STANDARD HORIZON

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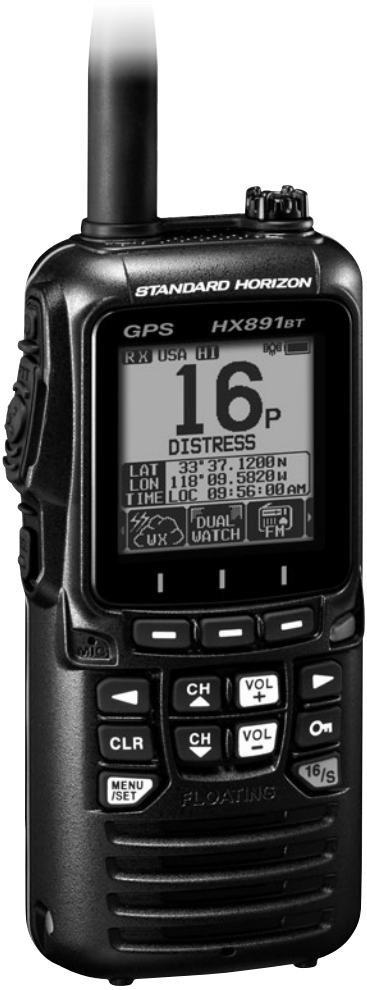
HX891BT
HX891BT/E

Class-H DSC GPS Transceiver

Owner's Manual



Bluetooth®

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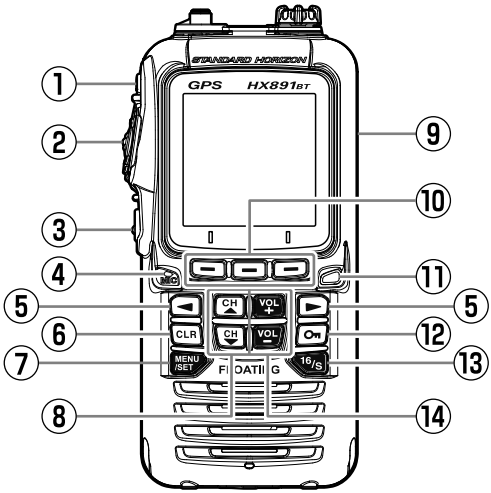
QUICK REFERENCE



The **HX891BT** is equipped with the E2O (Easy-To-Operate) menu system. Basic operation may be accomplished by following the procedures below:

① ⏻: Press and hold to turn the transceiver ON/OFF.
② **PTT** (Push-To-Talk): Activates the transmitter when pressed.
③ **SQL**: Press to display the SQL level setting screen, then press the **CH▲** key to squelch the audio or press the **CH▼** to un-squelch the radio.
④ **MIC**: Speak slowly and clearly into the **MIC** aperture, having it about 1/2 to 1 inch (1.2 to 2.5cm) away from your mouth while pressing the **PTT** key.
⑤ **◄/►**: Press to toggle the on-screen menus to right or left.
⑥ **CLR**: Press to cancel a function or menu selection.
⑦ **MENU/SET**: Press to access MENU; Press and hold to enter the SETUP menu.
⑧ **CH▼/CH▲**: Press to change the operating channel.
⑨ **DISTRESS**: Activates a DSC Distress Alert. Lift the red cover, press the **DISTRESS** once, then press and hold until the radio alarms.
⑩ **Soft keys**: These three programmable keys can be customized through the setup menu mode. Pressing one of these keys briefly will display the key functions at the bottom of the screen.
⑪ **Strobe Light**: Glows the Strobe Light continuously by pressing the [**STROBE**] soft key.
⑫ **O┳**: Press and hold to lock and unlock the keypad.
⑬ **16/S**: Press to recall channel 16. Press and hold to recall the sub channel.
⑭ **VOL−/VOL+**: Press to adjust the speaker audio volume.

1. GENERAL INFORMATION

1.1 INTRODUCTION

Congratulations on your purchase of the **HX891BT**! Whether this is your first portable marine VHF transceiver, or if you have other STANDARD HORIZON equipment, the STANDARD HORIZON organization is committed to ensuring your enjoyment of this high-performance transceiver, which should provide you with many years of satisfying communications even in the harshest of environments. STANDARD HORIZON technical support personnel stand behind every product sold.

The **HX891BT** is a Submersible*1 Floating Portable Marine transceiver is designed to be used in USA, International, and Canadian Marine bands. The **HX891BT** transmitter provides a full 6-Watt (5-Watt)*2 of transmit power which is also to selectable to 1 Watt to assist the user in ensuring maximum battery life. The **HX891BT** is equipped with the Bluetooth® function as standard, it supports hands-free communications using the optional Bluetooth® headset or commercially available products.

The **HX891BT** is capable of DSC (Digital Selective Calling) ITU-R M.493 Class H operation. Class H operation allows continuous receiving of Digital Selective Calling functions on channel 70 even if the radio is receiving a call. The **HX891BT** operates on all currently-allocated marine channels which are switchable for use with USA, International, or Canadian regulations. Emergency channel 16 can be immediately selected from any channel by pressing the red [**16/S**] key. NOAA weather channel can also be accessed immediately by pressing the [**WX**] soft key (in USA and Canada only).

With the internal high-performance 66 Channel GPS receiver, WAAS and QZSS satellites can be received.

We appreciate your purchase of the **HX891BT**, and encourage you to read this manual thoroughly, so as to learn and fully understand the capabilities of the **HX891BT**.

*1(IPX8 Specification for submersibility: 5 ft. (1.5m) for 30 minutes)

*2(5-Watt TX required in some countries)

2. SAFETY PRECAUTIONS

Be sure to read the safety precautions, and use this product safely.

Yaesu is not liable for any failures or problems caused by the use or misuse of this product by the purchaser or any third party. Also, Yaesu is not liable for damages caused through the use of this product by the purchaser or any third party, except in cases where ordered to pay damages under the laws.

Types and meanings of the marks

⚠ DANGER	This mark indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.
⚠ WARNING	This mark indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
⚠ CAUTION	This mark indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury or only property damage.

Types and meanings of symbols

⃠	These symbols signify prohibited actions, which must not be done to use this product safely. For example: ⃠ indicates that the product should not be disassembled.
❗	These symbols signify required actions, which must be done to use this product safely. For example: indicates that the power plug should be disconnected.

⚠ DANGER

Do not operate the device when flammable gas is generated.
Doing so may result in fire and explosion.

Do not transmit with this device in a crowded place for the safety of persons using a medical device such as a cardiac pacemaker.
The radio wave emitted from this product can cause the medical device to malfunction and result in an accident.

Do not touch any liquid leaking from the liquid display with your bare hands.
There is a risk of chemical burns occurring when the liquid comes into contact with the skin or gets into the eyes. In this case, seek medical treatment immediately.

Do not touch any material leaking from the battery pack with bare hands.
The chemical that has stuck to your skin or entered your eye can cause chemical burns. In such a case, consult the doctor immediately.

Do not solder or short-circuit the terminals of the battery pack.
A fire, leak, overheating, explosion, or ignition may result. Do not carry the battery pack together with a necklace, hairpin, or small metal objects. A short circuit can result.

⚠ WARNING

Do not power this transceiver with a voltage other than the specified power supply voltage.
A fire, electric shock, or damage may result.

Do not make very long transmissions.
The main body of the transceiver may overheat, resulting component failure or operator burns.

Do not disassemble or make any alteration to this product.
An injury, electric shock, or failure may result.

Never touch the antenna during transmission.
This may result in injury, electric shock and equipment failure.

Do not handle the battery pack or charger with wet hands. Do not insert or remove the power plug with wet hands.
An injury, leak, fire, or failure may result.

If smoke or a strange odor is emitted from the main body, battery pack, or battery charger, immediately turn the transceiver off; remove the battery pack.
A fire, chemical leak, overheating, component damage, ignition, or failure may result. Please contact the dealer from which you purchased this product.

⚠ CAUTION

Do not place the transceiver on an unsteady or sloping surface, or in a location with extreme vibration.
The transceiver may fall or drop, resulting in fire, injury and equipment damage.

Stay as far away from the antenna as possible during transmission.
Long-term exposure to electromagnetic radiation may have a negative effect on the human body.

Do not dangle or throw the transceiver by holding its antenna.
This may injure others and may also result in damage and failure of the transceiver.

Do not wipe the case using thinner and benzene etc.
Use only a soft, dry cloth to wipe stains from the case.

Keep this product out of the reach of children.
Injury to the child, or damage to the transceiver may result.

Do not use any products other than the specified options and accessories.
Failure or miss operation may result.

If the transceiver will not be used for an extended period, turn it OFF and remove the battery pack for safety.

Do not throw the transceiver, or subject it to strong impact forces.
Physical abuse may result in component damage and equipment failure.

Keep magnetic cards and videotapes away from the transceiver.
The data recorded on cash cards or videotapes may be erased.

Do not use the transceiver in a crowded place.
The antenna may strike others and result in an injury.

Install the hand strap and belt clip securely.
Improper installation may cause the transceiver to fall or drop, resulting in an injury or damage.

Before discarding a depleted battery pack, affix tape or insulating covering to its terminals.

3. ONLINE WARRANTY REGISTRATION

Please visit **www.standardhorizon.com** - Owner's Corner to register the **HX891BT** Marine VHF.

NOTE: visiting the STANDARD HORIZON website from time to time may be beneficial. When new products are released, information will appear on the website.

4. ABOUT THIS RADIO

4.1 PROHIBITED COMMUNICATIONS (in USA or Canada only)

The FCC prohibits the following communications:

- False distress or emergency messages:
- Messages to "any boat" except in emergencies and radio tests;
- Messages to or from a vessel on land;
- Transmission while on land;
- Obscene, indecent, or profane language (potential fine of $10,000).

4.2 ABOUT VHF RADIO

The radio frequencies used in the VHF marine band lie between 156 and 158MHz with some shore stations available between 161 and 163MHz. The marine VHF band provides communications over distances that are essentially "line of sight" (VHF signals do not travel well through objects such as buildings, hills or trees). Actual transmission range depends much more on antenna type, gain and height than on the power output of the transmitter. On a fixed mount 25W radio transmission expected distances can be greater than 15 miles (25km), for a portable 5 W radio transmission the expected distance can be greater than 5 miles (8km) in "line of sight".

The user of a Marine VHF radio is subject to severe fine if the radio is used on land. The reasoning for this is you may be near an inland waterway, or propagation anomalies may cause your transmission to be heard in a waterway. If this occurs, depending upon the marine VHF channel on which you are transmitting, you could interfere with a search and rescue case, or contribute to a collision between passing ships. For VHF Marine channel assignments refer to "**20 VHF MARINE CHANNEL ASSIGNMENTS**" on page 102.

4.3 DISTRESS AND HAILING (CHANNEL 16)

Channel 16 is known as the Hail and Distress Channel. An emergency may be defined as a threat to life or property. In such instances, be sure the transceiver is on and set to CHANNEL 16. Then use the following procedure:

1. Press the **PTT** (Push-To-Talk) button and say "***Mayday***, ***Mayday***, ***Mayday***. This is _____ , _____ , _____ " (your vessel's name).
2. Then repeat once: "***Mayday***, _____ " (your vessel's name).
3. Now report your position in latitude/longitude, or by giving a true or magnetic bearing (state which) to a well-known landmark such as a navigation aid or geographic feature such as an island or harbor entry.
4. Explain the nature of your distress (sinking, collision, aground, fire, heart attack, life-threatening injury, etc.).
5. State the kind of assistance your desire (pumps, medical aid, etc.).
6. Report the number of persons aboard and condition of any injured.
7. Estimate the present seaworthiness and condition of your vessel.
8. Give your vessel's description: length, design (power or sail), color and other distinguishing marks. The total transmission should not exceed 1 minute.
9. End the message by saying "***OVER***". Release the **PTT** button and listen.
10. If there is no answer, repeat the above procedure. If there is still no response, try another channel.

NOTE

The **HX891BT** has the DSC Distress Alert, that can transmit a Distress Alert digitally to all ships with compatible DSC radios. Refer to section "**11. DIGITAL SELECTIVE CALLING (DSC)**".

4.4 CALLING ANOTHER VESSEL (CHANNEL 16 OR 9)

Channel 16 may be used for initial contact (hailing) with another vessel. However, its most important use is for emergency messages. This channel must be monitored at all times except when actually using another channel.

It is monitored by the U.S. and Canadian Coast Guards and by other vessels. **Use of channel 16 for hailing must be limited to initial contact only**. Calling should not exceed 30 seconds, but may be repeated 3 times at 2-minute intervals. In areas of heavy radio traffic, congestion on channel 16 resulting from its use as a hailing channel can be reduced significantly in U.S. waters by using **channel 9** as the initial contact (hailing) channel for non-emergency communications. Here, also, calling time should not exceed 30 seconds but may be repeated 3 times at 2-minute intervals.

Prior to making contact with another vessel, refer to the channel charts in this manual, and select an appropriate channel for communications after initial contact. For example, Channels 68 and 69 of the U.S. VHF Charts are some of the channels available to non-commercial (recreational) boaters. Monitor your desired channel in advance to make sure you will not be interrupting other traffic, and then go back to either channel 16 or 9 for your initial contact.

When the hailing channel (16 or 9) is clear, press the **PTT** button and state the name of the other vessel you wish to call and then ***"this is***" followed by the name of your vessel and your Station License (Call Sign) then release the **PTT** button. When the other vessel returns your call, immediately request another channel by pressing the **PTT** button and saying "***go to***", the number of the other channel, say "***over***" and release the **PTT** button. Then switch to the new channel. When the new channel is not busy, call the other vessel.

After a transmission, say "***over***", and release the **PTT** button. When all communication with the other vessel is completed, end the last transmission by stating your Call Sign and the word "***out***". Note that it is not necessary to state your Call Sign with each transmission, only at the beginning and end of the contact.

Remember to return to Channel 16 when not using another channel. Some radios automatically monitor Channel 16 even when set to other channels or when scanning.

4.5 MAKING TELEPHONE CALLS

To make a radiotelephone call, use a channel designated for this purpose. The fastest way to learn which channels are used for radiotelephone traffic is to ask at a local marina. Channels available for such traffic are designated ***Public Correspondence*** channels on the channel charts in this manual. Some examples for USA use are Channels 24, 25, 26, 27, 28, 84, 85, and 86. Call the marine operator and identify yourself by your vessel's name. The marine operator will then ask you how you will pay for the call (telephone credit card, collect, etc.) and then link your radio transmission to the telephone lines.

The marine telephone company managing the VHF channel you are using may charge a link-up fee in addition to the cost of the call.

4.6 BRIDGE CHANNELS 13 AND 67

Channel 13 is used at docks, bridges and by vessels maneuvering in port. Messages on this channel must concern navigation only, such as meeting and passing in restricted waters.

Channel 67 is used for navigational traffic between vessels.

By regulation, power is normally limited to 1 Watt on these channels. Your radio is programmed to automatically reduce power to this limit on these channels. However, in certain situations it may be necessary to temporarily use a higher power. See Page 23 for means to temporarily override the low-power limit on these two channels.

4.7 RADIO CARE

Before using the radio:

1. It is recommended to fully charge the battery. See section "**6.1.4 Battery Charging**" for details.
2. Be sure that the speaker microphone cap, antenna and battery are in place and firmly tightened.
3. Care must be taken if the radio was dropped, a close inspection may be needed to insure the radio case and gaskets are in adequate condition.

NOTE

To keep the LCD, keypad and speaker grill clean and in top operating condition after exposure to water: Clean the radio with fresh water after exposure to salt water by rinsing the radio under a sink faucet or by dunking the radio in a bucket of fresh water. After washing, use a soft cloth and thoroughly dry all parts of the radio.

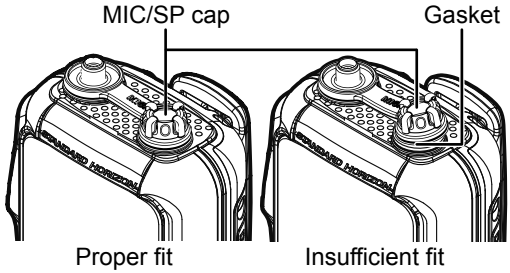
4.8 NOTES TO ASSURE WATERPROOF INTEGRITY

CAUTION!

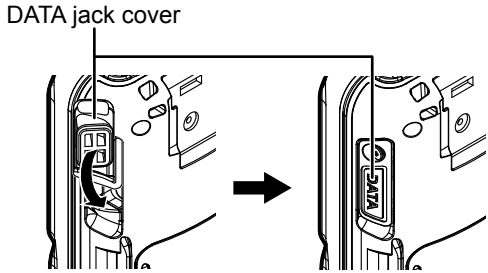
To ensure the waterproof integrity of the HX891BT, please make sure to observe the precautions described below of the HX891BT, observe the precautions regarding waterproofing as described below.

Failure to observe even one of the precautions may degrade the waterproof integrity, resulting in water intrusion into the transceiver. As a result, the transceiver will not float.

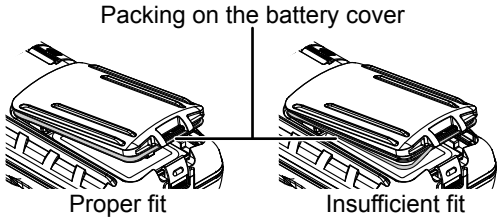
To prevent water intrusion please make sure that the MIC/SP cap, Data jack cover and battery cover are properly sealed.



- Use your thumb and index finger to firmly screw in the MIC/SP cap tight creating a water proof seal.
- Make sure that there is no dust, dirt or crack on the jack and the rubber gasket.
- Remove dust and dirt before screwing in the cap.



- Close the DATA jack cover completely.
- Make sure that there is no dust, dirt or crack on the DATA jack cover.
- Remove dust and dirt before closing the cover.



- Attach the battery cover so that the gasket fits into the groove, being careful not to leave a gap.
- Make sure that there is no dust, dirt or crack on the gasket groove and the rubber gasket. Remove dust and dirt before attaching the battery cover.

NOTE

If you find any cracks on the battery cover or gasket, please contact Standard Horizon or your local dealer to purchase a replacement.

5. PACKING LIST

5.1 PACKING LIST

When the package containing the transceiver is first opened, please check it for the following contents:

- **HX891BT** Transceiver
- **CAT460** Antenna*1
- **SBR-13LI** 7.4V 1800 mAh Li-ion Battery Pack
- **SAD-25***2 AC adaptor for **SBH-32**
- **SBH-32** Charger Cradle
- **E-DC-19A** DC Cable with 12 V Cigarette Lighter Plug for **SBH-32**
- **SBT-13** Alkaline Battery Case for AAA x 5
- **CLIP-22** Belt Clip
- **YS-05-01** Hand Strap
- **T9101648** USB Cable
- Owner's Manual

*1(Antenna gain: -1.5 dBi, Impedance: 50 ohm)

*2(Depending on the transceiver version)

5.2 OPTIONAL ACCESSORIES

- **SAD-25***1 AC Adaptor for the **SBH-32**
- **SBH-32** Charger Cradle
- **SBT-13** Alkaline Battery Case (AAA x 5 pcs)
- **SBR-13LI** 7.4 V 1800 mAh Li-ion Battery Pack
- **MH-73A4B** Submersible Speaker/Microphone
- **SSM-21A** Submersible Speaker/Microphone with Earphone Jack
- **SEP-10A** Earphone for **SSM-21A**
- **SSM-64A** VOX Headset
- **SSM-517A** Earpiece/Microphone
- **SSM-BT20** Bluetooth® Headset
- **CN-3** Radio-to-Ship's-Antenna Adapter
- **E-DC-19A** DC Cable with 12 V Cigarette Lighter Plug
- **E-DC-6** DC Cable; plug and wire only
- **SCH-11** Belt Clip Hanger

*1(Depending on the transceiver version)

NOTE

Charge the battery before operating the HX891BT for the first time. Please see section "**6.1.4 Battery Charging**" for details.

6. GETTING STARTED

CAUTION!

Waterproof and floating features of the transceiver are assured only when the **battery cover** is correctly attached to the transceiver, the **DATA jack cover** is locked completely and the **MIC/SP cap** is screwed in tight. Refer to the section "**4.8 NOTES TO ASSURE WATERPROOF INTEGRITY**", for details on the waterproof and floating integrity.

6.1 BATTERIES AND CHARGERS

If the radio has never been used, or its charge is depleted, it may be charged by connecting the **SBH-32** Charger Cradle with the **SAD-25** AC Adaptor, as shown in the illustration. If 12V DC power is available, the **E-DC-19A** DC Cable with 12 V Cigarette Lighter Plug or the optional **E-DC-6** DC Cable may be used for charging the battery. The **SAD-25**, **E-DC-19A** and **E-DC-6** will charge a completely discharged **SBR-13LI** battery pack in about 3 hours.
The **SBR-13LI** is a high-performance Li-ion battery providing high capacity in a compact package.

SBR-13LI Rechargeable Battery Pack

Capacity	1800 mAh
Nominal Voltage	7.4 V

Temperature Range	Minimum		Maximum	
	°C	°F	°C	°F
Charge	5	41	35	95
Discharge	–20	–4	60	140
Storage	–10	14	35	95

CAUTION

To avoid risk of explosion and injury, **SBR-13LI** battery pack should only be removed, charged or recharged in non-hazardous environments.

6.1.1 Battery Safety

Battery packs for your transceiver contain Li-ion batteries. This type of battery stores a charge powerful enough to be dangerous if misused or abused, especially when removed from the transceiver. Please observe the following precautions:

DO NOT SHORT BATTERY PACK TERMINALS: Shorting the terminals that power the transceiver can cause sparks, severe overheating, burns, and battery cell damage. If the short is of sufficient duration, it is possible to melt battery components. Do not place a loose battery pack on or near metal surfaces or objects such as paper clips, keys, tools, etc. When the battery pack is installed on the transceiver, the terminals that transfer current to the transceiver are not exposed. The terminals that are exposed on the battery pack when it is mounted on the transceiver are charging terminals only and do not constitute a hazard.

DO NOT INCINERATE: Do not dispose of any battery in a fire or incinerator. The heat of fire may cause battery cells to explode and/or release dangerous gases.

CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Battery Maintenance

For safe and proper battery use, please observe the following:

- Battery packs should be charged only in non-hazardous environments.
- Use only STANDARD HORIZON-approved batteries.
- Use only a STANDARD HORIZON-approved charger. The use of any other charger may cause permanent damage to the battery.
- Follow charging instructions provided with the chargers.
- Keep the battery contacts clean.

Battery Storage

Store the batteries in a cool place to maximize storage life. Since batteries are subject to self-discharge, avoid high storage temperatures that cause large self-discharge rates. After extended storage, a full recharge is recommended.

Battery Recycling

DO NOT PLACE USED BATTERIES IN THE REGULAR TRASH!
LI-ION BATTERIES MUST BE COLLECTED, RECYCLED OR DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER.

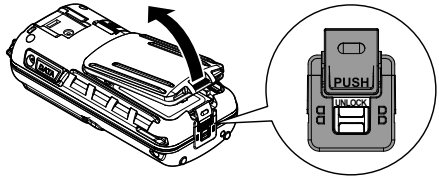
The incineration, landfill disposal, or mixing of Li-ion batteries with the municipal solid waste stream is PROHIBITED BY LAW in most areas.

Return batteries to an approved Li-ion battery recycler. This may be available where the battery was purchased.

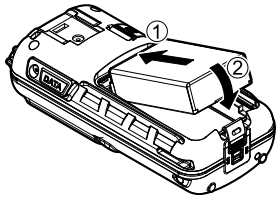
Contact your local waste management officials for other information regarding the environmentally safe collection, recycling and disposal of Li-ion batteries.

6.1.2 Rechargeable Battery Installation/Removal

1. Turn the transceiver OFF.
2. Slide the battery cover lock switch to the "**UNLOCK**" position, then press "**PUSH**" to open the battery cover.



3. Install the **SBR-13LI** battery pack into the battery rest aligning it to the battery contacts until it clicks.
4. Attach the battery cover, then slide the battery cover lock switch to the "**LOCK**" position.



To remove the battery pack, turn the transceiver off, open the battery cover, then push and lift up the bottom end of the battery pack.

NOTE

The battery lock must be set to "**LOCK**" position to ensure water integrity and keep the battery from coming loose.

6.1.3 Battery Life Information

	: Full battery power.
	: Enough battery power.
	: Low battery power.
	: Poor battery power. Charge battery.
	: Charge the battery immediately.

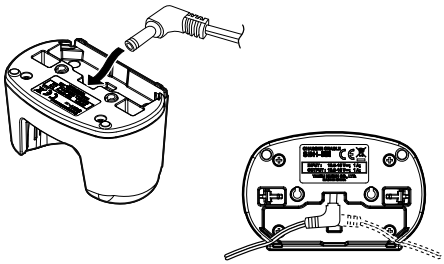
When the "▭" icon appears, it is recommended that you charge the battery soon.

