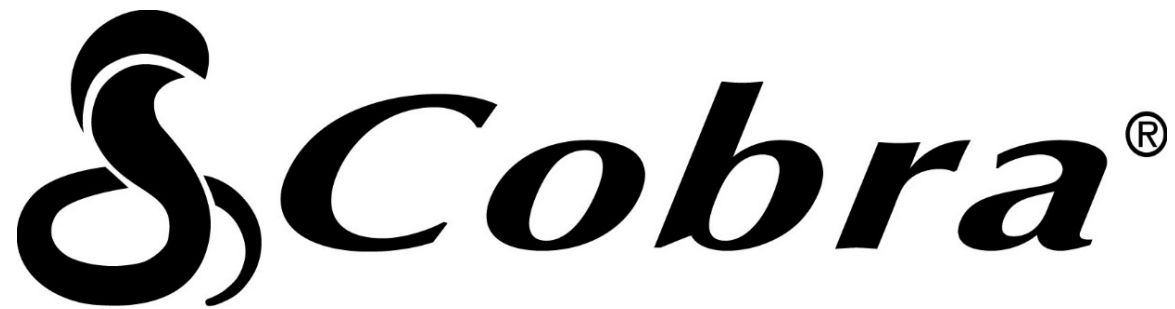




UI/Functional Specification

VHF Marine

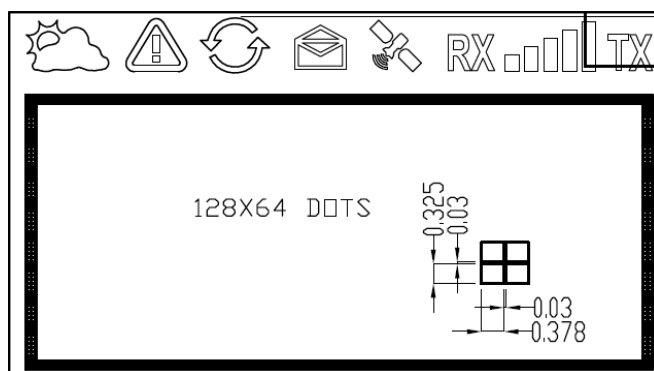
BlueBound1350B

Date: May 12, 2025
Issue: Preliminary R5
Issued By: Connor E
Pages: 36

Table of Contents

1. Keypad:.....	3
2. STARTUP DESCRIPTIONS	3
3. LCD Fixed Segment Icons.....	5
4. MARINE STANDBY MODE	5
4.1. KEY FUNCTIONS FOR MARINE STANDBY MODE (Radio):	6
4.2. KEY FUNCTIONS FOR MARINE STANDBY MODE (Microphone):.....	8
5. WX STANDBY MODE (US Model Only)	10
5.1. KEY FUNCTIONS FOR WX STANDBY MODE (USA model only):.....	10
6. Additional Softkey Functions in Marine Standby Mode	11
7. DISTRESS KEY OPERATION	21
8. RADIO MAIN MENU.....	24
8.1. Radio Settings	25
8.2. Channel Settings	29
8.3. DSC Setup	36
8.4. Waypoint Setup	41
8.5. ATIS (EU MODEL ONLY)	44
8.6. Rewind Say Again Setup	44
8.7. Antenna SWR Test	46
Revision History	48

1. Keypad:



Startup Screen

2. STARTUP DESCRIPTIONS

- When the unit is first powered ON, a 500 Hz power up tone will sound for 100ms unless KEY TONE has been set to OFF.
- The LCD will display the startup screen for 2 seconds.
 - All buttons will be inoperative during this 2 second period.
- After the 2 second period the display will turn ON only the appropriate icons depending on the last used condition
- On first startup, radio will prompt user to enter a MMSI number if it has not already been entered by the CPS. If a user skips this step and does not enter a MMSI number, radio will continue to prompt user to enter a MMSI number every time the radio is turned on.

