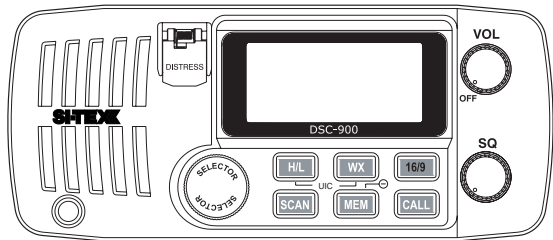


# SITEX<sup>®</sup>

## *DSC-900*



# OWNER'S HANDBOOK

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## **LICENSE INFORMATION**

### **FCC Radio License**

In U.S. waters, vessels which are not required to carry radio equipment are not required to have an FCC (Federal Communications Commission) ship station license for a VHF marine radio.

However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radio telephone or marine satellite terminal must have an FCC license.

License application forms for ship and land stations can be downloaded free from the FCC web site at this address: [www.fcc.gov/formpage.html](http://www.fcc.gov/formpage.html). You may also order copies of these forms by calling the FCC Forms Distribution Center at 1-800-418-3676.

### **Radio Call Sign**

At this time, the FCC does not require recreational boaters to have a ship radio station call sign. The U.S. Coast Guard recommends using the boat's registration number and state.

### **MMSI Number Information**

The BoatU.S. MMSI Program has been certified by both the Federal Communications Commission (FCC) and the U.S. Coast Guard to assign MMSI numbers to vessels with DSC capable radios. To obtain and register your free MMSI number, the Coast Guard recommends logging onto <http://www.boatus.com/mmsi/> and following the instructions.

## **FCC NOTICE**

### **FCC Digital Device Compliance**

This device complies with Part 15 of the U.S. Federal Communications Commission (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.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and complies with Part 15 of the FCC Rules. This specification provides 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 your dealer or an experienced technician for help.

### **FCC Radio Frequency Compliance Requirements and Warnings**

When operating your marine radio transceiver, you should know that the antenna radiates radio frequency (RF) energy. This radio was designed to meet the FCC's rules and regulations for the maximum permissible exposure to radio frequency energy. This design was tested and found to be compliant with the strict requirements established by the FCC.

DO NOT operate the radio without a proper antenna attached, because this may damage the radio and may also cause you to exceed FCC RF exposure limits. Antenna types suited for this radio are described in the installation section.

DO NOT transmit for more than 50% of the total radio use time. Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" is displayed on the screen. You can cause the radio to transmit by pressing the "PTT" (Push To Talk) switch.

**IMPORTANT:** The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 91 cm (37 inches) from all persons (including passengers). The antenna(s) must not exceed an antenna gain of 3 decibels (dB) and must not be co-located or operating in conjunction with any other antenna or transmitter.

## **1. INTRODUCTION**

Congratulations on your purchase of the *DSC-900*. It is an advanced marine VHF communication transceiver offering Digital Selective Calling. It is designed for operation in the marine VHF FM frequency band. The operating frequency range is 156.025 to 163.275MHz which includes all USA, Int'l, Canada and Wx channels.

The transceiver has Digital Selective Calling (DSC) capabilities. Distress, All Ship's and Individual DSC call formats are supported.

Other features include Position Send/Request, all channel scanning, priority channel scanning, memory channel scanning, one button instance access to channel 16/09, large selector knob and microphone with UP/DOWN keys.

### **1.1 Equipment Required**

The minimum equipment required for two way voice and DSC VHF radio communication with vessels and shore stations includes:

- VHF radio communication transmitter and receiver designed and approved for marine VHF communication use.
- VHF antenna and connecting cable. Use a good quality unity gain antenna for best range performance.
- Power source suitable for the VHF transmitter and receiver.
- For Digital Selective Calling (DSC) VHF communication radios, connection to a GPS receiver that provides latitude and longitude coordinates and UTC time for distress messages.