WARNING

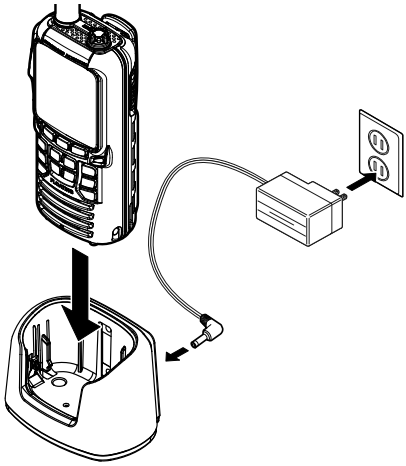
- If the transceiver is not used for a long period of time with the battery pack installed, deterioration of the battery pack can accelerate.
- If the transceiver is unused for a long period of time, be sure to store it with the battery pack removed. When the transceiver and battery are stored for an extended period, install the battery pack every six months and recharge the battery to prevent it from discharged and damaged.

6.1.4 Battery Charging

1. Insert the DC plug from the **SAD-25** into the DC jack at the bottom of the **SBH-32**.
   Place the SAD-25 cable into either of the left or right hook in the bottom of the **SBH-32** cradle.



2. Plug the **SAD-25** into the AC line outlet.
3. Insert the **HX891BT** (with the battery pack) into the **SBH-32**; the antenna should be at the left side when viewing the charger from the front.
   If the **HX891BT** is inserted correctly, the **HX891BT**'s LCD display will show the battery charging icon. A fully-discharged pack will be charged completely in approximately 3 hours.



When charging is completed, the battery charging icon will disappear.

CAUTION

The **SBH-32** and **SAD-25** is NOT designed to be waterproof. Charge the radio in a dry location.

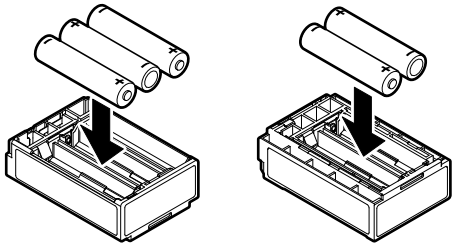
NOTE

The **SBH-32** is only designed for the charging of the **HX891BT**'s battery, and is not suitable for other purposes. The **SBH-32** may contribute noise to TV and radio reception in the immediate vicinity, so we do not recommend its use adjacent to such devices.

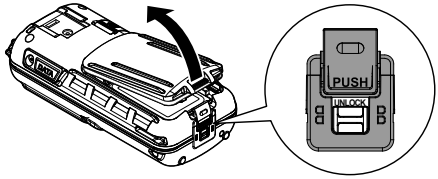
6.1.5 Installation of the SBT-13 Battery Case

The **SBT-13** is a battery case that holds five “AAA” size Alkaline batteries and is used with the **HX891BT** transceiver. The Alkaline batteries can be used for reception and transmission in an emergency, and battery life will be shortened dramatically.

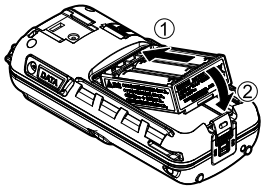
1. Turn the transceiver OFF.
2. Slide the five “AAA” size Alkaline batteries into the **SBT-13** with the Negative (**−**) side of the batteries touching the spring connectors inside the **SBT-13**.
   Put three batteries into the compartment on the front side and two on the back side.



3. Slide the battery cover latch to the “**UNLOCK**” position, then press “**PUSH**” to open the battery cover.



4. Install the **SBT-13** into the battery compartment and align it to the battery contacts until it clicks.
5. Attach the battery cover, then slide the battery cover latch to the “**LOCK**” position.



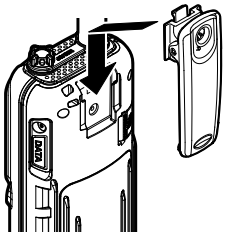
To remove the battery case, turn the transceiver **OFF**, open the battery cover, then push and lift up the bottom end of the battery case.

NOTE

The **HX891BT** will float with the **SBT-13** attached.

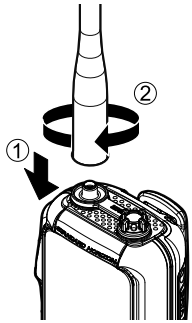
6.2 BELT CLIP INSTALLATION / REMOVAL

1. To install, align the Belt Clip **CLIP-22** to the groove of the Battery pack, then press the Belt Clip downward until it locks in place with a “Click”.
2. To remove, pull the **CLIP-22** tab away from the battery pack to unlock the **CLIP-22**, then slide it upward to remove it.



6.3 ATTACHING AN ANTENNA

Insert the **CAT460** antenna into the **ANT** jack at the top panel, hold the bottom end of the antenna, then screw it onto the mating connector on the transceiver until it is snug. Do not over-tighten.



6.4 MARITIME MOBILE SERVICE IDENTITY (MMSI)

6.4.1 What is an MMSI?

An MMSI is a nine-digit number used on marine transceivers capable of using Digital Selective Calling (DSC). This number is used like a telephone number to selectively call other vessels.

THIS NUMBER MUST BE PROGRAMMED INTO THE RADIO TO OPERATE DSC FUNCTIONS.

How can I obtain an MMSI assignment?

Please contact the Radio Licensing Authority for your country for information on how to obtain an MMSI number.

6.4.2 Programming the MMSI

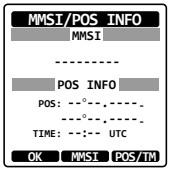
WARNING

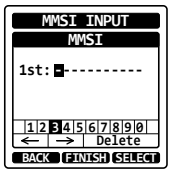
> **The MMSI can be entered only once.** Therefore, **please be careful not to input the incorrect MMSI number.** If you need to change the MMSI number after it has been entered, the radio will have to be reset. Refer to the section **19.3 Reset the USER MMSI and ATIS CODE**.

Press [MENU/SET] key ➡ MMSI/POS INFO ➡ SELECT

([CH▲] / [CH▼] / [►] / [◄] key) ([▬] key)

1. Press the [**MMSI**] soft key.
2. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] keys to select the first number of your MMSI, then press the [**SELECT**] soft key to step to the next number.
3. Repeat step 2 to set your MMSI number (9 digits).





4. If a mistake was made entering in the MMSI number, press the [**CH▼**]/[**CH▲**]/[◄]/[►] keys to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2.
5. When finished programming the MMSI number, press the [**FINISH**] soft key. The radio will ask you to input the MMSI number again. Perform steps 2 through 5 above.
6. After the second number has been input, press the [**FINISH**] soft key to store the MMSI.
7. Press the [**OK**] soft key to return to radio operation.

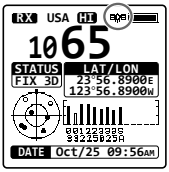
NOTE

> To view your MMSI after programming to ensure it is correct, perform steps 1 to 2. Look that the MMSI number shown on the display is correct.

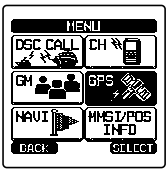
6.5 CHECKING GPS SIGNAL (GPS STATUS DISPLAY)

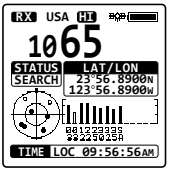
When the **HX891BT** receives the GPS signal, a small satellite icon "" will appear on the display and your current location (latitude/longitude) is shown on the display.

The **HX891BT** has a GPS status display which shows the satellites currently being received, along with a graphical (bar-graph) representation of the relative signal strengths from the satellites.



1. Press and hold the **POWER** key on the left side of the transceiver to turn it on.
2. Press the [**MENU/SET**] key to display "**MENU**", then press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "**GPS**".
3. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select "**GPS STATUS**".
4. Press the [**ENTER**] soft key to display the GPS status currently being received.
5. Press the [**CLR**] key to return to radio operation.





NOTE

- When the **HX891BT** is first turned on, it may take several minutes to compute a fix of your position. This is normal, as the **HX891BT** is downloading “almanac” information from the GPS satellites.
- When using the **HX891BT** inside of a cabin where GPS reception is limited, choose a place where GPS satellite reception is good enough referring to the GPS status display.

6.6 CHANGING THE GPS TIME

From the factory the **HX891BT** shows GPS satellite time or UTC (Universal Time Coordinated) time. A time offset is needed to show the local time in your area. The time offset must be changed so that the radio will display the current time in your area.

Press and hold [MENU/SET] key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → TIME OFFSET (CH▲ / CH▼ key) → SELECT (— key)

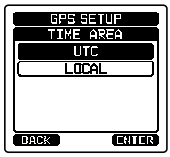
1. Press the [**CH▼**]/[**CH▲**] key to select the time offset of your location. If “00:00” is assigned, the time is the same as UTC or GPS satellite time.
2. Press the [**ENTER**] soft key to store the time offset.
3. Press the [**CLR**] key to return to radio operation.

6.7 CHANGING THE TIME LOCATION

This menu selection allows the radio to show UTC time or local time with offset.

Press and hold [MENU/SET] key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → TIME AREA (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select “**UTC**” or “**LOCAL**”.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

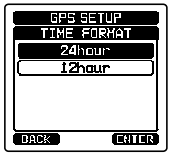


6.8 CHANGING THE TIME FORMAT

This menu selection allows the radio to be setup to show time in 12-hour or 24-hour format.

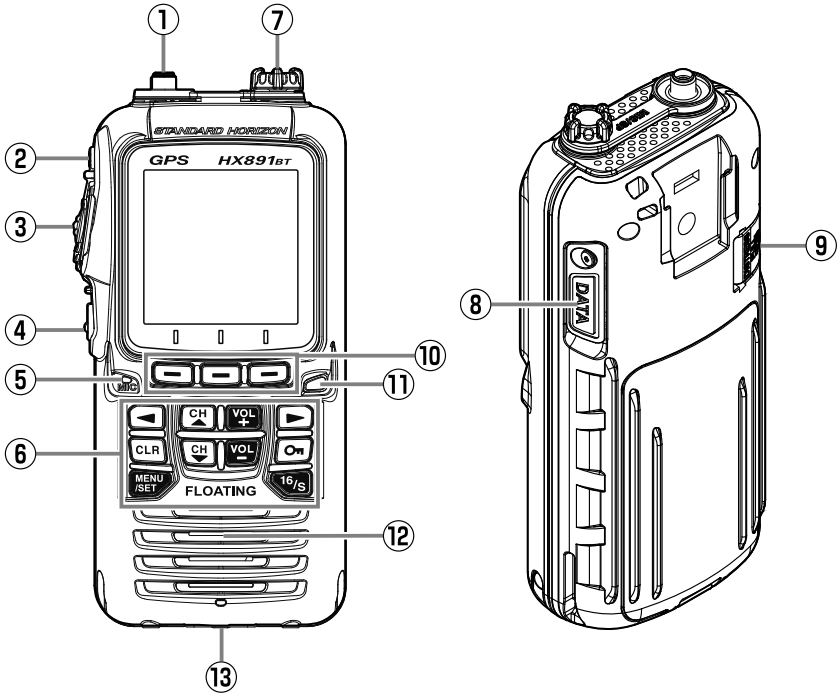
Press and hold [MENU/SET] key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → TIME FORMAT (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select “**12hour**” or “**24hour**”.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.



7. CONTROLS AND SWITCHES

This section defines each control of the transceiver. See illustration below for location of controls. For detailed operating instructions refer to chapter 8 of this manual.



NOTE

HX891BT is only submersible* when the MIC/SP jack, DATA jack and battery cover, are properly sealed with their rubber gaskets. *(IPX8 Specification for submersibility: 5ft. (1.5m) for 30 minutes.)

① **ANT** jack (Top side)
The supplied **CAT460** flexible antenna is attached here.

② ⏻ (Power) switch (Left side)
Press and hold to toggle the radio ON or OFF.

③ **PTT** (Push-To-Talk) button (Left side)
When pushed activates the transmitter.

④ **SQL** switch (Left side)

Press this key to activate the squelch adjusting mode. Press the **CH▲** or **CH▼** key to adjust the squelch threshold level.

Press and hold the squelch key for 3 seconds to open the squelch, allowing you to monitor the operating channel. Press this key to resume normal (quiet) monitoring.

⑤ **MIC** aperture

The internal microphone is located here.

NOTE

When transmitting, position your mouth about 1/2 to 1 inch (1.2 ~ 2.5cm) away from the small microphone opening. Speak slowly and clearly into the microphone.

⑥ Keypad

MENU/SET key

Press to access MENU.

Press and hold to access SETUP.

CH▲ key

This key is used to change the operating channel or the squelch threshold level.

Press the key momentarily, the channel (or squelch level) increases one step. When the key is held, the channel (or squelch level) increases continuously.

CH▼ key

This key is used to change the operating channel or the squelch threshold level.

Press the key momentarily, the channel (or squelch level) decreases one step. When the key is held, the channel (or squelch level) decreases continuously.

⊶ key

Hold this key down to lock the keypad so that operations are not accidentally changed. "**KEY LOCK**" will appear on the entire screen, to indicate that the functions are locked. To unlock the keypad, hold the key down until "**UNLOCK**" appears.

◄ and ► key

Press to toggle the on-screen menus to right/left.

VOL+ key

Press to increase the speaker audio volume level.

VOL− key

Press to decrease the speaker audio volume level.

16/**S** key

Pressing this key immediately recalls channel 16 from any channel location. Holding the key down recalls the SUB channel (The default setting is channel 9). Pressing this key again reverts to the previous selected working channel.

CLR key

Press this key to cancel a menu selection and/or keypad entry.

⑦ **MIC**/**SP** jack (Top side)

The jack accepts the optional: **MH-73A4B** Submersible Speaker/Microphone; the **SSM-64A** VOX Headset; the **SSM-10A** Submersible Speaker/Microphone; or the **SSM-55A** Earpiece/Microphone. When this jack is used, the internal speaker and microphone are disabled.

⑧ **DATA** jack (Right side)

Use the USB micro type B jack to output the NMEA data, configure the transceiver settings and download the GPS logger data.

⑨ **DISTRESS** key (Right side)

Used to send a DSC Distress Alert. To send the Distress Alert, refer to section "**11.2.1 Transmitting a DSC Distress Alert**".

⑩ Soft keys

The 3 programmable soft keys can be customized using the Setup Menu mode described in section "**14.8 SOFT KEYS**". When one of the soft keys is pressed briefly, the functions will appear above each key on the display.

⑪ Strobe light indicator

When the Emergency feature is activated, this indicator blinks the internationally-recognized Morse Code "S.O.S" message. When the Water Hazard feature is activated, this indicator illuminates if the transceiver is submerged.

⑫ Speaker

The internal speaker is located here.

⑬ Battery pack lock (Bottom side)

Turn the Battery Pack Lock to the "**UNLOCK**" position for battery removal.

8. BASIC OPERATION

NOTE

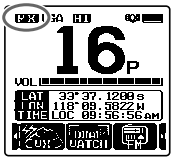
Before operating the **HX891BT** for the first time, it is recommended that you fully charge the battery. See section "**6.1.4 Battery Charging**". for details.

8.1 TURNING THE TRANSCEIVER ON AND OFF

1. Press and hold the ⏻ key on the left side of the radio to turn the radio **ON**.
2. Press and hold the ⏻ key again to turn the radio **OFF**.

8.2 RECEPTION

1. Press the **SQL** key, then press the **CH▼** key until noise is heard from the speaker. This state is known as "squelch OFF".
2. Press the [**VOL−**]/[**VOL+**] key until noise or audio from the speaker is at a comfortable level.
3. Press the **SQL** key, then press the [**CH▲**] key until the random noise disappears. This state is known as the "squelch threshold".
4. Press the [**CH▼**]/[**CH▲**] key to select the desired channel. Refer to the channel chart on Page 102 for available channels.
5. When a signal is received, adjust the volume to the desired listening level. The "**RX**" indicator on the display indicates that communications are being received.



8.3 TRANSMISSION

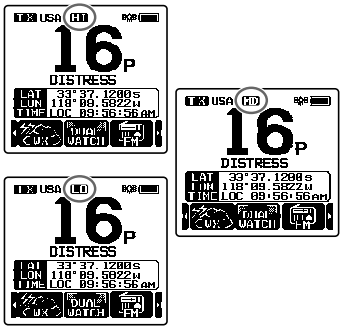
1. Perform steps 1 through 4 of RECEPTION.
2. Before transmitting, monitor the channel to ensure it is clear.
   THIS IS AN FCC REQUIREMENT!
3. Press the **PTT** (push-to-talk) button. The "**TX**" indicator on the LCD is displayed.
4. Speak slowly and clearly into the microphone opening.
5. When the transmission is completed, release the **PTT** button.

8.3.1 Transmit Power

The TX output power of the **HX891BT** is set to high level (6 W (5 W)*) in factory default, and the "**HI**" indicator is displayed at the top of the screen.
To switch the TX output power:

1. Press [◀]/[▶] key repeatedly until the [**TX PWR**] soft key is displayed at the bottom of the screen.
2. Press the [**TX PWR**] soft key to switch between "**HI**" (6 W (5 W)*), "**MD**" (2W), or "**LO**" (1 W) output power.

*(5 W TX required in Some Countries)



NOTE

> When the remaining power of the **SBR-13LI** Battery Pack is low, the **HX891BT** may transmit with the medium or low power, even though the "**HI**" indicator is displayed.

8.4 TRANSMIT TIME-OUT TIMER (TOT)

When the **PTT** button is held down, transmit time is limited to 5 minutes. This limits unintentional transmissions due to a stuck microphone. About 10 seconds before automatic transmitter shutdown, a warning beep will be heard from the speaker(s). The transceiver will automatically go to receive mode, even if the **PTT** button is continually held down. Before transmitting again, the **PTT** button must first be released and then pressed again.

NOTE

> Once the transmitter is shut down by the TOT, transmission to the last channel is only allowed 10 seconds after the shutdown.

8.5 SIMPLEX/DUPLEX CHANNEL USE

Refer to the VHF MARINE CHANNEL CHART (Page 102) for instructions on use of simplex and duplex channels.

NOTE

> All channels are factory-programmed in accordance with FCC (USA), Industry Canada (Canada), and International regulations. Mode of operation cannot be altered from simplex to duplex or vice-versa.

8.6 SELECTING THE CHANNEL GROUP

Set the Channel Group acrrording to the region.

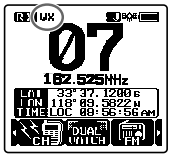
Press and hold MENU/SET key ➡ CH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ CH GROUP (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select desired channel group "**USA**", "**INTL**", or "**CAN**"*.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

*(In the European version, when setting the region, the selected European Channel Group will be displayed instead of "CANADA". For details, refer to the Note on Setting the Region on the separate yellow insert sheet.)

8.7 NOAA WEATHER CHANNELS (In USA and Canada only)

1. To receive a NOAA weather channel, press **[◄]/[►]** key repeatedly until the [**WX**] soft key is displayed at the bottom of the screen.
2. Press the [**WX**] soft key. The "**WX**" indicator appears at the top of the screen.
3. Press the [**CH▼**]/[**CH▲**] key to select a different NOAA weather channel.
4. To exit from the NOAA weather channels, press the [**CH**] soft key. The transceiver returns to the channel it was on prior to a weather channel and the "**WX**" indicator disappears from the display.



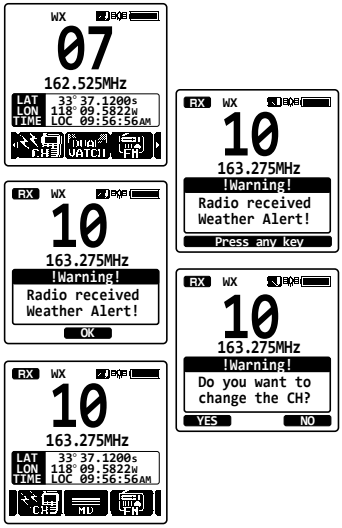
8.7.1 NOAA Weather Alert (USA version only)

In the event of extreme weather disturbances, such as storms and hurricanes, the NOAA (National Oceanic and Atmospheric Administration) sends a weather alert accompanied by a 1050 Hz tone and subsequent weather report on one of the NOAA weather channels.

The **HX891BT** can receive weather alerts when monitoring a weather channel and, on the last selected weather channel during scanning modes or while on another working channel.

When an alert is received on a NOAA weather channel, scanning will stop and the transceiver will emit a loud beep to alert the user of a NOAA broadcast. Press any key to stop the alert. After stopping the beep sound, the weather alert reception confirmation screen will appear. Press [**OK**] to display a confirmation screen. The confirmation screen will ask you whether to move to the weather channel or return in the marine channel. Press [**YES**] to switch to the weather channel, and press [**NO**] to return to the marine channel.

To disable the weather alert function, refer to section "**15.2 WEATHER ALERT (HX891BT USA version only)**".



NOTE

> If no key is pressed the alert will sound for 5 minutes and then the weather report will be received.

8.7.2 NOAA Weather Alert Testing (USA version only)

NOAA tests the alert system ever Wednesday between 11AM and 1PM. To test the **HX891BT**'s NOAA weather feature, setup as in section **8.7.1 NOAA Weather Alert (USA version only)** and confirm the alert is heard on Wednesdays between 11AM and 1PM local time.

8.8 MULTI WATCH (TO PRIORITY CHANNEL)

Multi watch is used to scan two or three channels for communications.

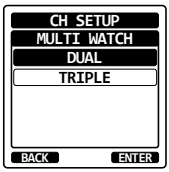
- In Dual Watch, a normal VHF channel and the priority channel are scanned alternately.
- In Triple Watch, a normal VHF channel, the priority channel, and the sub channel are scanned alternately.

When a signal is received on the normal channel the radio briefly switches between the normal channel and the priority channel to look for a transmission. If the radio receives communications on the priority channel the radio stops and listens to priority channel until communication ends and then starts dual or triple watch scan again.

8.8.1 Setting up the Multi Watch Operation

Press and hold MENU/SET key ➡ CH SETUP (CH ▲ / CH ▼ key) ➡ SELECT (— key) ➡ MULTI WATCH (CH ▲ / CH ▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**DUAL**" or "**TRIPLE**".
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.



8.8.2 Starting the Dual Watch

1. Press the **SQL** key, then press the [**CH▼**]/[**CH▲**] key until the background noise disappears.
2. Press the [**CH▼**]/[**CH▲**] key to select a channel you wish to watch.
3. Press [◄]/[►] key repeatedly until the [**DUAL WATCH**] soft key is displayed at the bottom of the screen, press the [**DUAL WATCH**] soft key.
   The radio will monitor the priority channel and the watch channel that was selected in step 2.
   If a signal is received on the watch channel selected in step 2, the **HX891BT** will periodically dual watch to the priority channel.
4. To stop dual watch, press the [◄]/[►] key repeatedly, then press the [**DUAL WATCH**] soft key again.

When selecting "**TRIPLE**" in the CH SETUP menu, [**TRIPLE WATCH**] will be displayed as the soft key instead of [**DUAL WATCH**].

NOTE

> The priority channel may be changed from CH16 (default) to another channel. Refer to section "**15.7 PRIORITY CHANNEL**".

8.9 SCANNING

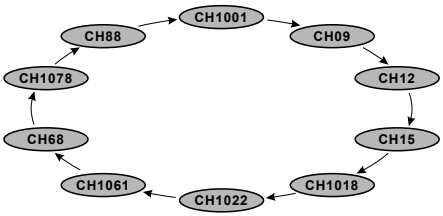
The **HX891BT** will automatically scan channels programmed into the preset channel memory and also the scan channel memory, and the last selected weather channel.

When an incoming signal is detected on one of the channels during scan, the radio will pause on that channel, allowing you to listen to the incoming transmission. The radio will automatically start scanning again after the transmission stops.

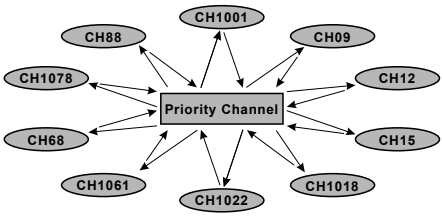
8.9.1 Selecting the Scan Type

Press and hold MENU/SET key ➡ CH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ SCAN TYPE (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**PRIORITY**" or "**MEMORY**".
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.



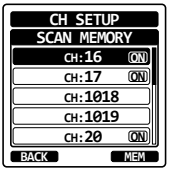
MEMORY SCAN (M-SCAN)



PRIORITY SCAN (P-SCAN)

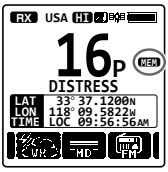
8.9.2 Programming Scan Memory

Press and hold MENU/SET key ➡ CH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ SCAN MEMORY (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select a desired channel to be scanned, then press the [**MEM**] soft keys. The "**ON**" icon will appear at the right side of the selected channel.
2. Repeat step 1 for all the desired channels to be scanned.
3. To REMOVE a channel from the list, select the channel then press the [**MEM**] soft key. The "**ON**" icon of the selected channel will disappear.
4. When you have completed your selections, press the [**CLR**] key to return to radio operation.