Cobra Electronics
UI/Functional Specification

Model: BlueBound1350B

Issue: Preliminary R5

Default startup settings MR F77V2:

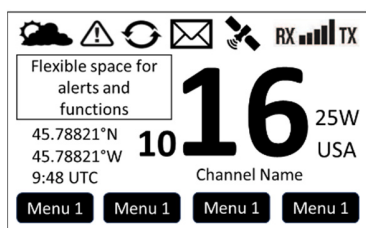
- Marine Channel 16
- Power level - High
- Key tones are ON
- Channel map set to "U" for USA channels
- WX channel "01" (WX mode)
- Weather Alert is OFF
- Squelch set to 5 (0-10)
- No saved Favorite channels
- Display Backlight Color – Amber
- Backlight Brightness Level – 3 (Max)
- Contrast Level – 3
- TW channel 01 = Channel 16 (always), TW channel 02 = 9 (adjustable), TW Channel 03 = 1 (adjustable)

Default startup settings MR F77EUV2:

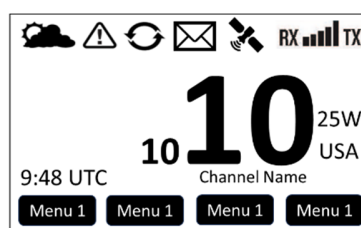
- Marine Channel 16
- Power level - High
- Key tones are ON
- Channel map set to "I" for International channels
- Squelch set to 5 (0-10)
- No saved Favorite channels
- Display Backlight Color – Amber
- Backlight Brightness Level – 3 (Max)
- Contrast Level - 3
- DW channel 01 = Channel 16 (always)

Factory Default reset key press: - HI/LO, MENU and DOWN ARROW keys together for 3 seconds.

PC reprogramming mode key press: - Press and hold HI/LO key when powering on the radio



Default Screen (Channel 16)



Default Screen (Non-Channel 16 w/GPS info off)

*Lat LON info will be off by default, but can be enabled on by the user in settings (need to create a settings section for this)

3. LCD Fixed Segment Icons

-  - Displayed when WX Standby mode is active.
- 
 - Displayed when weather alert is active for both WX and marine standby modes.
- 
 - Displayed when Rewind-Say-Again function is active.
- 
 - Displayed when the radio receives a DSC message. The icon will show envelope icon when a DSC message has been received and not read. The envelope icon will disappear when the DSC message is read by the user.
- 
 - The GPS fixed segment icon will be displayed when the internal GPS or external GPS is connected and receiving valid data. When the radio is still searching for valid GPS signal data, the GPS icon will flash.
- 
 - The RX icon will show when the radio is receiving a transmission.
- 
 - The TX icon will show when the radio is broadcasting a transmission.

4. 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 (5 total)

Low power - 3 bars ON

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

Beep tones: 1 beep 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.

4.1. KEY FUNCTIONS FOR MARINE STANDBY MODE (Radio):

1) Power/Volume/Squelch Knob

Press and hold knob for 2 seconds to turn unit power ON.

Press and hold knob for 2 seconds to turn unit power OFF.

When in marine standby mode, the volume/squelch knob will adjust volume by default just by rotating the knob clockwise or counterclockwise, you don't have to press the knob to adjust volume.

- Clockwise rotation of knob increases volume (to max).
- Counterclockwise rotation of knob decreases volume (to minimum).
- When volume is being adjusted, volume sub-menu will appear on the display.
- If no input is done by the user after 2 seconds, the volume sub-menu will disappear

Press and release knob to enter Squelch sub-menu.

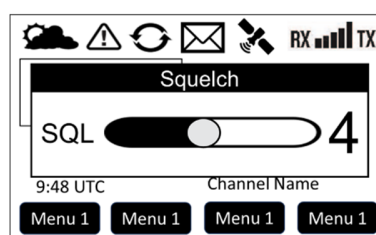
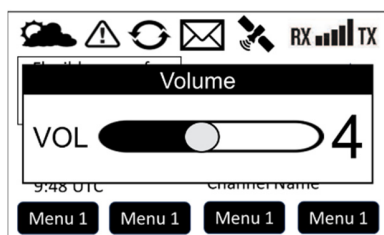
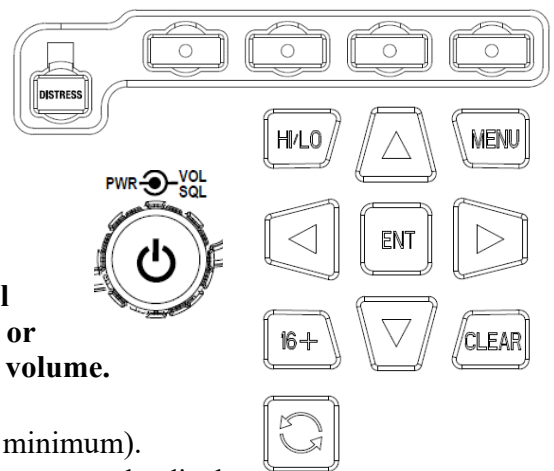
Clockwise rotation of knob increases Squelch (to max).