### **1.2 Equipment Supplied**

- DSC-900 Marine VHF Transceiver
- Microphone with UP/DOWN keys
- Mounting Bracket with knobs
- Microphone Hanger
- Power Cable with in-line fuse (6.3 Amp)
- Owner's Handbook

### **1.3 Optional Equipment**

- FM-02 Flush Mount Kit

## **2. BASIC RADIO COMMUNICATION PROCEDURES**

Distress or emergency calls may be made either manually or automatically. Sending distress calls automatically uses the Digital Selective Calling (DSC) functions of your transceiver and requires an operating and properly connected navigation receiver. The following procedures are for sending voice distress messages manually. Sending an automatic distress call is described in the DSC section of this manual.

### **2.1 Using Channel 16**

Channel 16 is the Calling and Distress channel. An emergency may be defined as a situation that threatens human life or property. In such situations, make sure your transceiver is turned On and set the channel selector to Channel 16. Then use the following procedure to make a distress call. The total transmission should not exceed 1 minute.

1. Press the microphone Push To Talk button. Speak slowly and clearly into the microphone: “Mayday, Mayday, Mayday, this is [your vessel’s name], [your vessel’s name], [your vessel’s name]”.
2. Then repeat once: “Mayday, [your vessel’s name]”.
3. Continue by reporting your position in latitude and longitude or by reporting your bearing (true or magnetic, specify which) and distance from a prominent or well known landmark, geographic feature or aid to navigation.
4. Explain the nature of your emergency (fire, sinking, collision, grounding, health condition, injury, etc.).
5. Report the kind of assistance you require (fire, medical aid, pumps, etc.).
6. State the number of people aboard and the condition of any injured.
7. Estimate the seaworthiness and condition of your vessel.
8. Describe your vessel: length, type, color and any distinguishing feature.
9. End the message by saying “Over”. Release the Push To Talk button and listen for a reply.
10. If there is no reply, repeat the above message procedure. If there is still no response, try another channel.

## 2.2 Calling Another Vessel

Channel 16 may be used to establish initial contact with another vessel. However, its most important use is for voice emergency messages. Channel 16 must be monitored at all times except when engaged in actual communication on another channel. Channel 16 is monitored by international search and rescue (SAR) authorities, National Coast Guards and by other vessels. Use of Channel 16 for calling or hailing must be limited to initial contact only. Calling should not exceed 30 seconds and may be repeated 3 times at 2 minute intervals.

Prior to making contact with another vessel, determine which channel will be used for continued communication after the initial contact. Monitor the desired channel for traffic and, when clear, switch to Channel 16 to make initial contact.

Listen for traffic on the Calling Channel (16). If clear, press the Push To Talk (PTT) button on the microphone. Speak the name of the vessel you are calling followed by “this is” and the name of your vessel and your call sign. Release the PTT and listen for a reply. When the other vessel returns your call, acknowledge the call with “go to”, the number of the new channel and “over”. Switch to the new channel and listen for traffic. If necessary, wait for traffic to clear, and then call the other vessel. As communication proceeds, end each transmission with “over”. When communication with the other vessel is completed, end the last transmission with your call sign and the word “out”. It is not necessary to end each transmission with your call sign, just give your call sign at the beginning and end of each contact.

Remember to switch to Channel 16 when not actively communicating on another channel.

## 2.3 Prohibited Communication

The following communications are prohibited by regulations and violators are subject to penalties.

- False distress or emergency messages (including false DSC distress).
- Messages to “any vessel” except in emergencies and radio tests.
- Messages to or from a vessel on land.
- Transmission while on land.
- Obscene, indecent, or profane language.



## 3. INSTALLATION

### 3.1 Transceiver

Your *DSC-900* transceiver is designed to withstand the rigors of the marine environment. However, selecting a mounting location affording some protection from the elements will prolong the life of connectors, controls and the liquid crystal display (LCD).

Select a location within easy reach and view of the operator and away from your vessel's compass. Locate the microphone to avoid entanglement with steering or engine controls, both when in use and when stowed. Also, consider routing of antenna, power and NMEA interface cables. Mount the transceiver securely to a solid surface.