To check channels to be scanned, press the [**CH▼**]/[**CH▲**] key repeatedly. The "**MEM**" icon will appear when the memory channel is displayed.



Note: When "**SCAN MEMORY**" is assigned to the soft key, the memory function switches between ON and OFF, each time the [**MEM**] soft key is pressed.

8.9.3 Memory Scanning (M-SCAN)

1. Set the scan type to “**MEMORY**” in the CH SETUP menu (refer to “**8.9.1 Selecting the Scan Type**”).
2. Press the **SQL** key, then press the [**CH▼**]/[**CH▲**] key until background noise disappears.
3. Press the [◀]/[▶] key repeatedly, then press the [**SCAN**] soft key. “**MEM-SCAN**” icon appears on the display. Scanning will proceed from the lowest to the highest programmed channel number and the preset channel (described in the next section). Scanning will stop on a channel when a transmission is received.

   The channel number will blink during reception.
4. To stop scanning, press the [**SCAN**] soft key or [**CLR**] key.

8.9.4 Priority Scanning (P-SCAN)

1. Set the scan type to “**PRIORITY**” in the CH SETUP menu (refer to “**8.9.1 Selecting the Scan Type**”).
2. Press the **SQL** key, then press the [**CH▼**]/[**CH▲**] key until background noise disappears.
3. Press the [◀]/[▶] key repeatedly, then press the [**SCAN**] soft key. “**PRI-SCAN**” icon appears on the display. Scanning will proceed between the memorized channels and preset channel (described in next section) and the priority channel.

   The priority channel will be scanned after each programmed channel.
4. To stop scanning, press the [**SCAN**] soft key or [**CLR**] key.

NOTE

> By default, Channel 16 is set as the priority channel. The priority channel may be reset to another desired channel by using the SETUP menu. Refer to section “**15.7 PRIORITY CHANNEL**”.

8.10 PRESET CHANNELS: INSTANT ACCESS

Ten preset channels can be programmed for instant access. Press the [◀]/[▶] key repeatedly, and then press the [**PRESET**] soft key, to activate the user assigned channel bank. If no channels have been assigned, an alert beep will be emitted from the speaker.
Before beginning the Instant Access operation, assign the “**PRESET**” command into one of the programmable keys, refer to section “**14.8 SOFT KEYS**”.

8.10.1 Programming

1. Press the [**CH▼**]/[**CH▲**] key to select the channel to be programmed.
2. Press the [◀]/[▶] key repeatedly to indicate the function on the display, then press and hold the [**PRESET**] soft key until the "**P-SET**" icon and channel number are blinking.
3. Press the [**ADD**] soft key to program the channel into the preset channel memory. "**P-SET**" icon will appear.

4. Repeat steps 1 through 3 to program all the desired channels into the preset memories. Up to 10 channels can be registered. If you attempt to register the 11th channel, the error beep will sound.

8.10.2 Operation

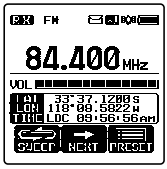
1. Press the [◀]/[▶] key repeatedly, then press the [**PRESET**] soft key to recall the preset channel. The "**P-SET**" icon will appear on the display.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired preset channel.
3. Press the [◀]/[▶] key repeatedly, then press the [**PRESET**] soft key to return to the last selected channel. The "**P-SET**" icon will disappear from the display.

8.10.3 Deletion

1. Press the [◀]/[▶] key repeatedly, then press the [**PRESET**] soft key to recall the preset channel.
2. Press the [**CH▼**]/[**CH▲**] key to select the preset channel to be deleted.
3. Press the [◀]/[▶] key repeatedly, then press and hold the [**PRESET**] soft key until the "**P-SET**" icon and channel number are blinking.
4. Press the [**DELETE**] soft key to delete the channel from the preset channel memory.
5. Repeat steps 2 through 4 to delete the undesired channels from preset memory.
6. To exit from deleting the preset channels, press the [**QUIT**] soft key.

8.11 Listening to the FM Broadcast Radio

The **HX891BT** includes provision for FM broadcast reception.



1. Press the [◄]/[►] key repeatedly, then press the [**FM**] soft key.
2. The FM radio screen will appear, press the [**CH▼**]/[**CH▲**] key to tune the frequency in 100kHz steps.
   Pressing and holding the [**CH▼**]/[**CH▲**] key changes the frequency continuously.
3. To exit from the FM Broadcast Reception mode, press the [**CLR**] key to return to radio operation.

8.11.1 FM broadcast Frequency sweep operation

1. Press the [◄]/[►] key repeatedly, then press the [**FM**] soft key.
2. Press the [**SWEEP**] soft key to start sweep operation.
   Sweeping will proceed from the lowest to the highest frequencies (step 100kHz).
   If the radio receives an FM station, the sweep will stop on the received frequency.
3. When the radio stops on a received FM station, press the [**SWEEP**] soft key again to continue the sweep operation.

8.11.2 Store the FM frequency

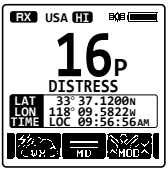
1. While listening in the FM Broadcast receive mode, select the desired FM frequency.
2. Press the [**PRESET**] soft key
   The FM PRESET screen will appear.
3. To edit the frequency, press the [**SELECT**] soft key, or to edit the name tag of the frequency, press the **CH▼** key to select "**NAME**:" then press the [**SELECT**] soft key.
4. Press the [**SELECT**] soft key.
5. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] keys to select the first number or character, then press the [**SELECT**] soft key to step to the next number or character.
6. When inputting the name is complete, press the [**FINISH**] soft key.
7. Press the [**CH▼**]/[**CH▲**] key to select "**SAVE**", then press the [**SELECT**] soft key to store the FM frequency.

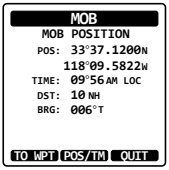
8.11.3 Memory Frequency Recall

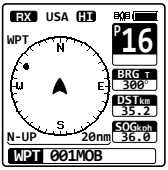
1. Press the [**NEXT**] soft key and repeatedly recall the FM broadcast memories.

8.12 MOB OPERATION

The MOB (Man Over-Board) feature records the position information instantly in case of MOB. This permits reporting and easily navigating to the exact location.







1. Press the [◀]/[▶] key repeatedly, then press the [**MOB**] soft key.
2. Press the [**TO WPT**] soft key to start the navigation to the displayed position. For details about the navigation, see section "**12. NAVIGATION**".
   To modify the displayed position information, press the [**POS**/**TM**] soft key. For details about modifying the position information, see section "**Editing a Waypoint**" (Page 70).
3. To transmit a DSC distress message, lift the red spring-loaded DISTRESS cover on the right side of the transceiver, then press and hold the **DISTRESS** key (see section "**11.2.1 Transmitting a DSC Distress Alert**" for details). The nature of the Distress Alert is automatically set to "**MOB**".

8.13 VOX OPERATION

The **HX891BT** has the VOX (voice-actuated transmit/receive switching) feature, which allows you to transmit and receive hands free by utilizing the optional VOX headset **SSM-64A** (or a compatible device from a third-party vender).

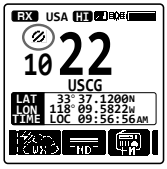
Insert the plug of the VOX headset into the **MIC/SP** jack of the **HX891BT**, then speak into the microphone of the headset to start VOX operation.

The **SSM-64A** is optimized for use with the **HX891BT**, so that it may be used without detailed settings.

When using third-party VOX headset, set up the VOX operation of the **HX891BT** via the SETUP menu. Refer to section "**15.12 VOX OPERATION**" for details.

8.14 VOICE SCRAMBLER

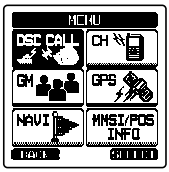
The 4-code type (CVS2500A compatible), or the 32-code type (FVP-42 compatible for Furuno Electric FM-4721) voice scrambler functions are available by configuring optional settings. Refer to the section "**15.11 SCRAMBLER SETUP**" to program the voice scrambler.



1. Select a channel that was programmed for scrambler mode (the "⊘" icon will appear on the display).
2. Monitor the channel before transmitting.
3. Transmit the voice message. The transmission sent will be scrambled.

8.15 OPERATION MENU

The **HX891BT** provides the advanced features listed below, via the "**MENU**" screen that is displayed by pressing the [**MENU/ SET**] key on the front panel.



DSC CALL

The following four types of DSC (Digital Selective Calling) are available: Individual Calling; Group Calling; Position Reporting; and Auto Position Polling.

This menu also provides convenient setting of DSC functions as below:

- Sets the nature of Distress Alert (DIST ALERT MSG)
- Reviews previously received DSC calls (DSC LOG)
- Transmits a test call (DSC TEST)

CH

Exit from the Weather channel, press this menu to return to radio operation.

GM

The GM (Group Monitor) feature performs group polling and displays positions of the group members.

GPS

Current location, course, and speed can be displayed in a numerical or compass style. The position and signal strength of acquired GPS satellites may be displayed.

NAVI

Enables navigation to a memorized or temporarily input waypoint.

MMSI/POS INFO

Input the MMSI (Maritime Mobile Service Identity) before you using DSC.

9. Bluetooth® OPERATION

The **HX891BT** has built-in Bluetooth® functionality. Hands-free operation is possible using the optional Bluetooth® headset (SSM-BT20) or a commercially available Bluetooth® headset.

NOTE

> The operation of all commercially available Bluetooth® headsets cannot be guaranteed.

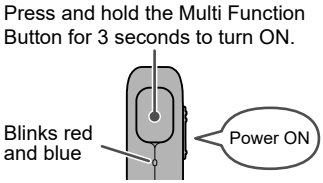
9.1 Pairing the Bluetooth® Headset

When using the Bluetooth® Headset for the first time, the Bluetooth® Headset and the **HX891BT** must be paired.

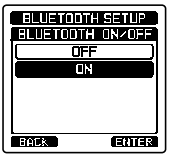
This step is only necessary when first connecting the headset.

1. To start the Bluetooth® headset in pairing mode.

   SSM-BT20: Press and hold the Multi Function Button, until the SSM-BT20 LED blinks red/blue alternately.



2. Press the [**CH▼**]/[**CH▲**] key to select "**ON**", then press the [**ENTER**] soft key.



3. Press the [**CH▼**]/[**CH▲**] key to select "**NEW**", then press the [**SELECT**] soft key.

4. The search begins and the model name of the found Bluetooth® device is displayed in the list.
5. Press the [**CH▼**] or [**CH▲**] key to select the desired Bluetooth® Headset, then press the [**ENTER**] soft key.
   Pairing will start.
   When pairing is complete, "Connected." is displayed.
6. Press the [**OK**] soft key, then [**CLR**] key to return the transceiver to normal operation.
   While connected to a Bluetooth® headset, the "" icon appears on the **HX891BT** screen, and the received audio and operation beep will be heard from the Bluetooth® headset.

9.2 Bluetooth® Headset volume control

Adjust the volume of the Bluetooth® headset with either the [**VOL−**] / [**VOL+**] button on the **HX891BT** or the volume control operation of the Bluetooth® headset.

9.3 Disable Bluetooth® Headset function

To cancel Bluetooth® operation, just repeat the above procedures, selecting "**OFF**" in step 2 above.

9.4 Subsequent Bluetooth® headset connection when the power is turned ON

- When the power is turned OFF while the Bluetooth® headset is connected, the next time the power is turned ON, the same Bluetooth® headset is searched for and automatically connected when found.
- If the Bluetooth® headset cannot be found, the "" icon flashes on the screen. If the power of the same Bluetooth® headset is turned ON in this state, it will connect automatically. If not, turn the **HX891BT** and Bluetooth® headset OFF and then ON again.
- To connect to other Bluetooth® headsets, refer to the "Connect to another paired Bluetooth® headset".

9.5 Transmit operation by pressing the button on the Bluetooth® headset

Pressing the "Call button"* on the Bluetooth® headset once will keep the **HX891BT** in transmit and a call can be made using the Bluetooth® headset.
Press the "Call button"* again to return the **HX891BT** to receive.

*The button name may differ depending on your Bluetooth® headset.

SSM-BT20: When the Multi Function Key is pressed, a beep will sound and the **HX891BT** will continuously transmit.
Press the Multi Function Key again, a beep will sound and the **HX891BT** will return to receive mode.

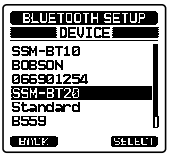
9.6 Hands-free VOX operation with a Bluetooth® headset

When **HX891BT** VOX (Voice operated transmission) function is turned ON, the Bluetooth® headset can perform hands-free operation and transmit automatically just by talking.
Turn the VOX function ON according to "**15.12 VOX OPERATION**".

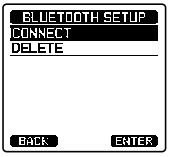
9.7 Connect to another paired Bluetooth® headset

NOTE: When the **HX891BT** is already connected to a Bluetooth® headset, the connection cannot be changed to another headset. First turn OFF the currently connected headset, then try connecting to another headset.

Press and hold MENU/SET key ➡ BLUETOOTH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ DEVICE (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select the desired Bluetooth® Headset, and then press the [**SELECT**] soft key.
2. Select “CONNECT” by pressing the [**CH▼**]/[**CH▲**] key, and then press the [**ENTER**] soft key.
   Pairing will start.
   When pairing is complete, “Connected...” is displayed.
3. Press the [**OK**] soft key, then [**CLR**] key to return the transceiver to normal operation.



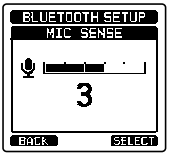
9.8 Remove a registered (paired) Bluetooth® device from the list

Press and hold MENU/SET key ➡ BLUETOOTH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ DEVICE (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the Bluetooth® Headset to be deleted, and then press the [**SELECT**] soft key.
2. Select “DELETE” by pressing the [**CH▼**]/[**CH▲**] key, and then press the [**ENTER**] soft key.
3. Select “OK” by pressing the [**CH▼**]/[**CH▲**] key, and then press the [**ENTER**] soft key.
4. Press the [**CLR**] key to return the transceiver to normal operation.

9.9 Adjust the sensitivity of the Bluetooth® microphone

Press and hold MENU/SET key ➡ BLUETOOTH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ MIC SENSE (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Select Microphone Sensitivity by pressing the [**CH▼**]/[**CH▲**] key, and then press the [**ENTER**]
2. Press the [**CLR**] key to return the transceiver to normal operation.

10. GPS OPERATION

The **HX891BT** has an internal GPS antenna to receive and display the position information. Your position information as well as other station received positions can be stored in memory and utilized later for navigation.

NOTE

> The GPS unit may be turned off, or set to power save mode to increase the battery life, via the SETUP menu. Refer to section "**17. GPS SETUP**".

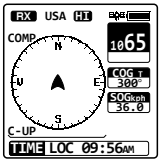
10.1 DISPLAYING POSITION INFORMATION

10.1.1 GPS Information Compass Display

Press [MENU/SET] key ➡ GPS ➡ SELECT ➡ COMPASS

([CH▲] / [CH▼] / [►] / [◄] key) ([−] key) ([CH▲] / [CH▼] key)

1. Press the [**ENTER**] soft key to display the compass display.
2. Press the [**CLR**] key to return to radio operation.
   Note: A soft key may be assigned to immediately switch the screen between the basic display and the compass display by pressing the [**COMP**] soft key.

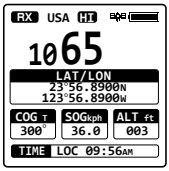


10.1.2 GPS Information Numerical Display

Press [MENU/SET] key ➡ GPS ➡ SELECT ➡ GPS INFO

([CH▲] / [CH▼] / [►] / [◄] key) ([−] key) ([CH▲] / [CH▼] key)

1. Press the [**ENTER**] soft key to reveal the numerical display.
2. Press the [**CLR**] key to return to radio operation.

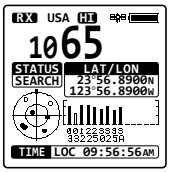


10.2 CHECKING GPS STATUS

Press [MENU/SET] key ➡ GPS ➡ SELECT ➡ GPS STATUS

([CH▲] / [CH▼] / [►] / [◄] key) ([−] key) ([CH▲] / [CH▼] key)

1. Press the [**ENTER**] soft key to display the GPS status currently being received.
2. Press the [**CLR**] key to return to radio operation.



10.3 GPS LOGGER OPERATION

The **HX891BT** includes a position logger that allows recording the GPS location information at periodic intervals.

1. Press the [◄]/[►] key repeatedly, then press the [**LOGGER**] soft key to turn the function ON or OFF.
   The recording starts and the display returns to the previous screen with the " " icon at the top of the display.
   - The log interval time of the recording may be changed via the SETUP menu. Refer to section "**17.12 LOGGER INTERVAL**".

   Notes:
   - The power save operation of the GPS unit is disabled while the logger is activated.
   - To utilize the records, connect the **HX891BT** to a PC and download the log data from the radio by using the PC Programming Software. Refer to section "**22. CONNECTING A USB DATA TERMINAL TO THE PC**".

Logger operation alert:

- When the memory for log data becomes full, three beeps will sound and a warning message will be displayed. Subsequently, the logger does not operate until the log data in the memory is erased.
- If the logger cannot record for some reason, three beeps will sound and a warning message will be displayed. Thereafter, the logger operation ceases.
- When the radio cannot erase the log data in the memory, following a memory-full alert (see above), an error message will be displayed. (Also, in the SETUP menu refer to section "**17.13 LOG ERASE**").

11. DIGITAL SELECTIVE CALLING (DSC)

11.1 GENERAL

WARNING

This **HX891BT** is designed to generate a digital maritime distress and safety call to facilitate search and rescue. This unit will only be effective as a safety device, when it is used within communication range of a shore-based VHF marine channel 70 distress and safety watch system (or another vessel equipped with a compatible DCS transceiver).The range of signal may vary but under normal conditions should be approximately 5 nautical miles.

Digital Selective Calling (DSC) is a semi-automated method of establishing a radio call, it has been designated by the International Maritime Organization (IMO) as an international standard for establishing VHF, MF and HF radio calls. It has also been designated as part of the Global Maritime Distress and Safety System (GMDSS). It is planned that DSC will eventually replace aural watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts.

This system allows mariners to instantly send a Distress Alert with GPS position (when connected to the transceiver) to the Coast Guard and other vessels within range of the transmission. DSC will also allow mariners to initiate or receive Distress, Urgency, Safety, Routine, and Position Report, Automatic Position Polling, and Group calls to or from another vessel equipped with a DSC transceiver.

11.2 DSC DISTRESS ALERT

The **HX891BT** is capable of transmitting and receiving DSC distress messages to all DSC radios. Distress Alert transmissions from the **HX891BT** will include the latitude and longitude of the vessel when the internal GPS unit is activated.

11.2.1 Transmitting a DSC Distress Alert

NOTE

To be able to transmit a DSC Distress Alert an MMSI number must be programmed, refer to section “**6.4.2 Programming the MMSI**”.

Basic Operation

1. Lift the red spring-loaded **DISTRESS cover** on the right side of the transceiver. Press, then press and hold the **DISTRESS** key for 3 seconds. The radio display will count down (3 - 2 - 1) and then transmit the Distress Alert. The backlight of the display and keypad flashes while the radio’s display is counting down.

2. When the distress signal is sent, the transceiver listens on CH70 until an acknowledgment signal is received.
3. If no acknowledgment is received, the Distress Alert is repeated in 4-minute intervals until the Distress Alert Acknowledgment is received.
4. When the Distress Alert Acknowledgment is received, a distress alarm sounds and Channel 16 is automatically selected. The display shows the MMSI of the ship responding to your distress.
5. Press the **PTT** button and state your name, vessel name, number of persons on board and the distress situation, then say “over” and wait for a reply from the acknowledging ship.
6. To turn the distress alarm OFF before the radio retransmits the Distress Alert, press the [**16/S**] key or the [**QUIT**] soft key.

Transmitting the Distress Alert with Nature of Distress

The **HX891BT** is capable of transmitting the Distress Alert with the following “Nature of Distress” categories:

Undesignated, Fire/Explosion, Flooding, Collision, Grounding, Capsizing, Sinking, Adrift, Abandoning, Piracy, Man Overboard

1. Press the [**NATURE**] soft key. The “**NATURE OF**” menu will appear on the display.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired nature of distress category, then press the [**SELECT**] soft key.
3. Press and hold the **DISTRESS** key until a Distress Alert is transmitted.

Transmitting the Distress Alert by Manually Inputting Location and Time

In case the **HX891BT** fails to get a GPS position fix, you may manually input the latitude and longitude, and the time to transmit the Distress Alert.

1. Press the [**POS**/**TM**] soft key.
2. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first number of latitude, then press the [**SELECT**] soft key to step to the next number.
3. Repeat step 2 to set the position and time. If a mistake was made, press the [**CH▼**]/[**CH▲**]/[◄]/[►] keys to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2.

4. When finished programming the position and time, press the [**FINISH**] soft key. The display will return to the previous screen.
5. Press and hold the **DISTRESS** key until the Distress Alert is transmitted.

Pausing the Distress Alert

When the Distress Alert is transmitted, it is repeated every 4 minutes until the Distress Alert is canceled by the user, or until the radio is turned OFF and ON again. The **HX891BT** Distress Alert may be suspended (paused) using the procedure below.

1. After the Distress Alert is transmitted, the radio will show the display as on the right. Looking at this display you will notice "TX IN: 00:15", this is the time when the radio will re-transmit the DSC Distress Alert.
2. To suspend re-transmitting the Distress Alert, press the [**PAUSE**] soft key.
3. To resume counting down to transmit the Distress Alert, press the [**RESUME**] soft key.

Canceling the Distress Alert

If a DSC Distress Alert was sent by error the **HX891BT** allows sending a message to other vessels to cancel the Distress Alert that was made.

1. Press the [**CANCEL**] soft key, then press the [**YES**] soft key.
2. After the cancel message has been transmitted, press the [**OK**] soft key.

11.2.2 Receiving the Distress Alert

1. When the Distress Alert is received, an emergency alarm sounds.
2. Press any key to stop the alarm.
3. Press the **CH▼** key several times to show the information about the vessel in distress.

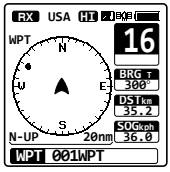
   On the display you will notice 3 soft key selections. These selections are described below:

   ACCEPT: Press this key to accept the Distress Alert and to switch to Channel 16.

   Note: If a key is not pressed for 30 seconds or longer the radio will automatically select Channel 16. (Timer setting time is set in "**16.9 CHANNEL SWITCH TIMER**" from "**16 DSC SETUP**". The default setting is 30 sec.)

   PAUSE: Press this key to temporarily disable automatically switching to Channel 16.

   QUIT: Press this key to quit the automatic Channel 16 switching and revert to the last selected working channel.



4. After accepting the call, press the [**TO WPT**] soft key to set the vessel in distress as a destination for navigation.

   Note: You may change the waypoint name.
5. Press the [**CH▼**]/[**CH▲**] key to select "**SAVE & GO**", then press the [**SELECT**] soft key to return the display to the waypoint screen. The display indicates the distance and direction of the distressed vessel, and also the distressed vessel is indicated on the compass by a dot (●).
6. To stop navigating to a waypoint, press one of the soft keys, then press the [**STOP**] soft key. The radio is switched to the normal mode.

NOTE

- You must continue monitoring Channel 16, as a coast station may require assistance in the rescue attempt.
- When there is an unread Distress Alert, the "✉" icon will appear on the display. You may review the unread Distress Alert from the DSC log, refer to the section "**11.10.2 Reviewing a Logged Distress Alert**".
- Not all DSC radios can receive a DSC distress relay call.

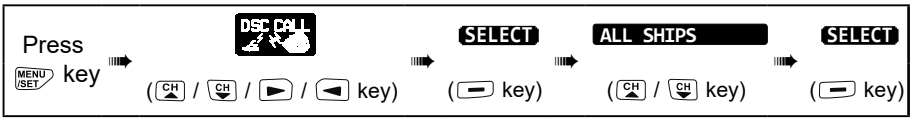
11.3 ALL SHIPS CALL

The all ships call function permits calling DSC equipped vessels without having their MMSI in the individual calling directory. Also, priority for the call can be designated as “Urgency” or “Safety”.

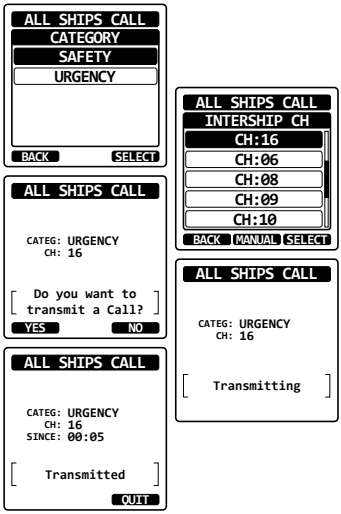
URGENCY Call: This type of call is used when a vessel may not truly be in distress but has a potential problem that may lead to a distress situation. This call is the same as saying “PAN PAN, PAN PAN, PAN PAN” on Channel 16.

