Revision History

Issue: Preliminary, 16 April, 2018; C. deWaal
- New Issue

Issue: Preliminary R2, 8 May, 2018; C. deWaal
- Added industrial design.
- Added volume control.
- Included references to USA and EU models were needed.
- Added comment regarding ATIS.

MRHH150FLT Important Product Information

Safety Training Information

This CobraMarine® radio has been tested and found to comply with the FCC RF exposure limits for use by the "General Population" and Industry Canada RF exposure limits for use by the "General Public." This CobraMarine VHF radio also complies with the following guidelines and standards regarding RF energy and electromagnetic energy levels as well as evaluation of those levels for human exposure:

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

- American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

- American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields — RF and Microwave.

- Industry Canada RSS-102-Radio Frequency (RF Exposure Compliance of Radiocommunication Apparatus (All Frequency bands).
  Conformité d'exposition de la fréquence du Canada RSS-102-Radio d'industrie (rf) de l'appareillage de communication par radio (toutes les bandes de fréquence).

Regulatory Compliance Info:

This device complies with part 15 of the FCC Rules, and Industry Canada license-exempt RSS standards. Operation is subject to the following two 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.

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

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

Station License

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

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

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

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

Canadian Ship Station License
You need a Radio Operator's Certificate if your vessel is operated in Canadian waters. Radio Operator training and certification is available from the Canadian Power Squadron. Visit their website at http://www.cps-ecp.ca/

UK requires a ships radio license and a marine radio operators certificate before transmitting equipment can be used aboard a vessel. Other European countries have specific requirements of their own.
For detailed information and applications, contact the Royal Mail Licensing Centre in the UK. In other countries contact the local equivalent of the UK Royal Mail or the national telecommunications authority.

• This CobraMarine radio incorporates a VHF FM transceiver designed for use in the frequency range of 156.025 to 163.275 MHz. It requires 6 volts DC and has a switchable RF output power of 0.5, 1 or 3 watts.

WARNING
The device complies with RF specifications when the device is used at 25mm from your front face and 0mm from your body.

Maximum SAR Value:

0.452 W/Kg (50% duty to face 10g)

0.795 Ww/Kg (50% duty to body 10g)

0.413 W/Kg (50% duty to face 1g)

0.975 W/Kg (50% duty to body 1g)

WARNINGS
Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy, **DO NOT** touch the antenna when transmitting.

KEEP the radio at least two inches (5cm) away from yourself and others when transmitting.

DO NOT operate with more than a duty cycle of 5% transmit, 5% receive and 90% standby. The radio is transmitting when the Talk button is pressed and the transmit information shows on the LCD screen.

ALWAYS use only Cobra authorized accessories.

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

NEVER place the transceiver or microphone/speaker where they might interfere with operation of your vessel or cause injury.

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

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user' s authority to operate the equipment

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) l'appareil ne doit pas produire de brouillage;
2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

UL2054 WARNINGS

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

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

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

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

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

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

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

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

This radio is supplied with NiMH (Nickel-Metal Hydride) rechargeable batteries.

• Use only the Cobra power cord to recharge NiMH batteries in the radio.

• Do not short circuit the batteries.

• When replacing the batteries, dispose of the old batteries properly. The NiMH batteries may explode if disposed of in a fire.

• Do not attempt to operate your radio while recharging the batteries.

For Radios with Detachable Antennas

Industry Canada Antenna Notice
Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Avis d'antenne du Canada d'industrie
En vertu de la réglementation de l'industrie du Canada, cet émetteur de radio ne peut fonctionner à l'aide d'une antenne d'un type et un maximum (ou moins) Gain approuvé pour l'émetteur par Industrie Canada. Pour réduire le risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisis afin que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour une communication réussie.

Sea Tow Automated Radio Check (ARC) System
Please try the Sea Tow Automated Radio Check service. Areas where the safety check service is available include the East Coast, Gulf of Mexico, and Southern California, as well as in select inland regions. The first and only boating safety program of its kind, the Sea Tow Automated Radio Check service is fully automated and allows 24 hour a day automatic responses to radio check calls. Conducting a radio check through the Sea Tow Automated Radio Check service couldn't be simpler. All boaters need to do is tune their VHF radios to Channel 24, 25, 26, 27 or 28, depending on the region, key the mic, and ask for a radio check. The Automated Radio Check system responds to each radio check with an automated reply, and also replays to the boater's original radio transmission, allowing him or her to assess the strength of the signal and confirm the VHF radio is in good working order. To find the Sea Tow Automated Radio Check service channel in an area, owners should visit http://www.seatow.com/arc. The web page links to an instructional video demonstrating how to use the service step by step.