Counterclockwise rotation of knob decreases squelch (to minimum).

*When squelch is being adjusted, Squelch sub-menu will appear on the display.

Press and release knob again to exit Squelch sub-menu and return to standby.

*If no input by user for 2 seconds, stop displaying sub-menu and return to standby



2) UP/DOWN Arrow Keys

Press and hold UP arrow key >0.5 seconds; channels increase in rapid sequence every 250ms.

Press and release DOWN arrow key; channel # decrease.

Press and hold DOWN arrow key >0.5 seconds; channels decrease in rapid sequence every 250ms.

When max channel is reached, the next UP key press wraps around to the lowest channel in list.

When lowest channel is reached, the next DOWN key press wraps around to the highest channel.

3) LEFT/RIGHT Arrow Keys

Press and release RIGHT arrow key, menu softkey functions scrolls to the next set of 4 (until end).

Press and release LEFT arrow key, menu softkey functions scrolls to the previous set of 4 (until beginning)

*If LEFT or RIGHT arrow keys are pressed at the beginning/end of softkey function list, no action is taken by the radio



4) HI/LO Key

Press and release the HI/LO key to toggle TX output power levels.

Display will show the current selected power output.

5) 16+ Key

US Model:

Press and release; instant channel 16.

Press and release a second time; instant channel 9.

Press and release a 3rd time; return to original standby channel.

EU Model:

Press and release; instant channel 16.

Press and release a second time; return to original standby channel.

(EU Model) – Call channel can be enabled in the menu settings and changed to preferred channel (default channel 9) by the user when enabled in the menu settings.

6) CLEAR Key

Press and release the CLEAR key when at marine standby mode to exit any currently open sub-menus.

7) MENU Key

Press and release the MENU key to enter radio main menu.

8) REWIND Key

Press and release the REWIND key to begin recording audio transmission (up to 30 seconds).

Press and release the REWIND key again to stop recording audio transmission.

*While recording transmission, display will show “Recording :24” and Rewind Icon will show.

When audio transmission has finished recording, bring up Rewind Say Again menu.

Press and hold the REWIND key to enter Rewind Say Again menu.



9) DISTRESS Key

*Note: A MMSI number must be entered into the radio for the Distress key to function

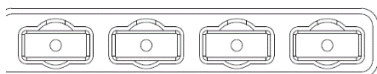
Press and release the DISTRESS key to enter the distress screen.

Use arrow keys to select nature of distress from list of options and press enter to select.

Radio will display selected distress along with message prompting user to press and hold the DISTRESS key to send message.

Press and hold the DISTRESS key for 3 seconds to activate DSC distress transmission.

*See DSC distress section for further information



10) SOFTKEYS

Press and release the SOFTKEYS to activate their corresponding menu function.

Specific menu function will depend on which selection is shown above each menu SOFTKEY.

4.2. KEY FUNCTIONS FOR MARINE STANDBY MODE (Microphone):

1) PTT Key

Press and hold to transmit; release to stop transmitting.

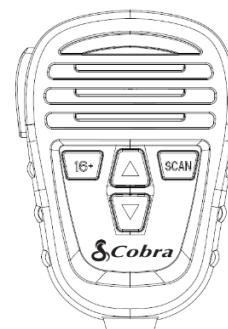
PTT key should only activate the transmitter on valid Transmit US, Canada, and International channels only. If PTT is pressed on a Receive only channel, unit will sound 3 error tones.

2) 16+ Key

Same operation as main radio 16+ Key.

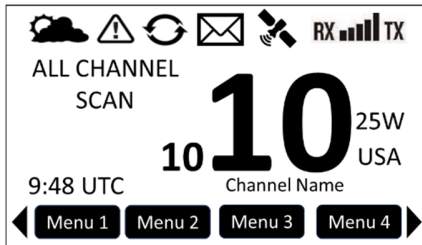
3) Channel UP/DOWN Arrow Keys

Same operation as main radio UP/DOWN arrow keys.