SAFETY Call: This type of call is used to transmit boating safety information to other vessels. This message usually contains information about an overdue boat, debris in the water, loss of a navigation aid or an important meteorological message. This call is the same as saying “Securite, Securite, Securite”.

11.3.1 Transmitting an All Ships Call



1. Press the **CH▼/CH▲** key to select the nature of the call (“**SAFETY**” or “**URGENCY**”), then press the **[SELECT]** soft key.
2. Press the **CH▼/CH▲** key to select the operating channel that you choose to communicate on, then press the **[SELECT]** soft key.
3. Press the **[YES]** soft key to transmit the selected type of all ships call.
4. After the all ships call is transmitted, the transceiver will switch to the selected channel.
5. Listen to the channel to make sure it is not busy, then key the microphone and say “PAN PAN, PAN PAN, PAN PAN” or “Securite, Securite, Securite” depending on the priority of the call.
6. Press the **[QUIT]** soft key to exit the all ships call menu.



11.3.2 Receiving an All Ships Call

1. When an all ships call is received, an emergency alarm will sound.
   The display shows the MMSI of the vessel transmitting the all ships call and the radio will change to the requested channel after 30 seconds (the default setting of "**16.9 CHANNEL SWITCH TIMER**").
2. Press any key to stop the alarm.
3. Monitor the requested channel until the all ships voice communication is completed.
   On the display you will notice 3 soft key selections. These selections are described below:

   ACCEPT: Press this key to accept the DSC all ships call and to switch to the requested channel.
   Note: If a key is not pressed for 30 seconds or longer the radio will automatically change to the requested channel (the default setting of "**16.9 CHANNEL SWITCH TIMER**").

   PAUSE: Press this key to temporarily disable automatically switching to the requested channel.
   Note: In some cases, automatically switching to a requested channel might disrupt important ongoing communications. This feature allows commercial users to suspend channel switching and stay on the working channel selected before the all ships call was received.

   QUIT: Press this key to quit the automatic channel switching and revert to the last selected working channel.
4. Press the [**QUIT**] key to return to the channel display.

NOTE

When there is an unread all ships call, the " " icon will appear on the display. You may review the unread all ships call from the DSC log, refer to the section "**11.10.3 Reviewing Other Logged Calls**".

11.4 INDIVIDUAL CALL

This feature allows the **HX891BT** to contact another vessel with a DSC VHF radio and automatically switch the receiving radio to a desired communications channel. This feature is similar to calling a vessel on CH16 and requesting to go to another channel (switching to the channel is private between the two vessels). Up to 100 individual contacts may be programmed.

11.4.1 Setting up the Individual Call Directory

The **HX891BT** has a DSC directory that allows you to store a vessel or person's name and the associated MMSI number you wish to contact via individual calls, position report, and test call transmissions.
To transmit an individual call, this directory must be programed with information of the vessel you wish to call, similar to a cellular phones telephone directory.

Press and hold [MENU /SET] key → DSC SETUP ([CH▲] / [CH▼] key) → SELECT ([—] key) → INDIVIDUAL DIR. ([CH▲] / [CH▼] key) → SELECT ([—] key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**ADD**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select "**NAME:**", then press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to elect the first letter of the name of the vessel or person you want to reference in the directory.
4. Press the [**SELECT**] soft key to store the first letter in the name and step to the next letter to the right.
5. Repeat steps 3 and 4 until the name is complete. The name can consist of up to eleven characters, and if you do not use all eleven characters, select "→" to move to the next space. This method can also be used to enter a blank space in the name.
   If a mistake was made entering in the name, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform steps 3 and 4.
6. After the fifteenth letter or space has been entered, press the [**FINISH**] soft key to advance to the MMSI number entry.
7. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select numbers, 0 - 9. To enter the desired number and move one space to the right by pressing the [**ENTER**] soft key. Repeat this procedure until all nine characters of the MMSI number are entered.
   If a mistake was made entering in the MMSI number, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 7.

8. After the ninth character has been entered, press the [**FINISH**] soft key.
9. To store the entered data, press the [**CH▼**] key to select "**SAVE**", then press the [**SELECT**] soft key.
10. To enter another individual address, repeat steps 1 through 9.
11. Press the [**CLR**] key to return to radio operation.

11.4.2 Setting up the Individual Call Reply

This menu item sets up the radio to automatically, or manually (default setting) respond to a DSC individual call requesting you to switch to a working channel for voice communications. When "**MANUAL**" is selected the MMSI of the calling vessel is shown allowing you to see who is calling. This function is similar to caller id on a cellular phone.

Press and hold MENU/SET key → DSC SETUP (CH▲ / CH▼ key) → SELECT (— key) → INDIVIDUAL REPLY (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**AUTO**" or "**MANUAL**".
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

11.4.3 Enabling the Individual Call Acknowledgment

When the individual reply setting (described in the previous section) is set to "**AUTOMATIC**", the transceiver reply message can be set to "**ABLE**" (default setting) or "**UNABLE**".

Press and hold MENU/SET key → DSC SETUP (CH▲ / CH▼ key) → SELECT (— key) → INDIVIDUAL ACK (CH▲ / CH▼ key) → SELECT (— key)

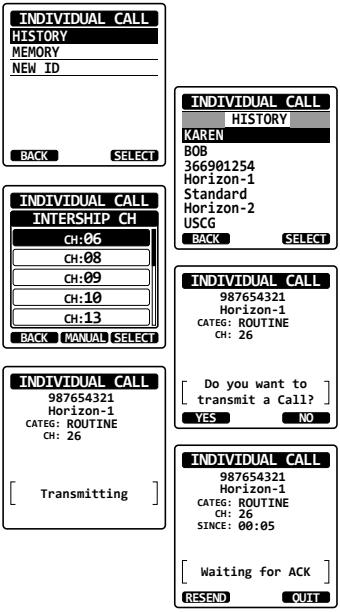
1. Press the [**CH▼**]/[**CH▲**] key to select "**ABLE**" or "**UNABLE**".
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

11.4.4 Transmitting an Individual Call

This feature allows the user to contact another vessel with a DSC radio. This is similar to calling a vessel on CH16 and requesting the operator to go to another working channel.

Individual Call using the Individual/Position Directory

1. Press the [**CH▼**]/[**CH▲**] key to select "**HISTORY**" or "**MEMORY**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select an individual you want to contact, then press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**] key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. To select an operating channel from all the voice channels, press the [**MANUAL**] soft key.
4. Press the [**YES**] soft key to transmit the individual DSC signal.
5. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected on step 3 above and a ringing tone sounds.
6. Press the [**QUIT**] soft key to listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to the other vessel.



Individual Call by Manually Entering a MMSI

An MMSI number to be contacted may be manually entered without storing it in the individual directory.

Press MENU/SET key ➡ DSC CALL ➡ SELECT ➡ INDIVIDUAL ➡ SELECT

(CH▲ / CH▼ / ► / ◄ key) (— key) (CH▲ / CH▼ key) (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**NEW ID**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first number of the MMSI which you want to contact, then press the [**SELECT**] soft key to step to the next number.

3. Repeat step 2 to set the MMSI number (nine digits).
   If a mistake was made entering in the MMSI number, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2.
4. When finished entering the MMSI number, press the [**FINISH**] soft key.
5. Press the [**CH▼**]/[**CH▲**] key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. To select an operating channel from all the voice channels, press the [**MANUAL**] soft key.

6. Press the [**YES**] soft key to transmit the individual DSC signal.
7. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected in step 5 above, and a ringing tone sounds.
8. Press the [**QUIT**] soft key to listen to the channel and make sure it is not busy, then press the **PTT** button and talk into the microphone to the other vessel.

11.4.5 Receiving an Individual Call

When an individual DSC call is received, the radio will automatically respond (default setting) to the calling ship, and switch to the requested channel for voice communications. If you want to see who is calling before replying to the call, change the Call Reply setting to manual. Refer to section "**11.4.2 Setting up the Individual Call Reply**".

Automatic reply:

1. When an individual call is received, an individual call ringing alarm sounds.
   The radio automatically switches to the requested channel.
   The display shows the MMSI of the vessel calling.
2. Press any key to stop the alarm.
3. Monitor the requested channel until the message is completed.
   Press the **PTT** button and talk into the microphone to respond to the calling
4. Press the [**QUIT**] soft key to return the transceiver to normal operation.

Manual reply:

1. When an individual call is received, an individual call ringing alarm sounds.
   The display shows the MMSI of the vessel transmitting the individual call.
2. Press any key to stop the alarm.
3. On the display you will notice 3 soft key selections. These selections are described below:

ACCEPT: Press this key to accept the DSC individual call and automatically switch to the requested channel.

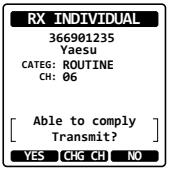
PAUSE: Press this key to temporarily disable automatic switching to the requested channel.

Note: In some cases, automatically switching to a requested channel might disrupt important ongoing communications. This feature allows commercial users to suspend channel switching and continue communications on the working channel selected before the individual call was received.

QUIT: Press this key to quit the automatic channel switching and revert to the last selected working channel.

Note: If a key is not pressed within 30 seconds, the radio will automatically revert to normal operation.

4. To accept and respond to the call, press the [**ABLE**] soft key to switch to the requested channel. (To inform calling vessel that you cannot respond, press the [**UNABLE**] soft key.)
5. Press the [**YES**] soft key to send an acknowledgement.
   Press the [**CHG CH**] soft key to change to another channel for communication instead of the requested one.
6. Monitor the requested or specified channel until the message is completed.
   Press the **PTT** button and talk into the microphone to respond to the calling vessel.
7. Press the [**QUIT**] soft key to return to the channel display.



NOTE

> When there is an unread individual call, the "" icon will appear on the display. You may review the unread individual call from the DSC log, refer to the section **11.10.3 Reviewing Other Logged Calls**.

11.4.6 Setting up the Individual Call Ringer

When an individual call is received the radio's default setting will produce a ringing sound for 2 minutes. This DSC Set Up selection allows the individual call ringer time to be changed.

Press and hold MENU/SET key → DSC SETUP (CH / CH key) → SELECT (— key) → INDIVIDUAL RING (CH / CH key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select ringing time of individual calls.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

The **HX891BT** individual call ringer may be turned ON or OFF.

Press and hold MENU/SET key → DSC SETUP (CH / CH key) → SELECT (— key) → DSC BEEP (CH / CH key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**INDIVIDUAL**", then press the [**SELECT**] soft key
2. Press the [**CH▼**]/[**CH▲**] key to select "**OFF**".
3. Press the [**ENTER**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

To re-enable the ringer tone, repeat the above procedure, pressing the [**CH▼**]/[**CH▲**] key to select "**ON**" in step 2 above.

11.5 GROUP CALL

The Group Call feature allows the user to contact a specific group of vessels (e.g. members of a yacht club) using DSC radios and signal all the group to automatically switch to the designated channel for voice communications. This function is very useful for yacht clubs and vessels traveling together to collectively make announcements on a predetermined channel. Up to 20 group MMSI numbers may be programmed.

11.5.1 Setting up a Group Call

For this function to operate, the same group MMSI (Maritime Mobile Service Identity Number) must be programmed into all the DSC VHF radios within the group of vessels that will be using this feature. To understand Group MMSI programming, first a ship MMSI has to be understood.

Ship MMSI:
This number is assigned by the FCC, or other organization licensed to assign ship MMSI numbers. The first three digits called MID (Mobile Identity Group) of a vessel's MMSI denote the country where the MMSI is registered. The last 6 digits are specific to the ships ID.
Ship MMSI Example: If the MMSI is "366123456", "366" is the MID which denotes the country and "123456" is the ships MMSI.

Group MMSI:
- ❒ Group MMSI numbers are not assigned by the FCC or other organizations licensed to assign ship MMSI numbers.
- ❒ The first digit of a group MMSI is always set to "0" by International rules. All Standard Horizon radios are preset so when programming a group MMSI the first digit is set to "0".
- ❒ The USCG recommends programming the MID of a ship MMSI into the Second, Third and Fourth digits of the group MMSI as it denotes the area the ship is located in.
- ❒ The last 5 digits are decided upon by the members of the group. All radios in the group must contain the same group MMSI so they can be contacted by each other. There is a chance that another group of vessels may program in the same group MMSI. If this happens, simply change one or more of the last 5 digits of the group MMSI.

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (▬ key) ➡ GROUP DIR. (CH▲ / CH▼ key) ➡ SELECT (▬ key)

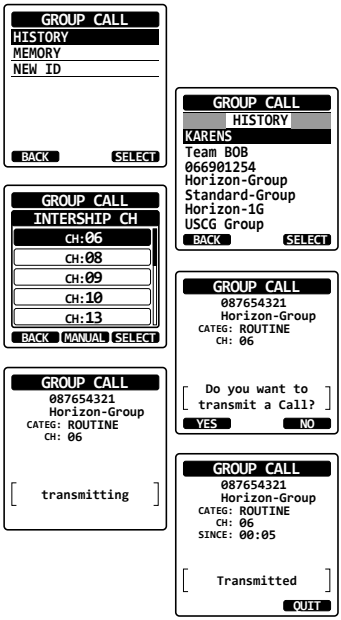
1. Begin by entering a name for the group. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key select "**ADD**".
2. Press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first letter of the name of the group you want to reference in the directory.
4. Press the [**SELECT**] soft key to store the first letter in the name and step to the next letter to the right.
5. Repeat steps 3 and 4 until the name is complete. The name can consist of up to eleven characters, if you do not use all eleven characters, select "→" to move to the next space. This method can also be used to enter a blank space in the name.
   If a mistake was made entering in the name, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform steps 3 and 4.
6. After the fifteenth letter or space has been entered, press the [**FINISH**] soft key to advance to the group MMSI number entry.
7. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the second number of the MMSI (nine digits: the first digit is permanently set to "0") of the group you want to contact, then press the [**SELECT**] soft key to step to the next number. Repeat this procedure until all eight spaces of the MMSI number are entered.
   If a mistake was made entering in the MMSI number, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 7.
8. After the ninth digit has been entered, press the [**FINISH**] soft key to confirm.
9. To store the data, select "**SAVE**", then press the [**SELECT**] soft key.
10. To enter another group address, repeat steps 1 through 9.
11. Press the [**CLR**] key to return to radio operation.

11.5.2 Transmitting a Group Call

Group Call using the Group Directory

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (– key) ➡ GROUP (CH▲ / CH▼ key) ➡ SELECT (– key)

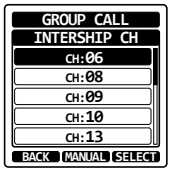
1. Press the [**CH▼**]/[**CH▲**] key to select "**HISTORY**" or "**MEMORY**".
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select a group you want to contact.
3. Press the [**SELECT**] soft key, press the [**CH▼**]/[**CH▲**] key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. To select an operating channels from all the voice channels, press the [**MANUAL**] soft key.
4. Press the [**YES**] soft key to transmit the group call signal.
5. When the group call signal is sent, the display will be as shown in the illustration at the right.
6. After the group call is transmitted, all the radios in the group will switch to the designated channel.
7. Listen to the channel to make sure it is not busy, then press the **PTT** button and call the other vessels you desire to communicate with.



Group Call by Manually Entering an MMSI

This feature allows contacting a group of vessels by manually entering their group MMSI number.

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ GROUP (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key the select "**NEW ID**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the first number of the MMSI (nine digits: the first digit is permanently set to "0") that you want to contact, then press the [**SELECT**] soft key to step to the next number.
3. Repeat step 2 to set the MMSI number.
   If a mistake was made entering in the MMSI number, press the [**CH▼**]/[**CH▲**]/[**◄**]/[**►**] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2.
4. When the MMSI number is complete, press the [**FINISH**] soft key.
5. Press the [**CH▼**]/[**CH▲**] key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. To select an operating channel from all the voice channels, press the [**MANUAL**] soft key.
6. Press the [**YES**] soft key to transmit the group call signal.
7. After the group call is transmitted, all the radios in the group will switch to the designated channel.
8. Listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to communicate the message to the group of vessels.

11.5.3 Receiving a Group Call

1. When a group call is received, the **HX891BT** will sound a ringing alarm.
2. The display will show the group MMSI number.
3. Press any key to stop the alarm.
4. Monitor the channel and listen for the station calling the group with a message.

On the display you will notice 3 soft key selections. These selections are described below:

ACCEPT: Press this key to accept the group call and to switch to the requested channel.

PAUSE: Press this key to temporarily disable automatically switching to the requested channel.

QUIT: Press this key to stop the automatic channel switching and revert to the last selected working channel.

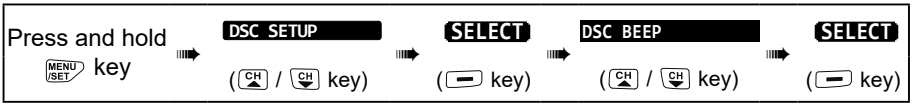
5. If you want to respond, monitor the channel to make sure it is clear, then press the **PTT** button and talk into the microphone to the group of vessels.
6. Press the [**QUIT**] soft key to return to radio operation.
   Note: If a key is not pressed within 30 seconds the radio will automatically return to normal radio operation.

NOTE

> When there is an unread group call, the "✉" icon will appear on the display. You may review the unread group call from the DSC log, refer to the section "**11.10.3 Reviewing Other Logged Calls**".

11.5.4 Setting up the Group Call Ringer

The **HX891BT** group call ringer may be set to ON or OFF with the DSC SETUP Menu:



1. Press the [**CH▼**]/[**CH▲**] key to select "**GROUP**", then press the [**ENTER**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select "**OFF**".
3. Press the [**ENTER**] soft key to store the selected setting.

4. Press the [**CLR**] key to return the transceiver to normal operation.

To re-enable the ringer tone, repeat the above procedure, pressing the [**CH▼**]/[**CH▲**] key to select "**ON**" in step 2 above.

11.6 POSITION REQUEST

Advancements in DSC have made it possible to poll the location of another vessel and show the position of that vessel on the display of the HX891BT. This is a great feature for anyone wanting to know the position of another vessel. For example, your buddy that is catching fish, or has found the location of a person you are cruising with.

NOTE

> To respond to a position request, the vessel must have an operating GPS receiver connected to its DSC radio and must not have its radio set to deny position requests.

11.6.1 Transmitting a Position Request to Another Vessel

Position Request using the Individual/Position Directory

Refer to section "**11.4 INDIVIDUAL CALL**" to enter information into the individual directory.

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ POS REPORT (CH▲ / CH▼ key) ➡ SELECT (— key)

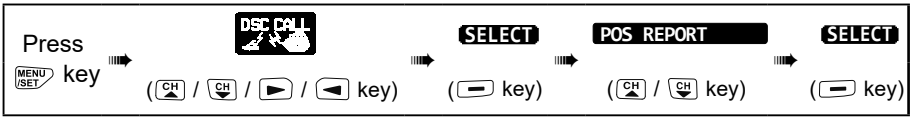
1. Press the **CH▼/CH▲** key to select "**HISTORY**" or "MEMORY", then press the **[SELECT]** soft key.
2. Press the **CH▼/CH▲** key to select a name that was stored in the individual/position directory.
3. Press the **[SELECT]** soft key, then press the **[YES]** soft key to transmit the position request call.
4. When the **HX891BT** receives the position from the polled vessel it is shown on the radio display.
5. Press the **[QUIT]** soft key to return to radio operation.

NOTE

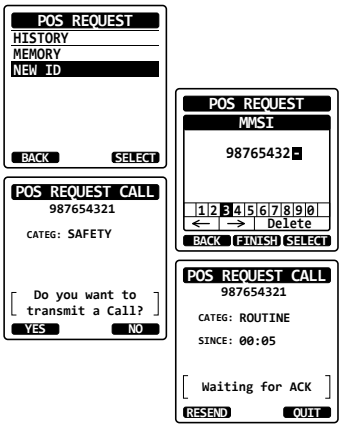
> If the **HX891BT** does not receive position data from the polled vessel, the display will show "NO POSITION DATA".

Position Request by Manually Entering an MMSI

This feature allows you to request the position of a vessel by manually entering the MMSI.



1. Press the **CH▼/CH▲** key to select "**NEW ID**", then press the **[SELECT]** soft key.
2. Press the **CH▼/CH▲** key to select the first number of the MMSI (nine digits) which you want to contact, then press the **[SELECT]** soft key to step to the next number.
3. Repeat step 2 to set the MMSI number.
   If a mistake was made entering in the MMSI number, press the **CH▼/CH▲/◄/►** key to select "←" or "→", press the **[SELECT]** soft key until the wrong character is selected, then perform step 2.



4. When finished entering the MMSI number, press the **[FINISH]** soft key.
5. Press the **[YES]** soft key to transmit the position request DSC call.
6. When the **HX891BT** receives the position from the polled vessel it is shown on the radio display.
7. Press the **[QUIT]** soft key to return to radio operation.

NOTE

> The received position from the polled vessel can be transferred to a GPS chart plotter via NMEA DSC and DSE sentences.

11.6.2 Receiving a Position Request

When a Position Request Call is received from another vessel, a ringing alarm will sound. Operation of this transceiver function differs, depending on the "**POSITION REPLY**" setting in the "**DSC SETUP**" menu. Refer to section "**11.6.4 Setting up Position Reply**".

Automatically reply:

1. When a position request call is received from another vessel, a ringing sound will be produced. Then the requested position coordinates are transmitted automatically to the vessel requesting your vessels position.
2. To exit from Position Request display, press the [**QUIT**] soft key.

Manually reply:

1. When a position request call is received from another vessel, a ringing sound will be produced, and the display will be as shown in the illustration at the right.
2. Press any key to stop the alarm.
3. To send your vessel's position to the requesting vessel, press the [**REPLY**] soft key.
   Or to exit from position request display, press the [**QUIT**] soft key.

4. Press the [**QUIT**] soft key to return to the channel display.

NOTE

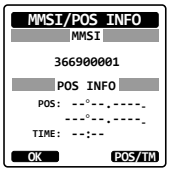
> When there is an unread position request call, the "" icon will appear on the display. To review the unread individual calls from the DSC log, refer to the section "**11.10.3 Reviewing Other Logged Calls**".

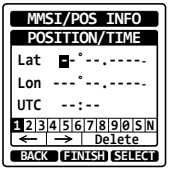
11.6.3 Manual Input of Position Information

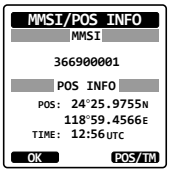
If the **HX891BT** is located in an area where GPS reception is limited, in order to reply to the received position request, you may manually input the location (latitude and longitude) and time to be sent.

Press MENU/SET key ➠ MMSI/POS INFO (CH▲ / CH▼ / ◄ / ► key) ➠ SELECT (▬ key)

1. Press the [**POS/TM**] soft key.
2. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first number of latitude, then press the [**SELECT**] soft key to step to the next number.
3. Repeat step 2 to set the position and time.
   If a mistake was made, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2.
4. When finished programming the position and time, press the [**FINISH**] soft key. The display will return to the previous screen.
5. Press the [**OK**] soft key.
6. Press the [**CLR**] key to return to radio operation.







11.6.4 Setting up Position Reply

The **HX891BT** can be set up to either “automatically” (default setting) or “manually” send your position to another vessel. This selection is important if you are concerned about someone polling the position of your vessel that you may not want to. In the “Manual” mode you will see the MMSI or persons name shown on the display allowing you to choose to send your position to the requesting vessel.

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ POSITION REPLY (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [CH▼]/[CH▲] key to select “**AUTO**” or “**MANUAL**”. In “**AUTO**” mode, after a DSC Position Request is received, the radio will automatically transmit your vessels position. In “**MANUAL**” mode, the display of the radio will show who is requesting the position.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

11.6.5 Setting up a Position Request Ringer

The **HX891BT** position request ringer may to set to ON or OFF.

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ DSC BEEP (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select “**POS REQUEST**”.
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select “**OFF**”.
3. Press the [**ENTER**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

To re-enable the ringer tone, repeat the above procedure, pressing the [**CH▼**]/[**CH▲**] key to select “**ON**” in step 2 above.

11.7 POSITION REPORT

This feature is similar to position request, however instead of requesting a position of another vessel this function allows you to send your position to another vessel.

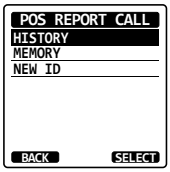
11.7.1 Transmitting a DSC Position Report Call

DSC Position Report Call using the Individual/Position Directory

Refer to section “**11.4 INDIVIDUAL CALL**” to enter information into the individual directory.