Declaration of Conformity

EN (English)
Hereby, Cobra Electronics Europe, Ltd. declares that the radio equipment type VHF Marine Radio is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address:
http://www.snooperneo.co.uk/DeviceDocs.cfm

ES (Spanish)
Por la presente, Cobra Electronics Europe, Ltd. declara que el tipo de equipo radioeléctrico VHF Marine Radio es conforme con la Directiva 2014/53/UE.
El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente:
http://www.snooperneo.co.uk/DeviceDocs.cfm

DA (Danish)
Hermed erklærer Cobra Electronics Europe, Ltd., at radioudstyrstypen VHF Marine Radio er i overensstemmelse med direktiv 2014/53/EU.
EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse:
http://www.snooperneo.co.uk/DeviceDocs.cfm

DE (German)
Hiermit erklärt Cobra Electronics Europe, Ltd., dass der Funkanlagentyp VHF Marine Radio der Richtlinie 2014/53/EU entspricht.
Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar:
http://www.snooperneo.co.uk/DeviceDocs.cfm

BG (Bulgarian)
С настоящото Cobra Electronics Europe, Ltd. декларира, че този тип радиосъоръжение VHF Marine Radio е в съответствие с Директива 2014/53/ЕС.
Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес:
http://www.snooperneo.co.uk/DeviceDocs.cfm

CS (Czech)
Tímto Cobra Electronics Europe, Ltd. prohlašuje, že typ rádiového zařízení VHF Marine Radio je v souladu se směrnicí 2014/53/EU.
Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese:
http://www.snooperneo.co.uk/DeviceDocs.cfm

ET (Estonian)
Käesolevaga deklareerib Cobra Electronics Europe, Ltd., et käesolev raadioseadme tüüp VHF Marine Radio vastab direktiivi 2014/53/EL nõuetele.
ELi vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil:
http://www.snooperneo.co.uk/DeviceDocs.cfm

EL (Greek)
Με την παρούσα ο/η Cobra Electronics Europe, Ltd., δηλώνει ότι ο ραδιοεξοπλισμός VHF Marine Radio πληροί την οδηγία 2014/53/ΕΕ.
Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο:
http://www.snooperneo.co.uk/DeviceDocs.cfm

FR (French)
Le soussigné, Cobra Electronics Europe, Ltd., déclare que l'équipement radioélectrique du type VHF Marine Radio est conforme à la directive 2014/53/UE.
Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante:
http://www.snooperneo.co.uk/DeviceDocs.cfm

HR (Croatian)
Cobra Electronics Europe, Ltd. ovime izjavljuje da je radijska oprema tipa VHF Marine Radio u skladu s Direktivom 2014/53/EU.
Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi:
http://www.snooperneo.co.uk/DeviceDocs.cfm

IT (Italian)
Il fabbricante, Cobra Electronics Europe, Ltd., dichiara che il tipo di apparecchiatura radio VHF Marine Radio è conforme alla direttiva 2014/53/UE.
Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet:
http://www.snooperneo.co.uk/DeviceDocs.cfm

LV (Latvian)
Ar šo Cobra Electronics Europe, Ltd. deklarē, ka radioiekārta VHF Marine Radio atbilst Direktīvai 2014/53/ES.
Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē:
http://www.snooperneo.co.uk/DeviceDocs.cfm

LT (Lithuanian)
Aš, Cobra Electronics Europe, Ltd., patvirtinu, kad radijo įrenginių tipas VHF Marine Radio atitinka Direktyvą 2014/53/ES.
Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu:
http://www.snooperneo.co.uk/DeviceDocs.cfm

HU (Hungarian)
Cobra Electronics Europe, Ltd. igazolja, hogy a VHF Marine Radio típusú rádióberendezés megfelel a 2014/53/EU irányelvnek.
Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen:
http://www.snooperneo.co.uk/DeviceDocs.cfm

MT (Maltese)
B'dan, Cobra Electronics Europe, Ltd., niddikjara li dan it-tip ta' tagħmir tar-radju VHF Marine Radio huwa konformi mad-Direttiva 2014/53/UE.
It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej:
http://www.snooperneo.co.uk/DeviceDocs.cfm

NL (Dutch)
Hierbij verklaar ik, Cobra Electronics Europe, Ltd., dat het type radioapparatuur VHF Marine Radio conform is met Richtlijn 2014/53/EU.
De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres:
http://www.snooperneo.co.uk/DeviceDocs.cfm

PL (Polish)
Cobra Electronics Europe, Ltd. niniejszym oświadcza, że typ urządzenia radiowego VHF Marine Radio jest zgodny z dyrektywą 2014/53/UE.
Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym:
http://www.snooperneo.co.uk/DeviceDocs.cfm

PT (Portuguese)
O(a) abaixo assinado(a) Cobra Electronics Europe, Ltd. declara que o presente tipo de equipamento de rádio VHF Marine Radio está em conformidade com a Diretiva 2014/53/UE.
O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet:
http://www.snooperneo.co.uk/DeviceDocs.cfm