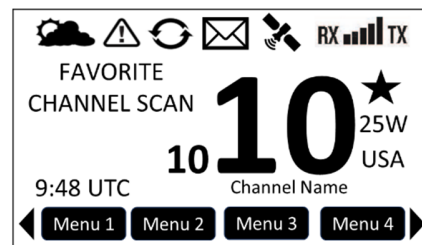


4) Scan Key

Press and release the SCAN key to scan all channels. The direction of scan by default is from lower to higher channels. A user can change the scan direction with the UP/DOWN arrow keys. During SCAN, the radio will show “ALL CHANNEL SCAN” text on the LCD display.



All Channel Scan



Favorite Channel Scan

Press and hold the SCAN key for 2 seconds to scan all favorite channels. The direction of scan by default is from lower to higher favorite channels. A user can change the scan direction with the UP/DOWN arrow keys. During favorite scan, the radio will show the scan icon on the LCD display along with the favorite channel star icon. **Note: Radio will still include channel 16 in the favorite channel scan regardless of if it is saved as a favorite channel or not.**

When a signal is received; radio will pause for 10 seconds before resuming scan.

Unit will cease scanning when PTT is activated.

*Radio must be properly squelched for scan to function.

*If there are fewer than 2 favorite channels saved, radio will not enter favorite channel scan

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.

16+ key – Press and release the 16+ key to exit SCAN and go to channel 16, press and release again to go to channel 9 (for EU model - Go to current chosen call channel, default channel 9), press and release a 3rd time to return to last active SCAN channel or last used standby channel if no activity during SCAN.

Scan key – Press and release the Scan key to exit SCAN and return to the last active SCAN channel or last used standby channel if no activity during SCAN.

HI/LO key – Press and release the HI/LO key to change power level, no interruption of scan.

Menu key – Press and release the Menu key to exit scan and enter the radio's main menu.

LEFT/RIGHT Arrow Keys – Same function as in marine standby mode, does not interrupt scan.

Softkeys – Will depend on which function is selected by softkeys. Will stop scan and execute menu function if certain function is chosen.

Clear key – Disabled during scan.

Rewind Say Again key – Disabled during scan.

Power/Volume/Squelch Knob – Can turn off radio and adjust volume the same as when in marine standby mode. Cannot adjust squelch while scan is active.

5. WX STANDBY MODE (US Model Only)

WX standby mode is activated by pressing the WX SOFTKEY menu function.



From WX standby:

Unit is in receive mode and tuned to the last used WX channel.

The weather cloud icon is turned ON in the LCD display.

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 UP/DOWN arrows keys to change WX channel.

When channel 12 is selected, the next UP key press wraps around to channel 01.

When channel 01 is selected, next Down key press wraps around to channel 12.

Default WX channel is 01.

*When weather alert has been turned on, but the user has left WX standby mode, the dedicated WX receiver will continuously check the current WX channel for the 1050Hz tone while in marine standby mode. When the WX alert conditions are met, the radio will switch to WX mode on the alert channel and sound an audible alert tone.

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

1) Power/Volume/Squelch Knob

Press and hold knob for 2 seconds to turn unit power ON.

Press and hold knob for 2 seconds to turn unit power OFF.

Clockwise rotation of knob increases volume (to max).

Counterclockwise rotation of knob decreases volume (to minimum).

*When volume is being adjusted, volume sub-menu will appear on the display.

*Squelch adjustment is disabled in WX standby mode.

2) Channel UP/DOWN Arrows

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

When max channel is reached, the next UP key press wraps around to the lowest channel in list.
When lowest channel is reached, the next DOWN key press wraps around to the highest channel.

3) PTT Key

PTT key is disabled in WX standby mode.

4) 16+ Key

Press and release the 16+ key to exit WX standby mode go to channel 16 in marine standby mode.
Press and release the 16+ key a 2nd time to go to channel 9.
Press and release the 16+ key a 3rd time to return to WX standby mode on last WX channel.

5) Scan

Disabled in WX Standby Mode.

6) LEFT/RIGHT Arrows

Disabled in WX Standby Mode.

7) Clear key

Exit WX Standby Mode and return to marine standby mode.

8) Softkeys

Only 2 softkeys are active in WX Standby Mode. Exit & ALERT.

9) Rewind Say Again key

Disabled in WX Standby Mode.