Press MENU/SET key ➠ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➠ SELECT (— key) ➠ POS REPORT (CH▲ / CH▼ key) ➠ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**HISTORY**" or "**MEMORY**".
2. Press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**] key to select the intended recipient in the directory, then press the [**SELECT**] soft key.
4. Press the [**YES**] soft key to send your position to the selected vessel.
5. Press the [**QUIT**] soft key to return to radio operation.



DSC Position Report Call by Manually Entering an MMSI

This feature allows you to send your position to another vessel by manually entering the MMSI of intended vessel.

Press MENU/SET key ➠ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➠ SELECT (— key) ➠ POS REPORT (CH▲ / CH▼ key) ➠ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**NEW ID**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the first digit of the MMSI that you want to contact, then press the [**SELECT**] soft key to step to the next digit.
3. Repeat step 2 to complete the MMSI number. If a mistake was made while entering the MMSI number, press the [**CH▼**]/[**CH▲**]/[**◄**]/[**►**] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 2 and enter the correct numeral.

4. When the MMSI number is complete, press the [**FINISH**] soft key.
5. If you want to change the position displayed, press the [**POS/TM**] soft key to go to the position information input screen. After inputting new position information, press the [**FINISH**] soft key to confirm.
6. Press the [**YES**] soft key to send your position to the selected vessel.
7. Press the [**QUIT**] soft key to return to radio operation.

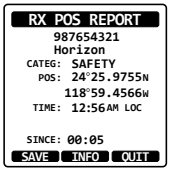
DSC Position Report Call by Manually Input Location and Time

If the **HX891BT** is located in an area where GPS reception is limited and you want to transmit a position report call, you may manually input the location (latitude and longitude) and time to be sent. For details, refer to section "**11.6.3 Manual Input of Position Information**".

11.7.2 Receiving a DSC Position Report Call

When another vessel transmits their vessels location to the **HX891BT** the following will happen:

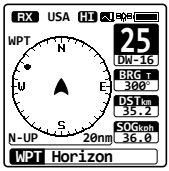
1. When a position report call is received from another vessel, a ringing sound will be produced.
2. Press any key to stop the ringing.
3. Press the [**INFO**] soft key to see more detailed position information of the station.
4. To exit and return to radio mode, press the [**QUIT**] soft key.



11.7.3 Navigating to the Reported Position

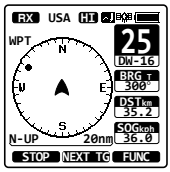
The **HX891BT** has a feature that aids navigation to a received position report call by using the compass display. Navigating to the report call may be enabled by the procedure below.

1. After the position report call has been received, press the [**INFO**] soft key.
2. Press the [**TO WPT**] soft key.
3. To start navigation using the compass display, press the [**CH▼**]/[**CH▲**] key to select "**GOTO**", then press the [**ENTER**] soft key.
   The display indicates the distance and direction of the received vessel, and also the compass indicates the received vessel with a dot (●).



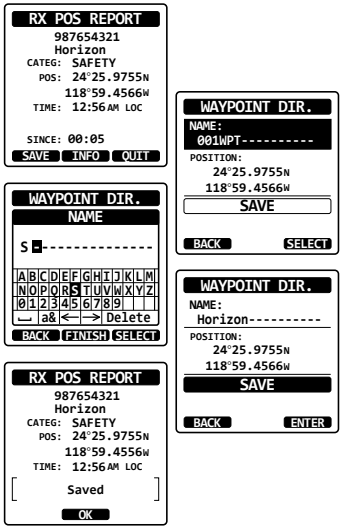
Stopping Navigation to the Reported Position

1. Press one of the soft keys to show the key selections.
2. Press the [**STOP**] soft key. The radio will stop navigating to the waypoint and the normal VHF display will be shown.



11.7.4 Saving the Reported Position as a Waypoint

The **HX891BT** can save a position report call in the radio's memory as a waypoint.



1. After the position report call has been received, press the [**SAVE**] soft key.
2. If you want to change the name of the waypoint, press the [**CH▼**]/[**CH▲**] key to select "**NAME**", then press the [**SELECT**] soft key.
3. Enter the name of the waypoint you want to reference in the directory. For details, refer to "**11.4.1 Setting up the Individual Call Directory**".
4. Press the [**CH▼**]/[**CH▲**] key to select "**SAVE**", then press the [**ENTER**] soft key to save the waypoint into memory.
5. Press the [**OK**] soft key to return to the position report display.

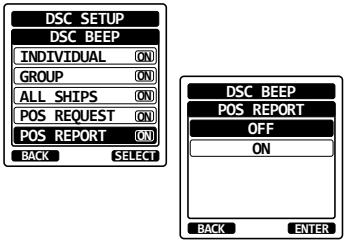
Navigating to a Saved Waypoint

Refer to section "**12. NAVIGATION**" for details.

11.7.5 Setting up a Position Report Ringer

The **HX891BT** position report ringer may be turned OFF:

Press and hold [MENU/SET] key → **DSC SETUP** ([CH▲] / [CH▼] key) → **SELECT** ([—] key) → **DSC BEEP** ([CH▲] / [CH▼] key) → **SELECT** ([—] key)



1. Press the [**CH▼**]/[**CH▲**] key to select "**POS REPORT**".
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select "**OFF**".
3. Press the [**SELECT**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

To re-enable the ringer tone, repeat the above procedure, pressing the [**CH▼**]/[**CH▲**] key to select "**ON**" in the step 2 above.

11.8 AUTO POS POLLING

The **HX891BT** has the capability to automatically track seven vessels programmed into the individual directory, or to automatically send your position information to the programmed stations.

11.8.1 Setting up the Polling Operation

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ AUTO POS POLLING (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired operation (AUTO POS REQUEST and AUTO POS REPORT), and press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

11.8.2 Setting up the Polling Time Interval

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ AUTO POS TIME (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired interval time (30 second, 1, 2, 3, or 5 minutes) and press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

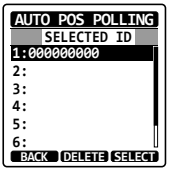
11.8.3 Selecting Vessels to be Automatically Polled

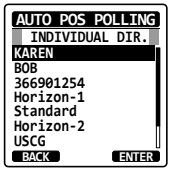
NOTE

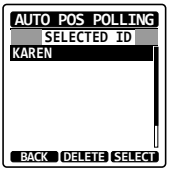
The radio uses the individual directory to select vessels to be automatically polled. Before proceeding, refer to section "**11.4.1 Setting up the Individual Call Directory**" and enter the MMSI of vessels you want to poll before proceeding.

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ AUTO POS POLLING (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**SELECTED ID**", then press the [**SELECT**] soft key.
2. The radio will show a blank row highlighted when you select the vessel for the first time. Press the [**SELECT**] soft key.
3. The radio will show the vessels programmed in the individual directory. Press the [**CH▼**]/[**CH▲**] key to select the desired vessel and press the [**ENTER**] soft key.
4. For more entries, press the [**CH▼**]/[**CH▲**] key to select a blank row, press the [**SELECT**] soft key, then perform step 3.
5. When finished, press the [**CLR**] key to exit to the radio mode.

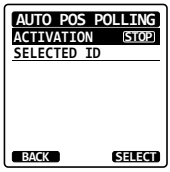


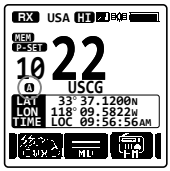




11.8.4 Enabling/Disabling Auto POS Polling

1. Press the [**CH▼**]/[**CH▲**] key to select "**ACTIVATION**", then press the [**SELECT**] soft key.
2. Select "**START**" to enable transmissions or "**STOP**" to disable transmissions.
3. Press the [**ENTER**] soft key.
4. Press the [**CLR**] key to return to radio operation.
5. Auto POS Polling starts and the "**A**" icon will light up on the screen.





11.9 DSC TEST

This function is used to contact another DSC equipped vessel and ensure the DSC functions of the radio are operating.

NOTE

> To use this feature, the radio that will receive the test call must also have the DSC Test feature.

To perform the DSC test, first enter the MMSI of another vessel into the individual directory, or manually enter the MMSI using the procedure below:

11.9.1 Programming MMSI into Individual Directory

Refer to section **11.4.1 Setting up the Individual Call Directory**.

11.9.2 Transmitting a DSC Test to Another Vessel

DSC Test call by using Individual/Position Directory

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC TEST (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**HISTORY**" or "**MEMORY**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the ship name and press the [**SELECT**] soft key.
3. Press the [**YES**] soft key to transmit the DSC test call to the other vessel.
4. Press the [**QUIT**] soft key to return to radio operation.

DSC Test Call by Manually Entering an MMSI

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC TEST (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**NEW ID**" and press the [**SELECT**] soft key.

2. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first digit in the MMSI and press the [**SELECT**] soft key.
3. Repeat step 2 until all the numbers of the MMSI are shown on the display.
4. Press the [**FINISH**] soft key to show the test call page.
5. Press the [**YES**] soft key to transmit the DSC test call to the other vessel.
6. Press the [**QUIT**] soft key to return to radio operation.

NOTE

> After the radio receives a test call reply from the called vessel, the radio will ring and show "**RX TEST CALL**" on the display, which confirms the called radio has received the test message.

11.9.3 Receiving a DSC Test Call

When another vessel transmits a DSC Test call to the **HX891BT** the following will happen:

1. When a DSC Test call is received, the radio will automatically respond to the calling vessel.
2. To exit from the DSC Test call display, press the [**QUIT**] soft key.

11.10 DSC LOG OPERATION

The **HX891BT** logs: transmitted calls; received DSC Distress Alerts; and other calls (individual, group, all ships, etc.), and the "✉" icon will appear on the **HX891BT** display. The DSC log feature is similar to an answer machine where calls are recorded for review. The **HX891BT** can store up to 100 transmitted calls, up to the latest 50 Distress Alerts, and up to the latest 100 other calls (individual, group, all ships, position report, position request ack, test call ack, and polling calls).

NOTE

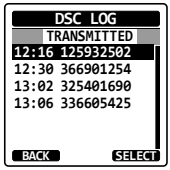
> When the "**DSC LOG**" menu is selected, the **HX891BT** will display high-priority logged call automatically.

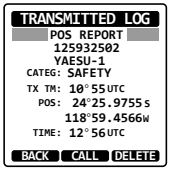
11.10.1 Reviewing and Resending a Transmitted Logged Call

The **HX891BT** allows transmitted logged calls to be reviewed and to resend the call.

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC LOG (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**SELECT**] soft key, then confirm "**TRANSMITTED**" is selected.
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select the station (name or MMSI number) you want to review and/or resend the call.
3. Press the [**SELECT**] soft key to review details for the selected station.
4. Press the [**CALL**] soft key to resend the call or press the [**BACK**] soft key to go back to the DSC transmitted call list.





11.10.2 Reviewing a Logged Distress Alert

The **HX891BT** logged Distress Alert Calls may be reviewed.

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC LOG (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**RX DISTRESS**".
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select the station names or MMSI numbers in the DSC LOG that you want to review and/or relay the Distress Alert to the other vessels.
   Note: When there is an unread received call, the "✉" icon will appear at the left of the call entry.
3. Press the [**SELECT**] soft key to review the details of the selected station.
4. Press the [**INFO**] soft key to display more information or press the [**BACK**] soft key to return to the received Distress Alert list.

11.10.3 Reviewing Other Logged Calls

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC LOG (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**RX OTHER CALL**".
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select the station (name or MMSI number) you want to review and/or call back.
   Note: When there is an unread received call, the "✉" icon will appear at the left of the call entry.
3. Press the [**SELECT**] soft key to review details for the selected station.
4. Press the [**REPLY**] soft key to reply to the call or press the [**BACK**] soft key to return to the received call list.

11.10.4 Deleting Logged Calls from the DSC Log Directory

Press MENU/SET key ➡ DSC CALL (CH▲ / CH▼ / ► / ◄ key) ➡ SELECT (— key) ➡ DSC LOG (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**LOG DELETE**" menu.
2. Press the [**SELECT**] soft key, then press the [**CH▼**]/[**CH▲**] key to select the category ("**TRANSMITTED**", "**RX DISTRESS**", "**RX OTHER CALL**" or "**ALL LOG**") to be deleted.
3. Press the [**SELECT**] soft key.
   The display will show "**Do you want to delete the LOG?**".
4. Press the [**YES**] soft key. (To cancel, press the [**NO**] soft key.)
5. Press the [**CLR**] key to return to radio operation.

NOTE

The procedure above will delete all logged calls of the selected category at one time.
To delete logged calls one by one, review the details of the call you want to delete, then press the [**DELETE**] soft key.

12. NAVIGATION

The **HX891BT** is capable of storing up to 250 waypoints for navigation using the compass page.

You can also navigate to the DSC Distress Alert GPS position, or to a GPS position received from another DSC radio using DSC polling.

12.1 WAYPOINT OPERATION

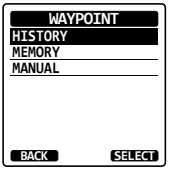
12.1.1 Starting and Stopping Navigation

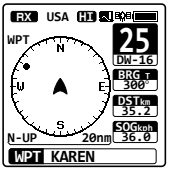
Navigation by Using the Waypoint Directory

Press MENU/SET key ➡ NAVI ➡ SELECT ➡ WAYPOINT ➡ SELECT

(CH▲ / CH▼ / ► / ◄ key) (▬ key) (CH▲ / CH▼ key) (▬ key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired category (“**HISTORY**” or “**MEMORY**”) with , then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select a waypoint, then press the [**SELECT**] soft key. The navigation screen will appear.
   The screen includes the distance and direction to the destination, and the waypoint is indicated by a dot (●) displayed on the compass.
3. Press one of the soft keys, then press the [**STOP**] soft key to stop the navigation.





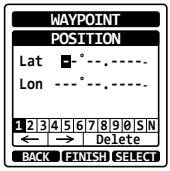
Navigation by Manually Entering a Waypoint

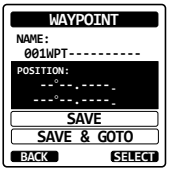
Press MENU/SET key ➡ NAVI ➡ SELECT ➡ WAYPOINT ➡ SELECT

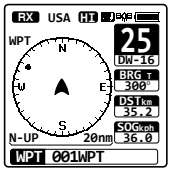
(CH▲ / CH▼ / ► / ◄ key) (▬ key) (CH▲ / CH▼ key) (▬ key)

1. Select “**MANUAL**” with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.

2. If you want to give the waypoint an easy-to-find name, select "**NAME**" with the [**CH▼**]/[**CH▲**] key, press the [**SELECT**] soft key, then enter the name. For details, refer to "**11.4.1 Setting up the Individual Call Directory**".
3. Select "**POSITION**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
4. Press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select the first number of latitude, then press the [**SELECT**] soft key to step to the next number.
5. Repeat step 4 to set the position.







6. If a mistake was entered, press the [**CH▼**]/[**CH▲**]/[◄]/[►] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform step 4.
7. When finished programming the position, press the [**FINISH**] soft key. The display will return to the previous screen.
8. Select "**SAVE & GOTO**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key. The navigation screen will appear.
   The screen includes the distance and direction to the destination, and the waypoint is indicated by a dot (●) inside the compass.
9. Press one of the soft keys, then press the [**STOP**] soft key to stop the navigation.

12.1.2 Setting Up Waypoint Directory

Marking a Position

The current position of the vessel may be marked and stored in the Waypoint Directory.

Press and hold MENU/SET key	➡	WAYPOINT SETUP (CH▲ / CH▼ key)	➡	SELECT (▬ key)	➡	MARK POSITION (CH▲ / CH▼ key)	➡	SELECT (▬ key)

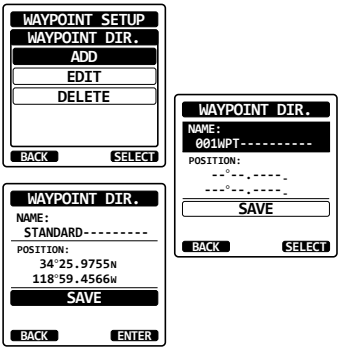
1. Select "**NAME**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Enter the waypoint name by pressing the [**CH▼**]/[**CH▲**] key and the [**SELECT**] soft key. When the name entry is complete, press the [**FINISH**] soft key.
3. If you want to edit the position, select "**POSITION**" with the [**CH▼**]/[**CH▲**] key, press the [**SELECT**] soft key, then enter the new coordinates.

4. When finished editing the position, press the [**FINISH**] soft key.
5. Select "**SAVE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key to save the mark position into memory.
6. Press the [**CLR**] key to return to radio operation.

Adding a Waypoint

Press and hold MENU/SET key → WAYPOINT SETUP (CH▲ / CH▼ key) → SELECT (▬ key) → WAYPOINT DIR. (CH▲ / CH▼ key) → SELECT (▬ key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**ADD**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select "**NAME**", then press the [**SELECT**] soft key.
3. Enter the waypoint name by pressing the [**CH▼**]/[**CH▲**] key and the [**SELECT**] soft key.
   When finished entering the name, press the [**FINISH**] soft key.
4. Press the [**CH▼**]/[**CH▲**] key to select "**POSITION**", press the [**SELECT**] soft key, then enter the coordinates.
   When finished entering the position, press the [**FINISH**] soft key.
5. Select "**SAVE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key to save the waypoint into memory.
6. Press the [**CLR**] key to return to radio operation.

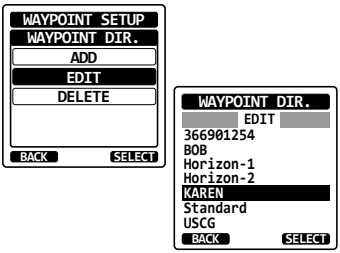


Editing a Waypoint

This function allows a previously entered waypoint to be edited.

Press and hold MENU/SET key → WAYPOINT SETUP (CH▲ / CH▼ key) → SELECT (▬ key) → WAYPOINT DIR. (CH▲ / CH▼ key) → SELECT (▬ key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**EDIT**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the waypoint to be edited, then press the [**SELECT**] soft key to show the waypoint input screen.



3. Select “**NAME**” or “**POSITION**” with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
4. Press the [**CH▼**]/[**CH▲**]/[**◄**]/[**►**] key to select “←” or “→”, press the [**SELECT**] soft key until the character to be changed is selected, then enter a new character.

5. Repeat step 3 through 4 until the waypoint is updated. When finished editing, press the [**FINISH**] soft key.
6. Select “**SAVE**” with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key to store the edited waypoint into memory.
7. Press the [**CLR**] key to return to radio operation.

Deleting a Waypoint

Press and hold [MENU/SET] key ➡ **WAYPOINT SETUP** ([CH▲] / [CH▼] key) ➡ **SELECT** ([−] key) ➡ **WAYPOINT DIR.** ([CH▲] / [CH▼] key) ➡ **SELECT** ([−] key)

1. Press the [**CH▼**]/[**CH▲**] key to select “**DELETE**”, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the waypoint to be deleted, then press the [**SELECT**] soft key.
3. Confirm the waypoint to be deleted, select “**OK**” with the [**CH▼**]/[**CH▲**] key, then press the [**ENTER**] soft key.
4. Press the [**CLR**] key to return to radio operation.

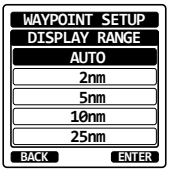
Saving a DSC Position Call as a Waypoint

When a position is received from another DSC radio the **HX891BT** allows the position to be saved as a waypoint.
Refer to section “**11.7.4 Saving the Reported Position as a Waypoint**” for details.

12.1.3 Selecting the Display Range

Use this menu item to set the range on the compass display.

Press and hold [MENU/SET] key ➡ WAYPOINT SETUP ([CH▲] / [CH▼] key) ➡ SELECT ([—] key) ➡ DISPLAY RANGE ([CH▲] / [CH▼] key) ➡ SELECT ([—] key)



1. Press the [**CH▼**]/[**CH▲**] key to select the desired range. (Unit of measure depends on the settings in the GPS SETUP menu. For details, refer to "**17.8 UNITS OF MEASURE**".)
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

12.1.4 Selecting the Arrival Range

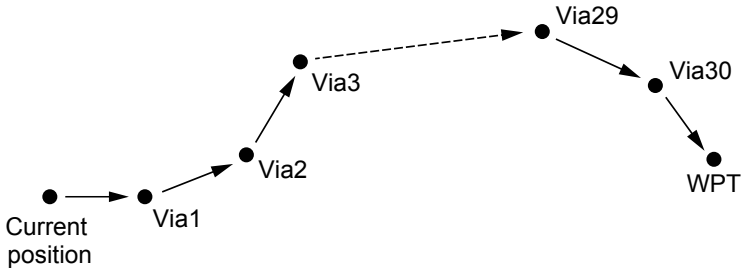
This menu item sets the range within which the **HX891BT** will signal arrival at the destination.

Press and hold [MENU/SET] key ➡ WAYPOINT SETUP ([CH▲] / [CH▼] key) ➡ SELECT ([—] key) ➡ ARRIVAL RANGE ([CH▲] / [CH▼] key) ➡ SELECT ([—] key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired range. (Unit of measure depends on the settings in the GPS SETUP menu.)
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

12.2 ROUTING OPERATION

The **HX891BT** allows setting 1 to 30 waypoints to create a route.



ROUTING TO A WAYPOINT

12.2.1 Setting Up Routing Directory

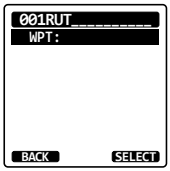
NOTE

> All the destinations and via-points must be programmed as waypoints in the **HX891BT** memory. Refer to section "**12.2.1 Setting Up Waypoint Directory**".

Adding a Route

Press and hold [MENU/SET] key ➡ **WAYPOINT SETUP** (CH▲ / CH▼ key) ➡ **SELECT** (▬ key) ➡ **ROUTE DIR.** (CH▲ / CH▼ key) ➡ **SELECT** (▬ key)

1. Select "**ADD**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Select "**NAME**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
3. Enter a name for the route by pressing the [**CH▼**]/[**CH▲**] key and the [**SELECT**] soft key.
   When the name entry is complete, press the [**FINISH**] soft key.



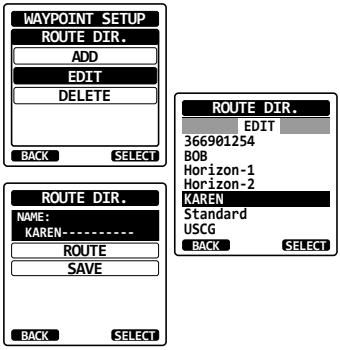
4. Select "**ROUTE**" with the [**CH▼**]/[**CH▲**] key, press the [**SELECT**] soft key.
5. Select "**WPT:**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
6. Press the [**CH▼**]/[**CH▲**] key to select a waypoint, then press the [**SELECT**] soft key.
7. Select "**Via1:**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
8. Press the [**CH▼**]/[**CH▲**] key to select a waypoint, then press the [**SELECT**] soft key.
9. Repeat steps 7 and 8 to add more "**Via…**" waypoints.
10. Press the [**BACK**] soft key.
11. Select "**SAVE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key to store the route into memory.
12. Press the [**CLR**] key to return to radio operation.

Editing a Route

This function allows a previously entered route to be edited.

Press and hold MENU/SET key → WAYPOINT SETUP (CH▲ / CH▼ key) → SELECT (▬ key) → ROUTE DIR. (CH▲ / CH▼ key) → SELECT (▬ key)

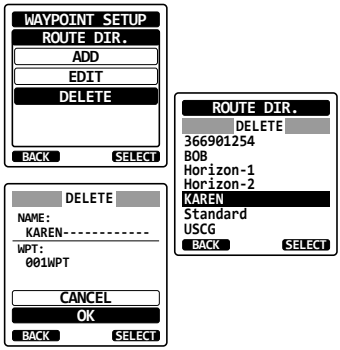
1. Press the [**CH▼**]/[**CH▲**] key to select "**EDIT**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the route to be edited, then press the [**SELECT**] soft key to show the route input display.
3. Perform steps 2 to 10 of the previous page until the route is updated.
4. Select "**SAVE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key to store the edited route into memory.
5. Press the [**CLR**] key to return to radio operation.



Deleting a Route

Press and hold MENU/SET key → WAYPOINT SETUP (CH▲ / CH▼ key) → SELECT (▬ key) → ROUTE DIR. (CH▲ / CH▼ key) → SELECT (▬ key)

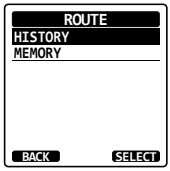
1. Press the [**CH▼**]/[**CH▲**] key to select "**DELETE**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the route to be deleted, then press the [**SELECT**] soft key.
3. Confirm the route to be deleted, select "**OK**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
4. Press the [**CLR**] key to return to radio operation.