RO (Romanian)
Prin prezenta, Cobra Electronics Europe, Ltd. declară că tipul de echipamente radio VHF Marine Radio este în conformitate cu Directiva 2014/53/UE.
Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet:
http://www.snooperneo.co.uk/DeviceDocs.cfm

SK (Slovak)
Cobra Electronics Europe, Ltd. týmto vyhlasuje, že rádiové zariadenie typu VHF Marine Radio je v súlade so smernicou 2014/53/EÚ.
Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese:
http://www.snooperneo.co.uk/DeviceDocs.cfm

SL (Slovenian)
Cobra Electronics Europe, Ltd. potrjuje, da je tip radijske opreme VHF Marine Radio skladen z Direktivo 2014/53/EU.
Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu:
http://www.snooperneo.co.uk/DeviceDocs.cfm

FI (Finnish)
Cobra Electronics Europe, Ltd. vakuuttaa, että radiolaitetyyppi VHF Marine Radio on direktiivin 2014/53/EU mukainen.
EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa:
http://www.snooperneo.co.uk/DeviceDocs.cfm

SV (Swedish)
Härmed försäkrar Cobra Electronics Europe, Ltd. att denna typ av radioutrustning VHF Marine Radio överensstämmer med direktiv 2014/53/EU.
Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress:
http://www.snooperneo.co.uk/DeviceDocs.cfm

Specifications (Typical)

General	
Number of Channels	All U.S., Canadian, International and NOAA Weather Channels
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	6.0 VDC
Battery Life: 5% TX, 5% RX, 90% Standby	NiMH: 9.4 hours @ 3 watts 20 hours @ 0.5 watts 12 hours @ 1 watt Alkaline: 26 hours @ 3 watts 33 hours @ 1 watt
Current Drain: Standby Receive (Rx) Transmit (Tx)	45 mA 140 mA 1.1 A @ High Power, 450 mA @ Low Power
Operating Temperature Range	-20˚C to 50˚C
Radio Dimensions	4.5" H x 2.7" W x 1.5" D (114 mm x 69 mm x 38 mm) not including antenna
Radio Weight	0 lbs., 8 oz. (227g.)

Receiver	
Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 12 dB Sinad	0.25 uV
Adjacent Channel Selectivity	70 dB
Intermodulation and Rejection	70 dB
Spurious and Image Rejection	70 dB
AF Output	250 mW @ 8 Ohms

Transmitter	
Frequency Range (Tx):	156.025 to 157.425 MHz
RF Output Power	0.5, 1 or 3 watts
Spurious Emissions	-60 dB @ High Power, -55 dB @ Low Power
Microphone Type	Condenser
Frequency Stability	+/-10 ppm
FM Hum and Noise	40 dB

Disposal of Old Electrical or Electronics Equipment
This product may contain hazardous substances that could impact health and the environment if not disposed of properly.

The crossed out wheeled bin symbol indicates that the product should not be disposed of along with household waste. It should be handed over to an applicable collection point for the recycling of electrical equipment. By ensuring that this product is disposed of correctly you will help/prevent potential negative impact on the environment.

If you need more information on the collection, reuse and recycling systems, please contact your local civic office or the shop where it was originally purchased.

Product Service
For any questions about operating or installing this new Cobra product, or if parts are missing…
PLEASE CALL COBRA FIRST…do not return this product to the store.
If this product should require factory service, please call Cobra first before sending the product.
This will ensure the fastest turnaround time on any repair. If Cobra asks that the product be sent to its factory, the following must be furnished to have the product serviced and returned:

1. For Warranty Repair include some form of proof-of-purchase, such as a copy of a sales receipt. Make sure the date of purchase and product model number are clearly readable. If the original receipt are sent, they cannot be returned;

2. Send the entire product;

3. Enclose a detailed description of what is happening with the product. Include a typed or clearly printed name and address of where the product is to be returned, with phone number (required for shipment).

4. Pack the product securely to prevent damage in transit. If possible, use the original packing material;

5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to:

Cobra Factory Service
Cobra Electronics Corporation
6500 West Cortland Street
Chicago, Illinois 60707 U.S.A.;

6. If the product is in warranty, upon receipt of the product, it will either be repaired or exchanged depending on the model. Please allow approximately 3 – 4 weeks before contacting Cobra for status. If the product is out of warranty, a letter will automatically be sent out with information as to the repair charge or replacement charge.

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

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

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

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

Exclusions: This limited warranty does not apply:

1. To any product damaged by accident.

2. In the event of misuse or abuse of the product, or as a result of unauthorized alterations or repairs.

3. If the serial number has been altered, defaced, or removed.

4. If the owner of the product resides outside the U.S.A.

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

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

For Products Purchased Outside The U.S.A.

Please contact your local dealer for warranty information.

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