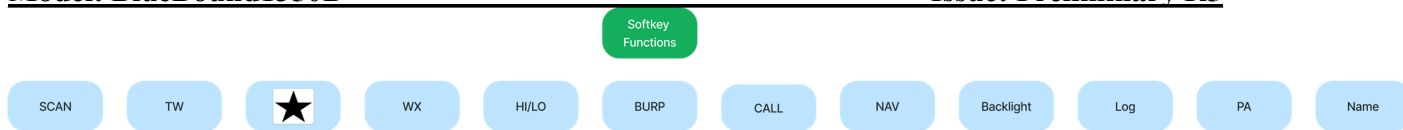
10) Menu key

Exit WX Standby Mode, return to marine standby mode and open the radio's main menu.

6. Additional Softkey Functions in Marine Standby Mode

There are multiple often used functions that are assigned to the software keys (softkeys) for easy access.

Users can press the softkey under the corresponding function or cycle to additional function options by pressing the LEFT/RIGHT arrow keys. There will be a default order for functions, but users can change the order within the radio setup menu.



Scan – Operates the same way as stated previously when the user presses or press and holds the SCAN key located on the radio’s microphone.

TW (DW by default for EU Model) – Press and release to activate Tri-Watch mode. Radio will begin to monitor channel 16 and the selected call channel (default channel 9 for US models and default OFF for EU models) while receiving on another channel.

If a signal is received on channel 16, the radio will pause watch on channel 16 for the duration of the transmission plus 10 seconds. After which it will resume watch function.

If a signal is received on the call channel or the current selected TW channel, the radio will pause watch on that channel for 10 seconds before resuming DW/TW scan.

*EU model will by default have DW instead of TW since the call channel is set to OFF by default. A user can still change the call channel to whatever channel they want within the radio setup menu and enable TW functionality. The radio softkey function button will either show TW or DW, depending on if the call channel has been chosen or not.

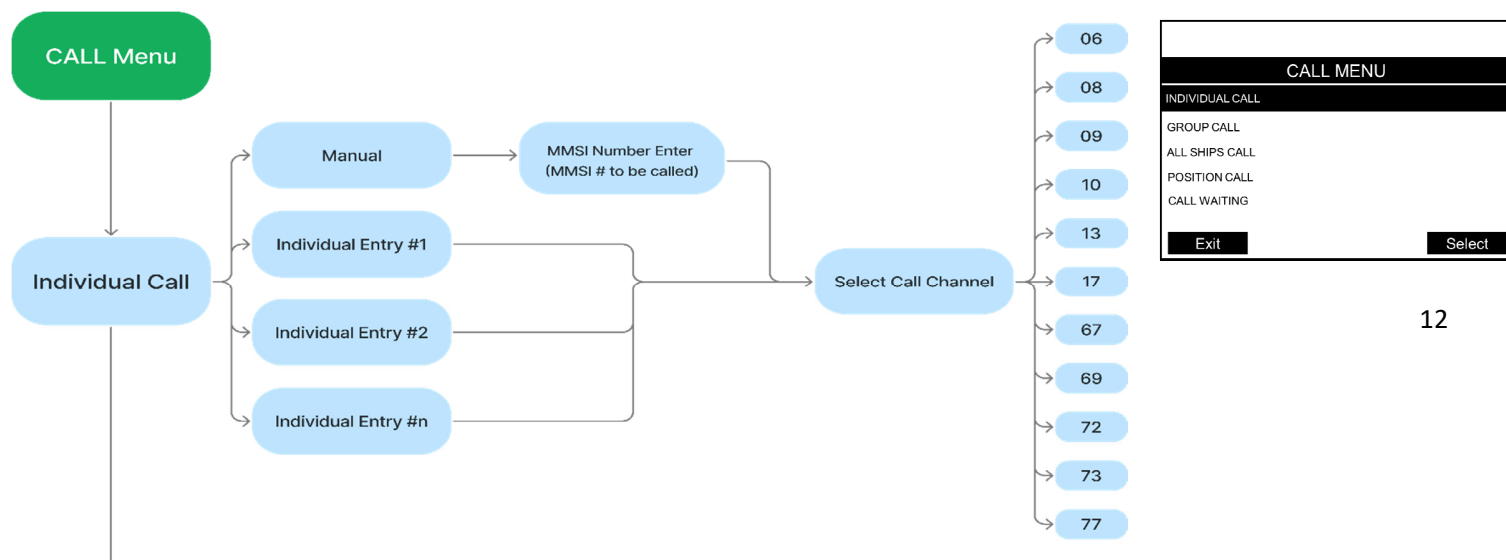
HI/LO – Press to cycle between transmission power levels.