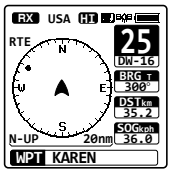


12.2.2 Starting and Stopping Route Navigation

Press MENU/SET key ➡ NAVI ➡ SELECT ➡ ROUTE ➡ SELECT
(CH▲ / CH▼ / ► / ◄ key) (▬ key) (CH▲ / CH▼ key) (▬ key)

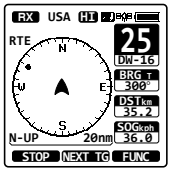
1. Select the desired category ("**HISTORY**" or "**MEMORY**"), then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select a route, then press the [**SELECT**] soft key. The navigation screen with "**RTE**" indicator appears.
3. A message "**ARRIVED**" will appear when you have reached the first target point.
   To start navigation to the next target, press the [**YES**] soft key.
4. To stop the navigation, press [◄]/[►]key, then press the [**STOP**] soft key.
5. Press the [**CLR**] key to return to radio operation.

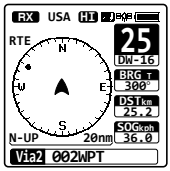




12.2.3 Changing the Destination

1. On the navigation screen, press one of the soft keys, then press the [**NEXT TG**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired destination.
3. Press the [**ENTER**] soft key. The navigation screen with a new destination appears.





12.2.4 Selecting Automatic or Manual Routing

Use this selection to start navigation to the next target automatically or manually when your vessel has arrived at a target point.

Press and hold MENU/SET key ➡ WAYPOINT SETUP ➡ SELECT ➡ ROUTING OPERATION ➡ SELECT
(CH▲ / CH▼ key) (▬ key) (CH▲ / CH▼ key) (▬ key)

1. Select "**AUTO**" or "**MANUAL**" with the [**CH▼**]/[**CH▲**] key, then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

13. GM OPERATION

The GM (Group Monitor) feature of the **HX891BT** utilizes the same system as the DSC Group call and Auto Position Polling, to display the group members' locations.

13.1 SETTING UP GM OPERATION

The **HX891BT** is capable of storing up to 10 groups with 1 to 9 members each.

13.1.1 Setting Up Group Directory

NOTE

- For this function to operate, the same group MMSI must be programmed into each transceiver of group members to be monitored. Refer to section "**11.5.1 Setting up a Group Call**" for details.
- Group members for GM operation can only be selected from the Individual/Position Call directory, therefore all members that you want to monitor must be stored in the directory. Refer to section "**11.4.1 Setting up the Individual Call Directory**" for details.

Press and hold [MENU/SET] key → GM SETUP ([CH▲] / [CH▼] key) → SELECT ([—] key) → GM GROUP DIR. ([CH▲] / [CH▼] key) → SELECT ([—] key)

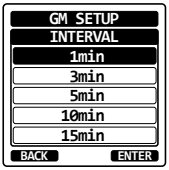
1. Select "**ADD**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Select "**NAME**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
3. Enter a name for the route by pressing the [**CH▼**]/[**CH▲**] key and the [**SELECT**] soft key.
   When finished entering the name, press the [**FINISH**] soft key.
4. Select "**GM ID**" with the [**CH▼**]/[**CH▲**] key, press the [**SELECT**] soft key, then enter the group MMSI number.
   When finished entering the MMSI, press the [**FINISH**] soft key.
5. Select "**MEMBERS**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.

6. Press the [**CH▼**]/[**CH▲**] key to select a list number, then press the [**SELECT**] soft key.
7. Press the [**CH▼**]/[**CH▲**] key to select a member from the Individual directory, then press the [**SELECT**] soft key.
8. Repeat steps 6 and 7 to add members to the group.
9. Press the [**BACK**] soft key to return to the "**NAME**" and "**GM ID**" screen.
10. To store the data, select "**SAVE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
11. To enter other group directories, repeat steps 5 through 10.
12. Press the [**CLR**] key to return to radio operation.

13.1.2 Setting Up the Polling Time Interval

Press and hold MENU/SET key → GM SETUP (CH▲ / CH▼ key) → SELECT (— key) → INTERVAL (CH▲ / CH▼ key) → SELECT (— key)

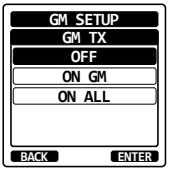
1. Press the [**CH▼**]/[**CH▲**] key to select the desired interval time, then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.



13.1.3 Enabling/Disabling Transmission during GM Operation

Press and hold MENU/SET key → GM SETUP (CH▲ / CH▼ key) → SELECT (— key) → GM TX (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired transmission type, then press the [**ENTER**] soft key.
   OFF: Disables the transmission during GM operation.
   ON GM: Enables the transmission during the GM target display.
   ON ALL: Enables the transmission during the GM operation.
2. Press the [**CLR**] key to return to radio operation.



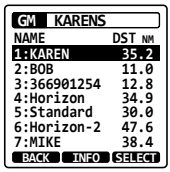
13.2 STARTING GM OPERATION

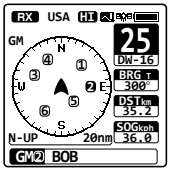
Press [MENU/SET] key ➠ [GM] ([CH▲] / [CH▼] / [►] / [◄] key) ➠ [SELECT] ([▬] key)

1. Select a group you want to monitor with the [**CH▼**]/[**CH▲**] key, then press the [**ENTER**] soft key.
   The GM operation starts and the GM target display appears.
2. Press the [**CLR**] key to return to radio operation.

13.2.1 Transmitting a DSC Call to a Group Member

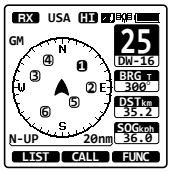
1. Press one of the soft keys while the GM target is displayed, then press the [**LIST**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select a member you want to call, then press the [**SELECT**] soft key.
3. Press [◄]/[►] key, then press the [**CALL**] soft key to transmit a DSC Individual call to the selected member.
4. Press the [**CH▼**]/[**CH▲**] key to select the operating channel you want to communicate on, then press the [**SELECT**] soft key. To select an operating channel from all the voice channels, press the [**MANUAL**] soft key.
5. Press the [**YES**] soft key to transmit the individual DSC signal.
6. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected in step 4 above, and a ringing tone sounds.
7. Press the [**QUIT**] soft key to listen to the channel and make sure it is not busy, then press the **PTT** button and talk into the microphone to the other vessel.

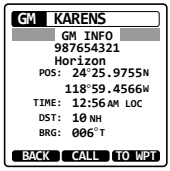


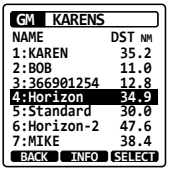


13.2.2 Starting Navigation to a Group Member

1. Press one of the soft keys while the GM target is displayed, then press the [**LIST**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select a member you want to approach, then press the [**SELECT**] key.
3. Press the [**TO WPT**] soft key to start navigation to the selected member. (Press the [**BACK**] soft key twice to cancel and return to the GM target display.)







14. CONFIGURATION SETUP

14.1 DISPLAY MODE

The display screen can be set for day time or night time operating.

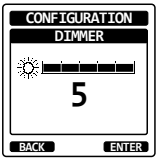
Press and hold [MENU/SET] key → CONFIGURATION (CH▲ / CH▼ key) → SELECT (— key) → DISPLAY MODE (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired LCD screen setting:
   DAY MODE: Normal display mode.
   NIGHT MODE: Low brightness display mode for night use.

14.2 DIMMER ADJUSTMENT

This menu selection adjusts the backlight intensity.

Press and hold [MENU/SET] key → CONFIGURATION (CH▲ / CH▼ key) → SELECT (— key) → DIMMER (CH▲ / CH▼ key) → SELECT (— key)

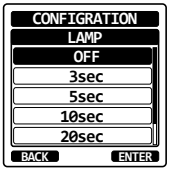


1. Press the [**CH▼**]/[**CH▲**] key to select the backlight level (“5” is default). When “**OFF**” is selected, the backlight is turned OFF.
2. Press the [**ENTER**] soft key to store the selection.
3. Press the [**CLR**] key to return to radio operation.

14.3 LAMP

This menu selection is used to setup the illumination time of the display and keypad.

Press and hold [MENU/SET] key → CONFIGURATION (CH▲ / CH▼ key) → SELECT (— key) → LAMP (CH▲ / CH▼ key) → SELECT (— key)

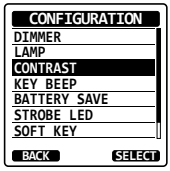


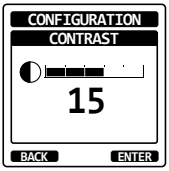
1. Press the [**CH▼**]/[**CH▲**] key to select the desired time (“3sec” is default).
   OFF: Disables the display/keypad lamp illumination.
   3/5/10/20/30sec: Illuminates the display/keypad for the selected time when you press any key (except the **PTT** switch).
   CONTINUOUS: Illuminates the display/keypad continuously.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

14.4 DISPLAY CONTRAST

The display contrast can be adjusted to suit your operation environment.

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ CONTRAST (CH▲ / CH▼ key) ➡ SELECT (— key)



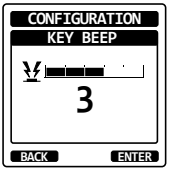


1. Press the [**CH▼**]/[**CH▲**] key to select the desired contrast from "**00**" to "**30**" ("10" is default).
2. Press the [**ENTER**] soft key to store the selected level.
3. Press the [**CLR**] key to return to radio operation.

14.5 KEY BEEP

Use this selection to adjust the beep tone volume level when a key is pressed.

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ KEY BEEP (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select the desired level from ("3" is default): "**1**" to "**5**", or "**OFF**".
2. Press the [**ENTER**] soft key to store the selected level.
3. Press the [**CLR**] key to return to radio operation.

14.6 BATTERY SAVER

This function allows changing change the battery save mode setting.

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ BATTERY SAVE (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired battery save setting from: "**OFF**", "**50%**", "**70%**", "**80%**", or "**90%**".
   50% = ON for 0.1sec / OFF for 0.1sec.
   70% = ON for 0.1sec / OFF for 0.25sec. (Default setting)
   80% = ON for 0.1sec / OFF for 0.45sec.
   90% = ON for 0.1sec / OFF for 0.9sec.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

14.7 STROBE LED

Use this selection to set the emergency strobe LED operation.

14.7.1 Emergency LED

Press and hold [MENU/SET] key ➡ CONFIGURATION ([CH▲] / [CH▼] key) ➡ SELECT ([—] key) ➡ STROBE LED ([CH▲] / [CH▼] key) ➡ SELECT ([—] key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**EMERGENCY LED**" (default setting), then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired setting. You can select one from: "**CONTINIOUS**" (default setting), "**SOS**", "**BLINK 1**", "**BLINK 2**", or "**BLINK 3**".
3. Press the [**ENTER**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

14.7.2 Water Hazard LED

Press and hold [MENU/SET] key ➡ CONFIGURATION ([CH▲] / [CH▼] key) ➡ SELECT ([—] key) ➡ STROBE LED ([CH▲] / [CH▼] key) ➡ SELECT ([—] key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**WATER HAZARD LED**", then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired setting. You can select one from: "**OFF**", "**ON**", or "**ON/PWR ON**".

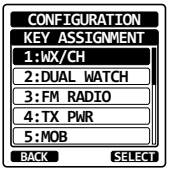
   OFF: The LED does not light up.
   ON: The LED lights up. (Default setting)
   ON/PWR ON: The LED lights up and the transceiver turns ON even if the transceiver is OFF.
3. Press the [**ENTER**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

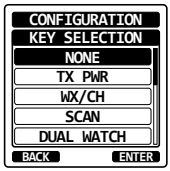
14.8 SOFT KEYS

Use this menu to make soft key assignments and to set how long the display will show the soft key icon after a soft key is pressed.

14.8.1 Key Assignment

Press and hold [MENU/SET] key ➡ CONFIGURATION ([CH▲] / [CH▼] key) ➡ SELECT ([—] key) ➡ SOFT KEY ([CH▲] / [CH▼] key) ➡ SELECT ([—] key)





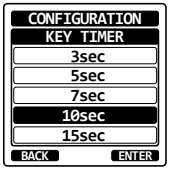
1. Select "**KEY ASSIGNMENT**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the key number to be programmed, and press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**] key to select a new function to be assigned to the soft key, and press the [**ENTER**] soft key. Available functions are listed below. By selecting "**NONE**" the soft key assignment is removed.
4. Repeat steps 2 and 3 to program other soft keys. Choose from the 18 functions that may be assigned.
5. Press the [**CLR**] key to return to radio operation.

DISPLAY	FUNCTION	SOFT KEY NUMBERS ASSIGNED AS DEFAULT
NONE	–	
TX PWR	Changes transmit power.	4
WX/CH	Switches channels between weather and marine.	1 (HX891BT)
SCAN	Turns scanning function ON or OFF.	7
DUAL WATCH	Turns dual or triple watch scan function ON or OFF.	2
WPT MARK	Marks the current position for a "Waypoint".	12
COMPASS	Enables the "Compass" display.	
WAYPOINT	Enables the Waypoint Navigation.	8
MOB	Marks the position where a person falls overboard.	5
SCAN MEMORY	Add or remove channels from memory channel scan.	6
PRESET	Programs or deletes the preset memory channel.	9 (HX891BT) 1 (HX891BT/E)
STROBE	Turns the strobe light LED ON or OFF.	10
CH NAME	Edit channel names.	
LOGGER	Starts and stops logging position data.	11
NOISE CANCEL	Enables the noise canceling settings display.	9 (HX891BT/E)
FM RADIO	Starts the FM Broadcast radio receiver.	3
BACKLIT	Enables the Display Mode.	

14.8.2 Key Timer

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (▬ key) ➡ SOFT KEY (CH▲ / CH▼ key) ➡ SELECT (▬ key)

1. Select "**KEY TIMER**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select the desired time ("10sec" is default).
3. Press the [**ENTER**] soft key to store the selected setting.
4. Press the [**CLR**] key to return to radio operation.

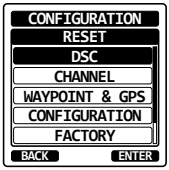


14.9 RESET

The memories and settings of the setup categories may be initialized independently, or the transceiver may be reset to the original factory default settings.

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (▬ key) ➡ RESET (CH▲ / CH▼ key) ➡ SELECT (▬ key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired category from: "**DSC**", "**CHANNEL**", "**WAYPOINT & GPS**", "**CONFIGURATION**", "**FACTORY**" (all settings*1 except the "MMSI", "ATIS"*2 and "Vessel Information" will be initialized), "**USER MMSI**", or "**ATIS CODE**"*2.
   *1(The Individual Directory and the GPS Log also eliminated.)
   *2(HX891BT/E only)
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.



14.10 SUMMARY OF THE CONFIGURATION SETUP

ITEM	DESCRIPTION	DEFAULT VALUE
DISPLAY MODE	Toggles LCD display mode between daytime and nighttime mode	DAY MODE
DIMMER	Adjusts the backlight level of the LCD and keypad	5
LAMP	Selects the illumination time of the LCD and keypad backlights.	3 sec
CONTRAST	Adjusts the contrast of the LCD	15
KEY BEEP	Adjusts the volume of beep tone when a key is pressed.	3
BATTERY SAVE	Selects the battery save mode.	50%
STROBE LED	Sets the operation of the EMERGENCY LED.	CONTINUOUS
	Sets the operation of the WATER HAZARD LED.	ON
SOFT KEY	Sets the assignment of the soft keys.	–
	Sets the display time of the soft keys.	10 sec
RESET	Initializes the memories and settings.	–

15. CHANNEL FUNCTION SETUP

15.1 CHANNEL GROUP

This menu item permits setting the channel group to USA, International or Canada maritime channel group assignments.
Refer to section "**8.6 SELECTING THE CHANNEL GROUP**" for details.

15.2 WEATHER ALERT (HX891BT USA version only)

Enables/disables the NOAA Weather Alert function. The default setting is "OFF".

Press and hold MENU/SET key → CH SETUP (CH▲ / CH▼ key) → SELECT (— key) → WX ALERT ON (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**ON**" or "**OFF**".
2. Press the [**ENTER**] soft key to store the selected level.
3. Press the [**CLR**] key to return to radio operation.

15.3 SCAN MEMORY

To be able to scan channels, the radio must be programmed. This section describes how to store channels in scan memory.
Refer to section "**8.9.2 Programming Scan Memory**" for details.

15.4 SCAN TYPE

Scanning may be set to either "Memory Scan" or "Priority Scan". The default setting is "Priority Scan".
Refer to section "**8.9.1 Selecting the Scan Type**" for details.

15.5 SCAN RESUME

Selects the time that scanning is paused after a received signal ends before the radio starts to scan channels again. The default setting is 2 seconds.

Press and hold MENU/SET key → CH SETUP (CH▲ / CH▼ key) → SELECT (— key) → SCAN RESUME (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired resume time, default is 2 seconds. The resume time can be set to "1sec" through "5sec".
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

15.6 WATCH TYPE

This selects between "Dual Watch" and "Triple Watch". The default setting is "Dual Watch".
Refer to section "**8.8 MULTI WATCH (TO PRIORITY CHANNEL)**" for details.

15.7 PRIORITY CHANNEL

This procedure permits setting a different priority channel to be used when priority scanning. By default, the radio priority channel is set to Channel 16.

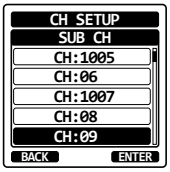
Press and hold MENU/SET key	➡	CH SETUP (CH▲ / CH▼ key)	➡	SELECT (— key)	➡	PRIORITY CH (CH▲ / CH▼ key)	➡	SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired priority channel.
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

15.8 SUB CHANNEL

By default, the sub channel is set to Channel 9. This procedure allows assignment of a different sub channel for instant access.

Press and hold MENU/SET key	➡	CH SETUP (CH▲ / CH▼ key)	➡	SELECT (— key)	➡	SUB CH (CH▲ / CH▼ key)	➡	SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select another channel to designate as sub channel.
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

15.9 CHANNEL NAME

When the **HX891BT** “Normal” mode is selected, the display will show a name under the channel number. This name describes the use of the channel. The channel names may be customized using the below procedure.

Example: CH69 “PLEASURE” to “HOOKUP”

Press and hold MENU/SET key	➡	CH SETUP (CH▲ / CH▼ key)	➡	SELECT (— key)	➡	CH NAME (CH▲ / CH▼ key)	➡	SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the channel to renamed, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to scroll to the first letter of the new channel name.
3. Press the [**SELECT**] soft key to store the first letter of the name and step to the next letter to the right.

4. Repeat step 2 and 3 until the name is complete. The name can consist of up to 15 characters, if you do not use all 15 characters, select "→" to move to the next space.
   This method can also be used to enter a blank space in the name.
   If a mistake was made entering the channel name, press the [**CH▼**]/[**CH▲**]/[**◀**]/[**▶**] key to select "←" or "→", press the [**SELECT**] soft key until the wrong character is selected, then perform steps 2 and 3.
5. Press the [**FINISH**] soft key to save the name.
6. To enter the name of another channel, repeat the steps 1 through 5.
7. Press the [**CLR**] key to return to radio operation.

NOTE

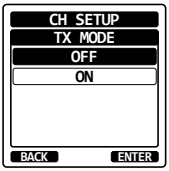
When "**CHANNEL NAME**" is assigned to a soft key, the channel name input may be displayed directly by pressing the [**NAME**] soft key during radio operation.

15.10 NOISE CANCELLATION

Independently enables/disables the Noise-canceling function of the transmitter and the receiver.

Press and hold [MENU/SET] key ➡ CH SETUP (▲ / ▼ key) ➡ SELECT (▬ key) ➡ NOISE CANCEL (▲ / ▼ key) ➡ SELECT (▬ key)

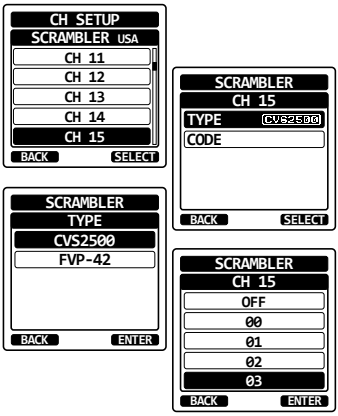
1. Select "**TX MODE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select "**ON**" or "**OFF**", then press the [**ENTER**] soft key.
3. Select "**RX MODE**" with the [**CH▼**]/[**CH▲**] key, then press the [**SELECT**] soft key.
4. Select the noise cancelling level from "**LEVEL 1**" through "**LEVEL 4**" or "**OFF**" with the [**CH▼**]/[**CH▲**] key, then press the [**ENTER**] soft key.
5. Press the [**CLR**] key to return to radio operation.



15.11 SCRAMBLER SETUP

Configure the voice scrambler setting. Two types of voice scrambler functions are available: the 4-code type (CVS2500A compatible) and the 32-code type (FVP-42 compatible for Furuno Electric FM-4721) (The scrambler is not available for CH16 and CH70).

Press and hold MENU/SET key ➡ CH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ SCRAMBLER (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select the channel to be scrambled, then press the [**SELECT**] soft key.
2. Press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**] key to select "**CVS2500**" or "**FVP-42**", then press the [**ENTER**] soft key.
4. Press the [**CH▼**]/[**CH▲**] key to select "**CODE**", then press the [**SELECT**] soft key.
5. Press the [**CH▼**]/[**CH▲**] key to select the scrambler code. The scrambler code can be set from "**00**" to "**03**" or "**OFF**" (When "**FVP-42**" is selected in step 3, the scrambler code can be set from "**00**" to "**31**" or "**OFF**"). When "**OFF**" is selected the voice scrambler is disabled.
6. Press the [**ENTER**] soft key to store the selected code.
7. Press the [**ENTER**] soft key, then repeat steps 1 through 6 to set other channels.
8. Press the [**CLR**] key to return to radio operation.

15.12 VOX OPERATION

The procedures below allow you to set up the VOX operation when utilizing an optional VOX headset purchased from a third-party vendor.

15.12.1 Enabling the VOX Operation

Press and hold MENU/SET key ➡ CH SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ VOX (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**ON**" or "**OFF**", then press the [**ENTER**] soft key to store the new setting.
2. Press the [**CLR**] key to return to radio operation.

15.12.2 Setting the VOX Level

Press and hold MENU/SET key → CH SETUP (CH ▲ / CH ▼ key) → SELECT (— key) → VOX LEVEL (CH ▲ / CH ▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired activation level.
   The level can be set from "**0**" to "**4**" ("**2**" is default).
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

NOTE

During setup the VOX level can be seen directly by speaking into the microphone while the VOX operation is enabled.

15.12.3 Setting the VOX Delay Time

Press and hold MENU/SET key → CH SETUP (CH ▲ / CH ▼ key) → SELECT (— key) → VOX DELAY (CH ▲ / CH ▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired VOX delay time from "**0.5sec**", "**1.0sec**", "**1.5sec**", "**2.0sec**" or "**3.0sec**" ("1.5sec" is default). .
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

15.13 AUDIO FILTER OPERATION

This menu item allows selecting the internal audio filter for most comfortable listening.

Press and hold MENU/SET key → CH SETUP (CH ▲ / CH ▼ key) → SELECT (— key) → AF PITCH (CH ▲ / CH ▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired filter operation.
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

15.14 SUMMARY OF THE CHANNEL FUNCTION SETUP

ITEM	DESCRIPTION	DEFAULT VALUE
CH GROUP	Selects the channel group	USA: USA version INTL: Europe version
WX ALERT	Turns the Weather Alert function ON or OFF	OFF
SCAN MEMORY	Add or remove a Scan Memory channel	–
SCAN TYPE	Select priority scan or memory scan	PRIORITY
SCAN RESUME	Sets the scanning resume time	2sec
MULTI WATCH	Selects Dual Watch or Triple Watch	DUAL
PRIORITY CH	Selects a priority channel	CH16
SUB CH	Selects a Sub Channel	CH09
CH NAME	Edit the name of memory channels	–
NOISE CANCEL	the noise cancelling function ON or OFF (Set independently for transmit and receive)	OFF
SCRAMBLER	Configures the secret communication settings	TYPE: CVS2500 CODE: OFF
VOX	Turn on or off the VOX function	OFF
VOX LEVEL	Selects the VOX gain	2
VOX DELAY	Selects the VOX delay time	1.5sec
AF PITCH	Selects the audio filter operation	Normal

16. DSC SETUP

16.1 INDIVIDUAL DIRECTORY

The **HX891BT** has a DSC directory where the names of vessels or persons, and the associated MMSI that you wish to contact via Individual Calls, Position Requests and Position Report transmissions, may be stored in memory.
To transmit an Individual Call, this directory must be programed with information of the vessel you wish to contact, similar to a cellular phone's telephone directory.
Refer to section "**11.4.1 Setting up the Individual Call Directory**" for details.

16.2 INDIVIDUAL REPLY

The radio can be setup to automatically (default setting) or manually respond to a DSC Individual call that requests you to switch to a working channel for voice communications. When "**MANUAL**" is selected the MMSI of the calling vessel is shown on the display allowing you to see who is calling and decide if you want to switch to the working channel and reply. This function is similar to caller id on a cellular phone.
Refer to section "**11.4.2 Setting up the Individual Call Reply**" for details.