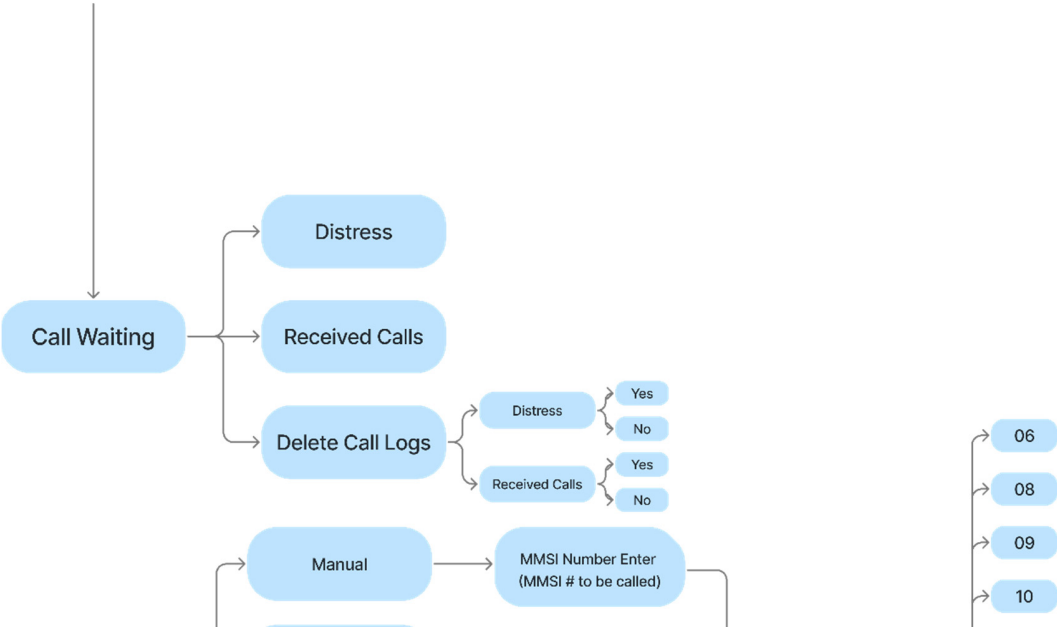
WX - Press to enter WX standby mode.

BURP – Press to active BURP mode on the radio. The BURP tones will sound at the maximum level from the internal speaker for 8 seconds. While BURP tones are sounding, the dot matrix on the LCD will display “BURP”. Additionally, during the 8 second window while the radio is playing the BURP tone, the radio will be locked from transmitting or any other button presses.

After the 8 second window has ended, the radio will return to marine standby mode.

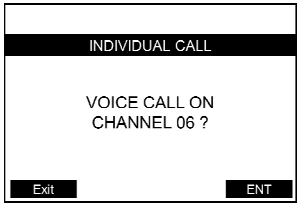
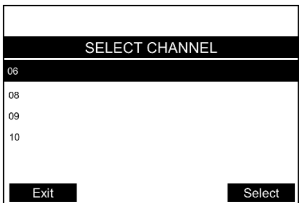
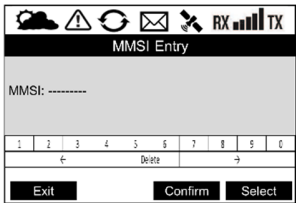
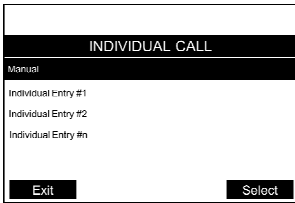
CALL – Press to enter the DSC call menu, allowing the user to initiate an individual, group or all ships DSC call. Additionally, the user can position request and send from this menu.





Individual Call:

An individual call enables you to send a DSC signal to only a specific station. Entering the individual call menu gives the user the option to either initiate a manual individual call or choose from one of their currently saved individual MMSI entries. The menu will display all currently available individual MMSI entries taken from the Individual Directory. If there are no current records saved in the Individual Directory, only Manual will show.



Selecting Manual will open up a screen to enter in the MMSI # of the vessel you want to send the call to. Selecting a saved Individual Entry will automatically use that record's saved MMSI # and proceed to the select channel screen. Once a channel has been selected, the user will be prompted to send an Individual call on the selected channel.