16.3 INDIVIDUAL ACKNOWLEDGMENT

The radio DSC operation can be setup to automatically (default) transmit a reply, or set so the radio will not automatically reply to an individual call.
Refer to section "**11.4.3 Enabling the Individual Call Acknowledgment**" for details.

16.4 INDIVIDUAL RINGER

A telephone like ring may be set to alert you that the radio has received a DSC

individual call. The default setting is 2 minutes, however this can be changed to 5, 10 or 15 seconds with the procedure below.
Refer to section “**11.4.6 Setting up the Individual Call Ringer**” for details.

16.5 GROUP DIRECTORY

For this function to operate, the same group MMSI must be programmed into all the DSC VHF radios within the group of vessels that will be using this feature.
Refer to section “**11.5.1 Setting up a Group Call**” for details.

16.6 POSITION REPLY

The **HX891BT** can be set up to automatically (default setting) or manually send your position when requested by another vessel. This selection is important if you are concerned about someone polling the position of your vessel that you may not want to. In the manual mode you will see the MMSI (Maritime Mobile Service Identity Number) or persons name shown on the display allowing you to choose to send your position to the requesting vessel.
Refer to section “**11.6.4 Setting up Position Reply**” for details.

16.7 AUTO POS POLLING

The **HX891BT** has the capability to automatically track seven vessels programmed into the individual directory.
Refer to section “**11.8 AUTO POS POLLING**” for details.

16.8 AUTO POS INTERVAL

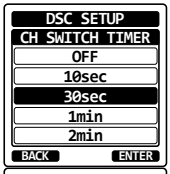
The auto position polling time interval between position request transmissions, may be programmed into the individual directory setup.
Refer to section “**11.8.2 Setting up the Polling Time Interval**” for details.

16.9 CHANNEL SWITCH TIMER

When a DSC Distress Alert or an all ships (urgency or safety) call is received, the **HX891BT** will automatically switch to Channel 16.
This menu selection allows the automatic switch time to be changed. The default selection is 30 seconds.

Press and hold MENU/SET key ➡ DSC SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ CH SWITCH TIMER (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired time, then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.



When the “**OFF**” is selected, “C” icon will light up on the screen.

16.10 NO ACT (ACTION) TIMER

If no key is pressed during the "**MENU**" or "**DSC CALL**" setup screen, the **HX891BT** will automatically return to radio operation.
The default selection is 15 minutes.

Press and hold MENU/SET key → DSC SETUP (CH▲ / CH▼ key) → SELECT (— key) → NO ACT TIMER (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired time, then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

16.11 WAIT TIME FOR POSITION FIX

This menu allows selection of the maximum wait time for obtaining the position information when receiving a Distress Alert, a POS Report Call, or an acknowledgement to POS Request Call.

The default selection is 15 seconds.

Press and hold MENU/SET key → DSC SETUP (CH▲ / CH▼ key) → SELECT (— key) → POS FIX WAIT (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired time, then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

16.12 DSC BEEP

When a DSC call is received, the alarm beeps may be turned ON or OFF. The DSC calls that can be customized are: individual, group, all ships, position request, and position report.

Refer to section "**11.5.4 Setting up the Group Call Ringer**" for details.

16.13 SUMMARY OF THE DSC SETUP MENU

ITEM	DESCRIPTION	DEFAULT VALUE
INDIVIDUAL DIR.	Enter or edit addresses used for individual calls	–
INDIVIDUAL REPLY	Selects a reply to an individual call	MANUAL
INDIVIDUAL ACK	Selects the message to be sent automatically as an individual call acknowledgement	ENABLE
INDIVIDUAL RING	Selects the ringing time when an individual call or a position request is received	2 min
POSITION REPLY	Selects reply mode when receiving a position call	AUTO
GROUP DIR.	Enter or edit addresses used for group calls	–
AUTO POS POLLING	Selects the AUTO POS POLLING operation type	AUTO POS REQUEST

AUTO POS TIME	Selects the transmission interval of AUTO POS POLLING signal	30 sec
CH SWITCH TIMER	Selects the delay time before automatically moving to the requested channel automatically after receiving a Distress Alert, All Ship call, or group call	30 sec
NO ACT (ACTION) TIMER	Selects the delay time to return to radio operation automatically after no key press	15 min
POS FIX WAIT	Sets the maximum wait time to obtain position information when receiving a Distress Alert, POS Report call, or acknowledgement to POS request call	15 sec
DSC BEEP	Turns the audible alarm ON or OFF when receiving a DSC call	INDIVIDUAL: ON GROUP: ON ALL SHIPS: ON POS REQUEST: OFF POS REPORT: ON GEOGRAPHIC: ON POLLING: OFF TEST: OFF

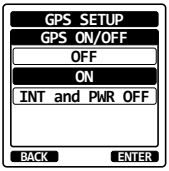
17. GPS SETUP

The “GPS Setup” mode allows the parameters for the **HX891BT** internal GPS unit to be customized for your operating requirements.

17.1 GPS ON/OFF

This selection allows the internal GPS unit to be turned ON or OFF to conserve battery power. The default setting is “ON”.

Press and hold [MENU/SET] key → GPS SETUP ([CH▲] / [CH▼] key) → SELECT ([—] key) → GPS ON/OFF ON ([CH▲] / [CH▼] key) → SELECT ([—] key)



1. Press the [**CH▼**]/[**CH▲**] key to select “**OFF**”, “**ON**”, or “**INT and PWR OFF**”.
   OFF: GPS OFF
   ON: GPS ON
   INT and PWR OFF: GPS ON, even when the transceiver is OFF.
2. Press the [**ENTER**] soft key to save the new setting.
3. Press the [**CLR**] key to return to radio operation.

NOTE

When “**INT and PWR OFF**” is set, the battery is depleted little by little because the internal GPS unit is activated. When the transceiver is OFF with “**INT and PWR OFF**” is set, charge the battery by connecting the Charger cradle.

17.2 POWER SAVE

This menu item selects the Battery Save Mode for the internal GPS unit. The default setting for the Power Save Mode is “AUTO”.

Press and hold MENU/SET key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → POWER SAVE (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired level.
   OFF: GPS signals are always being received.
   AUTO: Activates the GPS receiver automatically when GPS signals are received.
   50%: Activates the GPS receiver for 3 seconds every 3 seconds.
   75%: Activates the GPS receiver for 3 seconds every 9 seconds.
   90%: Activates the GPS receiver for 3 seconds every 27 seconds.
2. Press the [**ENTER**] soft key to store the selected setting.
3. Press the [**CLR**] key to return to radio operation.

17.3 DISPLAY DIRECTION

This menu item selects the compass orientation to be shown on the **HX891BT** display. The default setting is “course up”.

Press and hold MENU/SET key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → DIRECTION (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired direction from “**COURSE UP**” and “**NORTH UP**”.
2. Press the [**SELECT**] soft key to save the new setting.
3. Press the [**CLR**] key to return to radio operation.

17.4 LOCATION FORMAT

This menu item selects the coordinate system to be shown on the **HX891BT** display. The default setting is “ddd mm.mmmm”.

Press and hold MENU/SET key → GPS SETUP (CH▲ / CH▼ key) → SELECT (— key) → LOCATION FORMAT (CH▲ / CH▼ key) → SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired coordinate system. The location format can be selected from “**ddd°mm.mmmm**”, “**ddd°mm.mm**”, and “**ddd°mm’ss”**”.
2. Press the [**ENTER**] soft key to save the new setting.
3. Press the [**CLR**] key to return to radio operation.

17.5 TIME OFFSET

Sets the local time offset between UTC (Universal Time Coordinated) and local time shown on the display. The offset is added or subtracted from the time received from the GPS.
Refer to section "**6.6 CHANGING THE GPS TIME**" for details.

17.6 TIME AREA

This menu item sets the clock to show UTC time or local time with the offset.
Refer to section "**6.7 CHANGING THE TIME LOCATION**" for details.

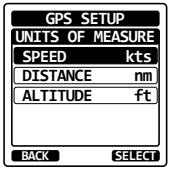
17.7 TIME FORMAT

This menu item allows setting the clock to show time in 12-hour or 24-hour format.
Refer to section "**6.8 CHANGING THE TIME FORMAT**" for details.

17.8 UNITS OF MEASURE

This section allows setting the display units of the speed, distance and altitude.

Press and hold [MENU/SET] key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ UNITS OF MEASURE (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select the item to be set.
2. Press the [**SELECT**] soft key.
3. Press the [**CH▼**]/[**CH▲**] key to select the unit.
4. Press the [**ENTER**] soft key to store the new setting.
5. Press the [**CLR**] key to return to radio operation.

17.9 PINNING

This selection is used to enable or disable position updates when the vessel is not underway. The default setting is "ON".

Press and hold [MENU/SET] key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ PINNING ON (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**ON**" or "**OFF**".
   ON: When pinning is turned on, the **HX891BT** will not update its position unless the vessel travels over 10 Ft.
   OFF: Whether the vessel is underway or stopped, the **HX891BT** continuously updates its position. This improves accuracy of the position fix.
2. Press the [**ENTER**] soft key to save the new setting.
3. Press the [**CLR**] key to return to radio operation.

17.10 SBAS (Satellite Based Augmentation System)

This selection enables or disables SBAS such as WAAS, EGNOS and MSAS as some areas (Australia for example) can have problems with GPS reception with SBAS enabled. The default setting is “ON”.

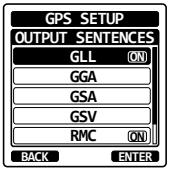
Press and hold [MENU/SET] key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ D-GPS ON (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select “**ON**” or “**OFF**”.
2. Press the [**ENTER**] soft key to store the new setting.
3. Press the [**CLR**] key to return to radio operation.

17.11 OUTPUT SENTENCES

This selection is used to setup the NMEA output sentences of the **HX891BT**. By default, all the NMEA sentences are turned “OFF”.

Press and hold [MENU/SET] key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ OUTPUT SENTENCES (CH▲ / CH▼ key) ➡ SELECT (— key)



1. Press the [**CH▼**]/[**CH▲**] key to select the desired sentence type, then press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select “**ON**” or “**OFF**”.
3. Press the [**ENTER**] soft key to save the new setting.
4. Repeat steps 1 through 3 to set the other sentences.
5. Press the [**CLR**] key to return to radio operation.

17.12 LOGGER INTERVAL

Press and hold [MENU/SET] key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ LOGGER INTERVAL (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the desired time and press the [**ENTER**] soft key.
   Note: Log time for each logger interval setting
   5 sec: Aprox. 8 hours
   15 sec: Aprox. 25 hours
   30 sec: Aprox. 50 hours
   1 min: Aprox. 100 hours (Default setting)
   5 min: Aprox. 500 hours
2. Press the [**CLR**] key to return to radio operation.

17.13 LOG ERASE

Press and hold MENU/SET key ➡ GPS SETUP (CH▲ / CH▼ key) ➡ SELECT (– key) ➡ LOG ERASE (CH▲ / CH▼ key) ➡ SELECT (– key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**CANCEL**" or "**OK**", then press the [**ENTER**] soft key.
2. Press the [**CLR**] key to return to radio operation.

17.14 SUMMARY OF THE GPS SETUP

ITEM	DESCRIPTION	DEFAULT VALUE
GPS ON/OFF	Turns on or off the GPS receiver	ON
POWER SAVE	Selects the power save mode of the GPS unit	AUTO
DIRECTION	Selects the compass direction to be displayed	COURSE UP
LOCATION FORMAT	Selects the coordinate system to be displayed	ddd°mm.mmmm
TIME OFFSET	Sets the offset time from the UTC (available only when "LOCAL" is selected in the item "TIME AREA")	00:00
TIME AREA	Selects the time location to be displayed, from UTC or local	UTC
TIME FORMAT	Selects the time format to be displayed, 12-hour or 24-hour (fixed to "24hour" when "UTC" is selected in the item "TIME AREA")	24hour
UNITS OF MEASURE	Selects the unit of measure when displaying speed, distance, and altitude	SPEED: kts DISTANCE: nm ALTITUDE: ft
PINNING	Turns GPS position updates ON or OFF for vessel not underway	ON
D-GPS	Turns use of SBAS	ON
OUTPUT SENTENCES	Selects a sentence to be output to the USB terminal	GLL
LOGGER INTERVAL	Selects the logging interval time	1 min
LOG ERASE	Erases the log data	–

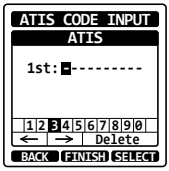
18. ATIS SETUP (HX891BT/E only)

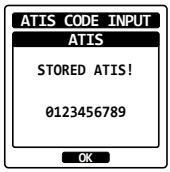
The **HX891BT/E** supports the ATIS (Automatic Transmitter Identification System) used in Inland waterways in Europe. When enabled ATIS mode transmits a unique ATIS code each time the PTT switch is released at the end of a transmission. Users should check with their local marine regulatory authority in their country for assistance in obtaining an ATIS code.

18.1 ATIS CODE PROGRAMMING

Press and hold MENU/SET key ➡ ATIS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ ATIS CODE (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [◀]/[▶] key to select the first numeral of your ATIS, then press the [**SELECT**] soft key to step to the next numeral.
2. If the ATIS number has been entered twice, continue with step 1 to set your ATIS number (ten digits).
3. If a mistake was made entering in the ATIS, press the [**CH▼**]/[**CH▲**]/[◀]/[▶] key to select "←" or "→", press the [**SELECT**] soft key until the wrong number is selected, then perform step 1.
4. When finished programming the number, press the [**FINISH**] soft key. The Radio will ask you to input the ATIS number again. Perform steps 1 through 3 above.





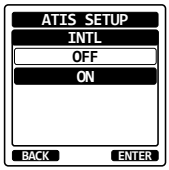
5. After the number has been input a second time, press the [**FINISH**] soft key to store the ATIS number in memory.
6. Press the [**OK**] soft key to return to radio operation.

18.2 ATIS CH GROUP

The **HX891BT/E** ATIS feature may be enabled or disabled for each channel group.

Press and hold MENU/SET key ➡ ATIS SETUP (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ ATIS GROUP (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select the channel group (International, Canadian*, or USA) you wish to change the setting, and press the [**SELECT**] soft key.
2. Press the [**CH▼**]/[**CH▲**] key to select "**ON**" or "**OFF**".



*(When setting the region, the selected European Channel Group will be displayed instead of “CANADA”. For details, refer to the Note on Setting the Region on the separate yellow insert sheet.)

3. Press the [**SELECT**] soft key to save the new setting.
4. If you want to set the ATIS feature to another channel group, repeat step 1 through 3.
5. Press the [**CLR**] key to return to radio operation.

19. MAINTENANCE

19.1 GENERAL

The inherent quality of the solid-state components in STANDARD HORIZON radios will provide many years of continuous use. Take the following precautions to prevent damage to the radio:

- Never key the microphone unless an antenna or suitable dummy load is connected to the transceiver
- Use only STANDARD HORIZON-approved accessories and replacement parts.

19.2 FACTORY SERVICE

In the unlikely event that the radio fails to perform or needs servicing, please contact one of following:

In USA and Canada

Standard Horizon
Attention Marine Repair Department
6125 Phyllis Drive, Cypress, California 90630, U.S.A.
Telephone (800) 366-4566

In Europe

Yaesu (UK) Ltd
Unit 4, Concorde Park, Concorde Way, Segensworth North,
Fareham, Hampshire PO15 5FG, United Kingdom
Telephone +44 (0)1962 866667

In Other Countries

Contact the dealer or the distributor.

19.3 Reset the USER MMSI and ATIS CODE

If the MMSI number and ATIS code (**HX891BT/E** only) need to be reset. Please contact Standard Horizon to obtain the required reset codes.

19.3.1 To request the Reset Code

Contact Standard Horizon and confirm the following required information.

- The Information Necessary to obtain the Reset Code
  - Model name
  - Serial number
  - Current MMSI number or/and ATIS code
    (To check the MMSI number and ATIS code, refer to "**6.4 MARITIME MOBILE SERVICE IDENTITY (MMSI)**" or "**18 ATIS SETUP (HX891BT/E only)**".
  - Request codes for the MMSI number or/and the ATIS code
    (See "**19.3.2 Checking the Request code**" below).
- Contact Information

USA/Canada

E-mail: marinetech@yaesu.com
Telephone: (800) 767-2450

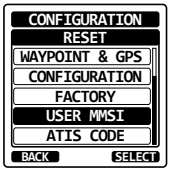
Europe

E-mail: service@yaesu.co.uk
Telephone: +44 (0)1962 866667

19.3.2 Checking the Request code

Press and hold MENU/SET key ➡ CONFIGURATION (CH▲ / CH▼ key) ➡ SELECT (— key) ➡ RESET (CH▲ / CH▼ key) ➡ SELECT (— key)

1. Press the [**CH▼**]/[**CH▲**] key to select "**USER MMSI**" or "**ATIS CODE**", then press the [**SELECT**] soft key.
   The RESET screen will appear.
2. Press the [**SELECT**] soft key again.
   The request code will be displayed.



NOTE

When resetting both "**USER MMSI**" and "**ATIS CODE**", both request codes are required.

19.3.3 Resetting the USER MMSI and ATIS codes

Here is the procedure for resetting the USER MMSI and ATIS codes after obtaining the reset codes.

1. The RESET screen is displayed on step 1 in “**Checking the Request code**”.
2. Press the [CH▼]/[CH▲] key to select “**PASSWORD**", then press the [**SELECT**] soft key.
   The password input screen will appear.

3. Input the acquired reset code.
   - Select the character with the [CH▼]/[CH▲]/[◄]/[►] keys
   - Press the [**SELECT**] soft key to input the character
   - Press the [**SELECT**] soft key to select “←” or “→” on the screen to move the cursor.
   - Press the [**SELECT**] soft key to select “**Delete**” on the screen to delete the selected character

4. Press the [**FINISH**] soft key.
   If the reset is successful, “**COMPLETE!**” will appear on the screen.
   If the error message is displayed, input the reset code again.

5. Press the [**OK**] soft key to return to setup screen.

NOTE

The acquired reset code is available only one time.

19.4 TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	REMEDY
The USA/INTL/CAN modes do not function.	Proper operation not followed.	Specify the item number from “SETUP MENU” – “CH SETUP” – “CH GROUP”.
Cannot output sound by pressing and holding the **[SQL]** key.	Low battery.	Charge battery. Refer to section 6 of this manual.
	Audio volume level is too low.	Press the [**VOL+**] key until background noise outputs.
Cannot transmit a DSC Call.	MMSI number is not programmed.	Program the MMSI number. Refer to section “**6.4.2 Programming the MMSI**”.
Cannot fix the GPS satellites.	Internal GPS receiver is “off”.	Internal GPS receiver is “on”. Refer to “**17.1 GPS ON/OFF**”.
	Poor location for GPS satellite reception.	Move to a less obstructed position.
Charge indicator does not appear on the display when charging a battery.	Defective battery **SBR-13LI**.	Contact Standard Horizon dealer.
	The transceiver is not set onto the **SBH-32** Charger Cradle properly.	Set the transceiver onto the **SBH-32** Charger Cradle properly.
	Power is not supplied to the **SBH-32** Charger Cradle.	Connect **SAD-25** or **E-DC-19A** to the **SBH-32** Charger Cradle for AC/DC power supplies.

20. VHF MARINE CHANNEL ASSIGNMENTS

20.1 HX891BT (USA Version)

VHF MARINE CHANNEL CHART							
CH	**U**	**C**	**I**	**S/D**	**TX**	**RX**	**CHANNEL USE**
01		X	X	D	156.050	160.650	Public Correspondence (Marine Operator)
1001	X			S	156.050		Port Operation and Commercial. VTS in selected areas
02		X	X	D	156.100	160.700	Public Correspondence (Marine Operator)
03		X	X	D	156.150	160.750	Public Correspondence (Marine Operator)
1003	**X**			**S**	**156.150**		**U.S. Government Only, Coast Guard**
04			X	D	156.200	160.800	Public Correspondence (Marine Operator), Port operation, ship movement
1004		X		S	156.200		Pacific coast: Coast Guard, East Coast: Commercial fishing
05			X	D	156.250	160.850	Public Correspondence (Marine Operator), Port operation, ship movement
1005	X	X		S	156.250		Port operation. VTS in Seattle
06	X	X	X	S	156.300		Inter-ship Safety
07			X	D	156.350	160.950	Public Correspondence (Marine Operator), Port operation, ship movement
1007	X	X		S	156.350		Commercial
08	X	X	X	S	156.400		Commercial (Inter-ship only)
09	X	X	X	S	156.450		Boater Calling channel, Commercial & Non-commercial (Recreational)
10	X	X	X	S	156.500		Commercial
11	X	X	X	S	156.550		Commercial. VTS in selected areas.
12	X	X	X	S	156.600		Port operation. VTS in selected areas.
13	X	X	X	S	156.650		Inter-ship Navigation Safety (Bridge-to-bridge)
14	X	X	X	S	156.700		Port operation. VTS in selected areas.
15	X				–	156.750	Environmental (Receive only)
15		X	X	S	156.750		Commercial, non-commercial, ship movement (1 W)
16	X	X	X	S	156.800		International Distress, Safety and Calling
17	X	X	X	S	156.850		State Controlled (1 W)
18			X	D	156.900	161.500	Port operation, ship movement
1018	X	X		S	156.900		Commercial
19			X	D	156.950	161.550	Port operation, ship movement
1019	X	X		S	156.950		Commercial (USA) Coast Guard (Canada)
1019			X	S	156.950		
2019			X		–	161.550	
20	X	X	X	D	157.000	161.600	Canadian Coast Guard Only, International: port operations and shipment
1020		X	X	S	157.000		
1020	X			S	157.000		Port operation
2020		X	X		–	161.600	
21			X	D	157.050	161.650	Port operation, ship movement
1021	**X**	**X**		**S**	**157.050**		**U.S. Government Only (USA)** **Canadian Coast Guard (Canada)**

VHF MARINE CHANNEL CHART							
CH	**U**	**C**	**I**	**S/D**	**TX**	**RX**	**CHANNEL USE**
2021		X			–	161.650	CMB Service
22			X	D	157.100	161.700	Port operation, ship movement
1022	X	X		S	157.100		US Coast Guard Liaison and Maritime Safety Information Broadcasts announced on channel 16 (USA) Canadian Coast Guard Liaison and Maritime Safety Information Broadcasts announced on channel 16 (Canada)
23		X	X	D	157.150	161.750	Public Correspondence (Marine Operator)
1023	**X**			**S**	**157.150**		**U.S. Government Only**
2023		X			–	161.750	CMB Service
24	X	X		D	157.200	161.800	Public Correspondence (Marine Operator)
25	X	X		D	157.250	161.850	Public Correspondence (Marine Operator)
2025		X			- - -	161.850	CMB Service
26	X	X		D	157.300	161.900	Public Correspondence (Marine Operator)
27	X	X		D	157.350	161.950	Public Correspondence (Marine Operator)
1027	X	X	X	S	157.350		Port Operations
28	X	X		D	157.400	162.000	Public Correspondence (Marine Operator)
1028	X	X	X	S	157.400		Port Operations
2028		X			–	162.000	CMB Service
60		X	X	D	156.025	160.625	Public Correspondence (Marine Operator)
61			X	D	156.075	160.675	Public Correspondence (Marine Operator), Port operation, ship movement
1061	**X**	**X**		**S**	**156.075**		**Public Coast: Coast Guard; East Coast: commercial fishing only**
62			X	D	156.125	160.725	Public Correspondence (Marine Operator), Port operation, ship movement
1062		X		S	156.125		Public Coast: Coast Guard; East Coast: commercial fishing only
63			X	D	156.175	160.775	Public Correspondence (Marine Operator), Port operation, ship movement
1063	X	X		S	156.175		Port Operation and Commercial. VTS in selected areas.
64		X	X	D	156.225	160.825	Public Correspondence (Marine Operator), Port operation, ship movement
1064	**X**	**X**		**S**	**156.225**		**Public Correspondence (Marine Operator), Port operation, ship movement**
65			X	D	156.275	160.875	Public Correspondence (Marine Operator), Port operation, ship movement
1065	X	X		S	156.275		Port Operations
66			X	D	156.325	160.925	Public Correspondence (Marine Operator), Port operation, ship movement
1066	X	X		S	156.325		Port Operations
67	X	X	X	S	156.375		US: Commercial. Used for Bridge-to-bridge communications in lower Mississippi River. Inter-ship only. Canada: Commercial fishing, S&R
68	X	X	X	S	156.425		Non-commercial (Recreational)
69	X	X	X	S	156.475		US: Non-commercial (Recreational), Canada: Commercial fishing only, International: Inter-ship, Port operations and Ship movement

VHF MARINE CHANNEL CHART							
CH	U	C	I	S/D	TX	RX	CHANNEL USE
70	X	X	X		–	156.525	Digital selective calling (voice communications not allowed)
71	X	X	X	S	156.575		US, Canada: Non-commercial (Recreational), International: Port operations and Ship movement
72	X	X	X	S	156.625		Non-commercial (Inter-ship only)
73	X	X	X	S	156.675		US: Port Operations, Canada: Commercial fishing only, International: Inter-ship, Port operations and Ship movement
74	X	X	X	S	156.725		US: Port Operations, Canada: Commercial fishing only, International: Inter-ship, Port operations and Ship movement
75	X	X	X	S	156.775		Port Operations (Inter-ship only) (1 W)
76	X	X	X	S	156.825		Port Operations (Inter-ship only) (1 W)
77	X	X		S	156.875		Port Operations (Inter-ship only) (1 W)
77			X	S	156.875		Port Operations (Inter-ship only)
78			X	D	156.925	161.525	Public Correspondence (Marine Operator), Port operation, ship-movement
1078	X	X	X	S	156.925		US/Canada: Non-commercial (Recreational) International: Port operations and Ship movement
2078			X		–	161.525	
79			X	D	156.975	161.575	Port operation and Ship movement
1079	X	X	X	S	156.975		US/Canada: Commercial International: Port operations and Ship movement
2079			X		–	161.575	
80			X	D	157.025	161.625	Port operation, ship movement
1080	X	X		S	157.025		Commercial
81			X	D	157.075	161.675	Port operation, ship movement
1081	**X**	**X**		**S**	**157.075**		**U.S. Government Only - Environmental protection operations. (USA) Canadian Coast Guard Only (Canada)**
82			X	D	157.125	161.725	Public Correspondence (Marine Operator), Port operation, ship movement
1082	**X**	**X**		**S**	**157.125**		**U.S. Government Only (USA) Canadian Coast Guard Only (Canada)**
83			X	D	157.175	161.775	Public Correspondence (Marine Operator)
1083	**X**	**X**		**S**	**157.175**		**U.S. Government Only (USA) Canadian Coast Guard Only (Canada)**
2083		X			–	161.775	CMB Service
84	X	X		D	157.225	161.825	Public Correspondence (Marine Operator)
85	X	X		D	157.275	161.875	Public Correspondence (Marine Operator)
86	X	X		D	157.325	161.925	Public Correspondence (Marine Operator)
87	X	X	X	S	157.375		Port operation, ship movement
88	X	X	X	S	157.425		Port operation, ship movement Commercial, Inter-ship Only

NOTE: Simplex channels, 1003, 1021, 1023, 1061, 1064, 1081, 1082 and 1083 CANNOT be lawfully used by the general public in U.S.A. waters.