Once the call has been sent, the radio will display a waiting for acknowledgment screen showing the details of the sent individual call, along with an option to repeat the call. Pressing the Exit softkey anytime while displaying the waiting for acknowledgement status screen will exit the individual call status screen and return the radio to the Individual Call Menu Screen.

- Name of call recipient (Individual Entry #1)
- Status (Waiting for ACK)
- Total elapsed time of the call (00:00)
- The selected channel (Top Right Corner)

INDIVIDUAL CALL

Individual Entry #1
Waiting for ACK
Elapsed Time 00:00

06

Exit RPT

INDIVIDUAL CALL

Individual Entry #1
CONNECTED
Elapsed Time 00:00

06

Exit

Once the called radio acknowledges or accepts the call, the radio will display the connected status screen and the radio will tune to the selected call channel. If no action is taken by the user, the radio will automatically time out after 10 minutes and the radio will return to the VHF standby screen. Press the EXIT softkey anytime while on the connected status screen to return the radio to VHF standby mode.

If the radio receives an individual call, the individual call alarm will sound on the radio and the caller information will be displayed on the LCD. The call alarm can be silenced with any key press by the user. If Automatic Channel Switch is set to ON, the radio will automatically switch to the selected call channel. If Automatic Channel Switch is set to OFF, the radio will prompt the user to acknowledge and accept the call or respond back that you are unable to communicate. If ABLE is selected, the radio will send an acknowledgement and change to the selected call channel. If UNABLE is selected, the radio will transmit the acknowledgement "Unable to Comply" back and the radio will return to VHF standby mode with no changes.

INDIVIDUAL RECEIVE

NAME OF CALLER
NOT REPLIED
Received 00:00

06

STOP ALARM ANY KEY

INDIVIDUAL RECEIVE

NAME OF CALLER
NOT REPLIED
Received 00:00

06

UNABLE ABLE

INDIVIDUAL RECEIVE

NAME OF CALLER
CONNECTED
Elapsed Time 00:00

06

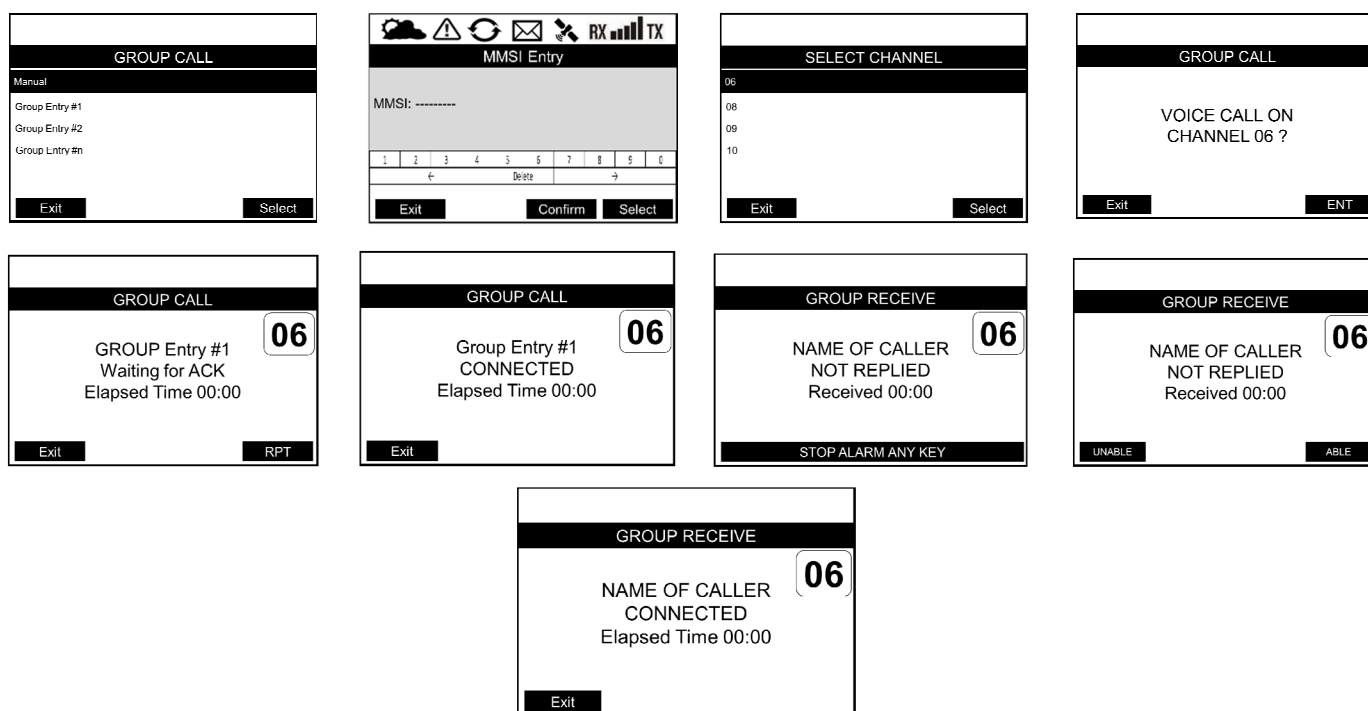
Exit

Pressing the Exit key at any time while on the connected individual receive status screen will exit and return the radio to VHF standby mode.

Group Call:

A Group call enables you to send a DSC call to only a specific group. Entering the group call menu gives the user the option to either initiate a manual group call or choose from one of their currently saved group MMSI entries to call. The menu will display all currently available group MMSI entries taken from the Group MMSI directory. If there are no current records saved in the Group MMSI directory, only Manual will show.

The functionality of Group Call transmit and receive should behave in a similar way to Individual Call transmit and receive, only instead handling the Group MMSI entries.



All Ships Call:

All ships that have a DSC transceiver use Channel 70 as their listening channel. When you want to announce a message to these ships that are within range, the All Ships Call option function is used. Entering the All Ships Call menu option takes the user directly to the category of message, either safety or urgency. Next the call channel selection menu will display prompting the user to choose which channel the radios will tune to after the all ships message is sent. A final confirmation message will appear on the radio prompting the user to confirm all ships call before being sent. Pressing the exit softkey at any time will return the radio to the call menu option.

Cobra Electronics
UI/Functional Specification
Model: BlueBound1350B

Issue: Preliminary R5

Once the all ships call has been sent, the all ships call status message will display on the radio showing the category of message, selected working channel and elapsed time since the call was sent. If no action is taken by the user, the radio will automatically time out after 10 minutes of inactivity and return to VHF standby mode. Alternatively, pressing the exit softkey will return the radio to VHF standby mode.

ALL SHIPS CALL CATEGORY

SAFETY

URGENCY

ExitSelect

SELECT CHANNEL

06

08

09

10

ExitSelect

ALL SHIPS CALL

TRANSMIT SAFETY?

ExitENT

ALL SHIPS CALL

SAFETY

Elapsed Time 00:00

06

Exit

Position Request:

Position request enables the DSC radio to obtain the position of a station that has a GPS device connected. Entering the position request menu option gives the user the option to choose from the current saved entries of the Individual Directory, or manually enter a position request. The menu will display all currently saved entries in the Individual Directory. If no entries have been saved, only manual will show. Selecting manual will open a screen prompting the user to enter the MMSI # of the vessel they want to make a position request to. After the recipient is selected, the radio will prompt for the category of position request, either routine or safety.

A status message will appear asking for confirmation on sending the position request. Pressing the exit softkey at anytime will return the radio to the call menu.

POSITION REQUEST

Manual

Individual Entry #1

Individual Entry #2

Individual Entry #n

ExitSelect

MMSI Entry

MMSI: -----

1234567890

←Delete→

ExitConfirmSelect

POSITION REQUEST

ROUTINE

SAFETY

ExitSelect

POSITION REQUEST

Individual Entry 1

Transmit?

ExitENT

Once the position request has been sent, a status message will show while waiting from acknowledgement from the receiving station, with the ability to resend the position request. Once the radio acknowledges or accepts the position request, the radio will display an acknowledged status screen. Pressing the INFO key will display the following position information on screen.

- --°--.-- (latitude)
- ---°--.-- (longitude)
- --:-- (time)

POSITION REQUEST

WAITING FOR ACK

Individual Entry 1

Elapsed Time 00:00

ExitRPT

POSITION REQUEST

ACKNOWLEDGED

Individual Entry 1

ExitINFO

POSITION REQUEST

--°--.-- (latitude)

---°--.-- (longitude)

--:-- (time)

ExitWPT

1010

COG: 230°

SOG: 5 Knots

Distance: 50 NM

Bearing: 100°

25W USA

EXIT