20.2 HX891BT/E

CH	TX (MHz)	RX (MHz)	SIMPLEX/ DUPLEX	LOW PWR	CHANNEL USE	
					All countries (Except Germany)	Germany
01	156.050	160.650	DUPLEX	–	TELEPHONE	NAUTIK
02	156.100	160.700	DUPLEX	–	TELEPHONE	NAUTIK
03	156.150	160.750	DUPLEX	–	TELEPHONE	NAUTIK
04	156.200	160.800	DUPLEX	–	INTL	NAUTIK
05	156.250	160.850	DUPLEX	–	INTL	NAUTIK
06	156.300		SIMPLEX	LOW*4	SAFETY	SHIP-SHIP
07	156.350	160.950	DUPLEX	–	INTL	NAUTIK
08	156.400		SIMPLEX	LOW*4	COMMERCIAL	SHIP-SHIP
09	156.450		SIMPLEX	–	CALLING	NAUTIK
10	156.500		SIMPLEX	LOW*4	COMMERCIAL	SHIP-SHIP
11	156.550		SIMPLEX	LOW*4	VTS	SHIP-PORT
12	156.600		SIMPLEX	LOW*4	VTS	SHIP-PORT
13	156.650		SIMPLEX	LOW*4	BRG/BRG	SHIP-SHIP
14	156.700		SIMPLEX	LOW*4	VTS	SHIP-PORT
15	156.750		SIMPLEX	LOW	COMMERCIAL	ON-BOARD
16	156.800		SIMPLEX	–	DISTRESS	
17	156.850		SIMPLEX	LOW	SAR	ON-BOARD
18	156.900	161.500	DUPLEX	–	INTL	NAUTIK
19	156.950	161.550	DUPLEX	–	INTL	NAUTIK
1019	156.950		SIMPLEX	–	–	–
2019	–	161.550	SIMPLEX	–	–	–
20	157.000	161.600	DUPLEX	LOW*6	PORT OPR	NAUTIK
1020	157.000		SIMPLEX	LOW*6	–	–
2020	–	161.600	SIMPLEX	–	–	–
21	157.050	161.650	DUPLEX	–	INTL	NAUTIK
22	157.100	161.700	DUPLEX	–	INTL	NAUTIK
23	157.150	161.750	DUPLEX	–	INTL	
1027	157.350		SIMPLEX	–	–	
1028	157.400		SIMPLEX	–	–	
31*1	157.550	162.150	DUPLEX	LOW	NED JACHTHAV	–
37*2	157.850		SIMPLEX	LOW	YACHTING UK	–
60	156.025	160.625	DUPLEX	–	TELEPHONE	NAUTIK
61	156.075	160.675	DUPLEX	–	INTL	NAUTIK
62	156.125	160.725	DUPLEX	–	INTL	NAUTIK
63	156.175	160.775	DUPLEX	–	INTL	NAUTIK
64	156.225	160.825	DUPLEX	–	TELEPHONE	NAUTIK
65	156.275	160.875	DUPLEX	–	INTL	NAUTIK
66	156.325	160.925	DUPLEX	–	INTL	NAUTIK
67	156.375		SIMPLEX	–	BRG/BRG	NAUTIK
68	156.425		SIMPLEX	–	SHIP-SHIP	
69	156.475		SIMPLEX	–	PLEASURE	
70	–	156.525	SIMPLEX	–	DSC	
71	156.575		SIMPLEX	LOW*4	PLEASURE	SHIP-PORT
72	156.625		SIMPLEX	LOW*4	SHIP-SHIP	
73	156.675		SIMPLEX	–	PORT OPR	NAUTIK
74	156.725		SIMPLEX	LOW*6	PORT OPR	SHIP-PORT
75	156.775		SIMPLEX	LOW	–	SHIP-PORT

CH	TX (MHz)	RX (MHz)	SIMPLEX/ DUPLEX	LOW PWR	CHANNEL USE	
					All countries (Except Germany)	Germany
76	156.825		SIMPLEX	LOW	–	NAUTIK
77	156.875		SIMPLEX	LOW*6	PORT OPR	SHIP-SHIP
78	156.925	161.525	DUPLEX	–	INTL	NAUTIK
1078	156.925		SIMPLEX	–	–	–
2078	–	161.525	SIMPLEX	–	–	–
79	156.975	161.575	DUPLEX	–	INTL	NAUTIK
1079	156.975		SIMPLEX	–	–	–
2079	–	161.575	SIMPLEX	–	–	–
80	157.025	161.625	DUPLEX	–	INTL	NAUTIK
81	157.075	161.675	DUPLEX	–	INTL	NAUTIK
82	157.125	161.725	DUPLEX	–	INTL	TELEPHONE
83	157.175	161.775	DUPLEX	–	INTL	TELEPHONE
87	157.375		SIMPLEX	–	PORT OPR	
88	157.425		SIMPLEX	–	PORT OPR	
M*3	157.850		SIMPLEX	–	YACHTING UK	–
M2*3	161.425		SIMPLEX	–	YACHTING UK	–
L1*5	155.500		SIMPLEX	–	PLEASURE	–
L2*5	155.525		SIMPLEX	–	PLEASURE	–
L3*5	155.650		SIMPLEX	–	PLEASURE	–
F1*5	155.625		SIMPLEX	–	FISHING	–
F2*5	155.775		SIMPLEX	–	FISHING	–
F3*5	155.825		SIMPLEX	–	FISHING	–

NOTE: Country Channel assignment are different depending on the region.
****1:*** Channel 31 is assigned to only BELGIUM and NETHERLANDS.
****2:*** Channel 37 is assigned to only NETHERLANDS.
****3:*** Channel M and M2 are assigned to only UNITED KINGDOM.
****4:*** LOW Power setting for BELGIUM, NETHERLANDS and GERMANY.
****5:*** Channel L1, L2, L3, F1, F2 and F3 are assigned to only SWEDEN.
****6:*** LOW Power setting for GERMANY.

21. SPECIFICATIONS

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice. Measurements are in accordance with TIA/EIA-603 (U.S.A.) and EN302 885 (EXP).

● GENERAL

Frequency Range ..... TX: 156.025MHz - 157.425MHz
(Frequency differs in some regions) RX: 156.050MHz - 163.275MHz
(USA / International, Including WX channels)
Channel Spacing 25kHz
Frequency Stability ..... ±3 ppm (−4°F to +140°F [−20°C to +60°C])
Emission Type ..... 16K0G3E for Voice, 16K0G2B for DSC
Antenna Impedance ..... 50 Ω
Supply Voltage ..... 7.4 V DC, Negative Ground (Battery Terminal)
Current Consumption ..... 380 mA (Receive)
130 mA (Standby, GPS On)
110 mA (Standby, GPS Off)
1.6 A / 1.0 A / 0.7 A
(TX: 6 W (5 W)* / 2 W / 1 W)
Operating Temperature ..... −4°F to +140°F (−20 °C to +60 °C)
DSC Individual Directory ..... Store up to 100 Identities
DSC Group Directory ..... Store up to 30 Groups
DSC Format ..... ITU-R M.493-15
NMEA Output ..... DSC, DSE, GLL, GGA, GSA, GSV, and RMC
Case Size (W x H x D) ..... 2.60” x 5.43” x 1.50” (66 mm x 138 mm x 38 mm)
(w/o knob & antenna)
Weight ..... 10.94 oz (310 g)
(Including: SBR-13LI, hand strap, belt clip & antenna)
*(5 W TX required in Some Countries)

● TRANSMITTER

RF Power Output ..... 6 W (5 W)* (HIGH) / 2 W (MEDIUM) / 1 W (LOW)
(@7.4V)
Modulation Type ..... Variable Reactance
Maximum Deviation ..... ±5kHz
Spurious Emission ..... Less than 0.25 μW
Microphone Impedance ..... 2 kΩ
*(5 W TX required in Some Countries)

● RECEIVER (for Voice and DSC)

Circuit Type ..... Double-Conversion Superheterodyne
Intermediate Frequencies ..... for Voice 1st: 38.85MHz
2nd: 450kHz
for DSC 1st: 30.4MHz
2nd: 450kHz
Sensitivity ..... for Voice 0.25 μV for 12 dB SINAD (U.S.A.)
-5 dBμ for 20 dB SINAD (EXP)
for DSC 0.5 μV for 12 dB SINAD (U.S.A.)
0 dBμ for 20 dB SINAD (EXP)
Adjacent Channel Selectivity ..... 70 dB typical
Intermodulation ..... 70 dB typical
Hum & Noise Ratio ..... 45 dB typical
Selectivity ..... 12kHz / 25kHz (−6 dB / −60 dB)
AF Output (Internal SP) ..... 700 mW @16 Ω for 10 % THD (@7.4 V)

● GPS

Receiver Channels ..... 66 Channels
Sensitivity ..... Less than −147 dBm
Time to First Fix ..... 1 min typical (@Cold Start)
5 sec typical (@Hot Start)
Geodetic Datum WGS84

● FM BROADCAST RECEIVER

Frequency Range: ..... 65MHz - 108MHz
Frequency Step: 100kHz
Sensitivity: ..... 1.0 μV for 12 dB SINAD

● Bluetooth

Version: ..... Version 5.3
Class: ..... Class 1

Symbols placed on the equipment

⎓ Direct current

22. CONNECTING A USB DATA TERMINAL TO THE PC

The **HX891BT** outputs the following NMEA 0183 sentences 9600: GLL, GGA, GSA, GSV, RMC, DSC and DSE.

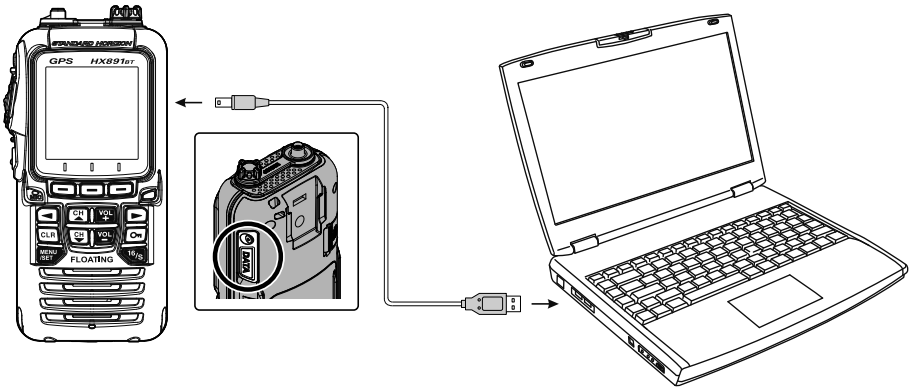
If you have further inquires, please feel free to contact Product Support at:

Phone: (800) 767-2450

Email: marinetech@yaesu.com

You can also download the log data from the radio by using the PC Programming Software which may be downloaded from the Standard Horizon website. The PC Programming Software is compatible with Windows 10, and Windows 11.

To connect a PC, use the supplied USB cable through the **DATA** jack of the **HX891BT**.



CAUTION

The **DATA** jack is NOT designed to be waterproof when the cover is opened. Connect the radio and PC in a dry location.

23. FCC AND CANADA RADIO LICENSE INFORMATION

Standard Horizon radios comply with the Federal Communication Commission (FCC) and the Innovation, Science and Economic Development Canada (ISED) requirements that regulate the Maritime Radio Service.

23.1 STATION LICENSE

An FCC ship station license is no longer required for any vessel traveling in U.S. waters (except Hawaii) which is under 20 meters in length. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone or marine satellite terminal is required to have a ship station license. FCC license forms, including applications for ship (605) and land station licenses can be downloaded via the Internet at https://www.fcc.gov/fcc-form-605. To obtain a form from the FCC, call (888) 225-5322.

23.2 RADIO CALL SIGN

Currently the FCC does not require recreational boaters to have a Ship Radio Station License. The USCG recommends the boats registration number and the state to be used when calling another vessel.

23.3 CANADIAN SHIP STATION LICENSING

Please click on the following link for licensing information:
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01775.html

The following link lists several Branches/Offices regarding licensing. Licensing depends on the region of operations.
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01742.html

23.4 FCC / ISED INFORMATION

The following data pertaining to the transceiver is necessary to fill out the license application.

Type Acceptance ..... FCC Part 80/ISED RSS-182
Output Power..... 1 Watt (low), 2 Watts (medium) and 6 Watts (high)
Emission 16K0G3E, 16K0G2B
Frequency Range ..... 156.025 to 163.275MHz
FCC ID..... K6630703X30
ISED ID..... 511B-30703X30

24. RF EXPOSURE SAFETY STATEMENT

24.1 SAFETY INFORMATION

Your wireless handheld portable transceiver contains a low power transmitter. When the Push-to-Talk (PTT) button is pushed, the transceiver sends out radio frequency (RF) signals. In August 1996, the Federal Communications Commission adopted RF exposure guidelines with safety levels for hand-held wireless devices.

This device is authorized to operate at a duty factor not to exceed 50% (this corresponds to 50% transmission time and 50 % reception time).

WARNING: To maintain compliance with the FCC's RF exposure guidelines, this transmitter and its antenna must maintain a separation distance of at least 1 inch (2.5 centimeters) from your face. Speak in a normal voice, with the antenna pointed up and away from the face at the required separation distance.

If you use a headset accessory for this radio, with the radio worn on your body, use only the Yaesu belt clip for this transceiver, and ensure that the antenna is at least 1 inch (2.5 centimeters) from your body when transmitting.

Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter, and may violate FCC regulations.

24.2 CONSIGNES DE SECURITE

Votre émetteur-récepteur portatif sans fil contient un émetteur à faible puissance. Lorsque vous appuyez sur le bouton Push-to-Talk (PTT), l'émetteur-récepteur émet des signaux de radiofréquence (RF). En août 1996, la FCC (Commission Fédérale des Communications) a adopté des directives relatives à l'exposition aux RF avec des niveaux de sécurité pour les appareils sans fils portatifs.

Le fonctionnement de cet appareil est autorisé à un facteur d'utilisation ne dépassant pas 50% (correspondant à 50% de la durée de transmission et 50% de la durée de réception).

AVERTISSEMENT: Pour assurer la conformité avec les directives d'exposition RF de la FCC, cet émetteur-récepteur et son antenne doivent être maintenus à une distance minimum d'un pouce (2,5 centimètre) de votre visage. Parlez avec une voix normale, avec l'antenne dirigée vers le haut et éloignée du visage, à la distance requise.

Si vous utilisez un casque pour cette radio, et que vous portez la radio sur vous, utilisez exclusivement le clip de ceinture Yaesu pour cet émetteur-récepteur, et assurez-vous que l'antenne se trouve à une distance minimum d'un pouce (2,5 centimètres) de votre corps pendant l'émission.

Utilisez exclusivement l'antenne fournie. Les antennes, les modifications ou les accessoires non autorisés peuvent endommager l'émetteur-récepteur et enfreindre les réglementations FCC.

25. FCC NOTICE / IC NOTICE

NOTICE

Unauthorized changes or modifications to this equipment may void compliance with FCC Rules. Any change or modification must be approved in writing by STANDARD HORIZON, a division of YAESU USA.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. 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.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industry 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The applicant is responsible for providing proper instructions to the user of the radio device, and any usage restrictions, including limits of exposure durations. The user manual shall provide installation and operation instructions, as well as any special usage conditions, to ensure compliance with SAR and/or RF field strength limits. For instance, compliance distance shall be clearly stated in the user manual.

The user manual of devices intended for controlled use shall also include information relating to the operating characteristics of the device; the operating instructions to ensure compliance with SAR and/or RF field strength limits; information on the installation and operation of accessories to ensure compliance with SAR and/or RF field strength limits; and contact information where the user can obtain Canadian information on RF exposure and compliance. Other related information may also be included.

CAN ICES-3 (B) / NMB-3 (B)

YAESU

Declaration of Conformity

Type of Equipment:	Floating Class H DSC Marine Transceiver with GPS
Brand Name:	STANDARD HORIZON
Model Number:	HX891BT
Manufacturer:	YAESU MUSEN CO., LTD.
Address of Manufacturer:	Omori Bell port D building 3F, 6-26-3 Minamioi, Shinagawa-ku, Tokyo 140-0013 JAPAN

This device complies with part 15 of the FCC Rules. 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.

The technical documentation as required by the Conformity Assessment procedures is kept at the following address:

Company: Yaesu U.S.A.
Address: 6125 Phyllis Drive, Cypress, CA 90630, U.S.A.
Telephone: (714) 827-7600

STANDARD HORIZON Limited Warranty

Limited Warranty is valid only in the country/region where this product was originally purchased.

On-line Warranty Registration:

Thank you for buying STANDARD HORIZON products! We are confident your new radio will serve your needs for many years! Please register your product at **www.standardhorizon.com** - Owner's Corner

Warranty Terms:

Subject to the Limitations of the Warranty and the Warranty Procedures described below, YAESU MUSEN hereby warrants this product to be free of defects in materials and workmanship in normal use during the "Warranty Period." (the "Limited Warranty").

Limitations of Warranty:

A. YAESU MUSEN is not liable for any express warranties except the Limited Warranty described above.
B. The Limited Warranty is extended only to the original end-use purchaser or the person receiving this product as a gift, and shall not be extended to any other person or transferee.
C. Unless a different warranty period is stated with this YAESU product, the Warranty Period is three years from the date of retail purchase by the original end-use purchaser.
D. The Limited Warranty is valid only in the country/region where this product was originally purchased.
E. During the Warranty Period, YAESU MUSEN will, at its sole option, repair or replace (using new or refurbished replacement parts) any defective parts within a reasonable period of time and free of charge.
F. The Limited Warranty does not cover shipping cost (including transportation and insurance) from you to us, or any import fees, duties or taxes.
G. The Limited Warranty does not cover any impairment caused by tampering, misuse, failure to follow instructions supplied with the product, unauthorized modifications, or damage to this product for any reasons, such as: accident; excess moisture; lightning; power surges; connection to improper voltage supply; damage caused by inadequate packing or shipping procedures; loss of, damage to or corruption of stored data; product modification to enable operation in another country/purpose other than the country/purpose for which it was designed, manufactured, approved and/or authorized; or the repair of products damaged by these modifications.
H. The Limited Warranty applies only to the product as it existed at the time of the original purchase, by the original retail purchaser, and shall not preclude YAESU MUSEN from later making any changes in design, adding to, or otherwise improving subsequent versions of this product, or impose upon YAESU MUSEN any obligation to modify or alter this product to conform to such changes, or improvements.
I. YAESU MUSEN assumes no responsibility for any consequential damages caused by, or arising out of, any such defect in materials or workmanship.
J. TO THE FULLEST EXTENT PERMITTED BY LAW, YAESU MUSEN SHALL NOT BE RESPONSIBLE FOR ANY IMPLIED WARRANTY WITH RESPECT TO THIS PRODUCT.
K. If the original retail purchaser timely complies with the Warranty Procedures described below, and YAESU MUSEN elects to send the purchaser a replacement product rather than repair the "original product", then the Limited Warranty shall apply to the replacement product only for the remainder of the original product Warranty Period.
L. Warranty statutes vary from state to state, or country to country, so some of the above limitations may not apply to your location.

Warranty Procedures:

1. To find the Authorized STANDARD HORIZON Service Center in your country/region, visit www.standardhorizon.com. Contact the STANDARD HORIZON Service Center for specific return and shipping instructions, or contact an authorized STANDARD HORIZON dealer/distributor from whom the product was originally purchased.
2. Include proof of original purchase from an authorized STANDARD HORIZON dealer/distributor, and ship the product, freight prepaid, to the address provided by the STANDARD HORIZON Service Center in your country/ region.
3. Upon receipt of this product, returned in accordance with the procedures described above, by the STANDARD HORIZON Authorized Service Center, all reasonable efforts will be expended by YAESU MUSEN to cause this product to conform to its original specifications. YAESU MUSEN will return the repaired product (or a replacement product) free of charge to the original purchaser. The decision to repair or replace this product is the sole discretion of YAESU MUSEN.

Other conditions:

YAESU MUSEN'S MAXIMUM LIABILITY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. IN NO EVENT SHALL YAESU MUSEN BE LIABLE FOR LOSS OF, DAMAGE TO OR CORRUPTION OF STORED DATA, OR FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR INDIRECT DAMAGES, HOW EVER CAUSED; INCLUDING WITHOUT LIMITATION TO THE REPLACEMENT OF EQUIPMENT AND PROPERTY, AND ANY COSTS OF RECOVERING, PROGRAMMING OR REPRODUCING ANY PROGRAM OR DATA STORED IN OR USED WITH THE YAESU PRODUCT.

Some Countries in Europe and some States of the USA do not allow the exclusion or limitation of incidental or consequential damages, or a limitation on how long an implied warranty lasts, so the above limitation or exclusions may not apply. This warranty provides specific rights, there may be other rights available which may vary between countries in Europe or from state to state within the USA.

This Limited Warranty is void if the label bearing the serial number has been removed or defaced.

EU Declaration of Conformity

We, Yaesu Musen Co. Ltd of Tokyo, Japan, hereby declare that this radio equipment HX891BT/E is in full compliance with EU Radio Equipment Directive 2014/53/EU. The full text of the Declaration of Conformity for this product is available to view at ://www.yaesu.com/jp/red

ATTENTION – Condition of use

This transceiver operates on frequencies that are regulated. Use of the Transmitter in the EU countries shown in the accompanying table is not permitted without authorization. Users should consult their local spectrum management authority for licensing conditions applicable to this equipment.

AT	BE	BG	CY	CZ	DE
DK	ES	EE	FI	FR	EL
HR	HU	IE	IT	LT	LU
LV	MT	NL	PL	PT	RO
SK	SI	SE	CH	IS	LI
NO	–	–	–	–	–

Disposal of Electronic and Electrical Equipment

Products with the symbol (crossed-out wheeled bin) cannot be disposed as household waste. Electronic and Electrical Equipment should be recycled at a facility capable of handling these items and their waste by-products.
Please contact a local equipment supplier representative or service center for information about the waste collection system in your country.

UKCA Declaration of Conformity

We, Yaesu Musen Co. Ltd of Tokyo, Japan declare our sole responsibility that this equipment complies with essential requirements of the Radio Equipment Regulations 2017, Electrical Equipment (Safety Regulations 2016), Electromagnetic Compliance Regulations 2016 and Restrictions of the use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 as appropriate.

STANDARD HORIZON

Nothing takes to water like Standard Horizon

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