### 3.2 Antenna

Proper installation of a quality VHF antenna is very important to reliable radio communication. A good quality unity gain antenna is recommended for maximum range performance. In general, antennas should be located as high as practical and separated as much as possible from other antennas and structures. The minimum distance to other objects is 1 meter. Route the antenna cable away from other electronic equipment and do not bundle the antenna or power cable with other wiring, especially transducer cables for depth sounders and fish finders. For cables longer than 10 meters, RG-8/U coaxial cable must be used. Mount the antenna and install the connector(s) in accordance with manufactures instructions. Connect the antenna cable to the RF output connector on the rear panel of the transceiver.

### 3.3 Power Connection

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#### CAUTION

#### Reverse polarity connections can damage your transceiver

The power cable for your transceiver must be connected to the ship's main power buss. Connect the Red wire to the positive (+) terminal and the Black wire to the negative (-) terminal. Connect the barrel terminals on the power cable to the matching color wires and terminals extending from the rear panel of the transceiver.

### 3.4 Rear Panel Cables

The white and black cables on the rear panel are provided for connecting an external speaker. Use an 8 Ohm speaker rated for at least 3 Watts and suitable for the environment at the chosen location.

Other cables are provided for connecting an operating GPS navigation receiver, in order for the position reporting/transferring features of your transceiver to function. Refer to your GPS navigation receiver manual for information about its NMEA output/input settings and connections.

Wire Color	Description	Connection
White	External speaker (+)	Connect to external 8 Ohm audio speaker
Black	External speaker (-)	Connect to external 8 Ohm audio speaker
Brown	NMEA Rx (+)	Connect to NMEA Tx (+) of GPS
Red	NMEA Rx (-)	Connect to Ground/NMEA Tx (-) of GPS
Orange	NMEA Tx (+)	Connect to NMEA Rx (+) of GPS
Yellow	Ground/NMEA Tx (-)	Connect to Ground/NMEA Rx (-) of GPS

### 3.5 Optional FM-02 Flush Mount Kit Installation

1. Cut the dash board using a template sheet included in the kit.
2. Set the radio in the cut dash board.
3. Rotating the longer screw and set it to the hole of the plastic mount block. Firmly attach the bolt foot rotating to the top of the screw. (See Fig. 1)
4. Firmly fix the plastic mount block on the either side of the radio using shorter screw. Don't forget to attach the washer. (See Fig. 2 and Fig. 3)
5. Fasten the longer screw to fix the radio to the dash board firmly. (Fig. 4)
6. The same works should be done to the other side too.

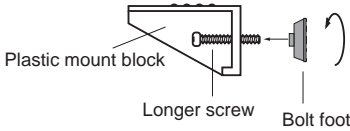


Fig.1

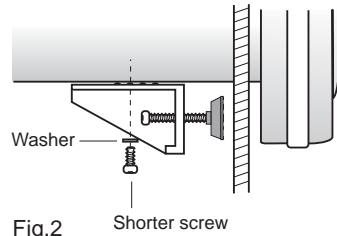


Fig.2

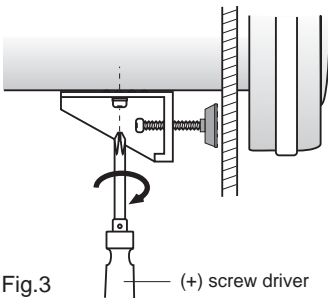
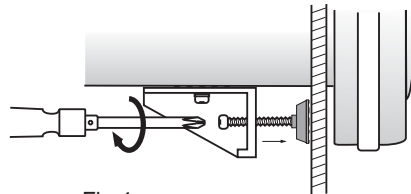


Fig.3



## 4. OPERATION

### 4.1 Power On/Off

Power to the transceiver is controlled with the **VOL** knob. When the **VOL** knob is the full CCW position, the unit is turned Off.

To turn the transceiver On:

- Rotate the **VOL** knob CW until it clicks over the detent. The LCD backlight illuminates and the Power-On screen appears.



After approximately two seconds, the Normal Communication screen appears in the display.

The default Priority channel (CH16 or 09) is displayed in the LCD. For the first time Turn On, it is CH16. The radio's Orange lighting is always On. There is no contrast control.



To turn the transceiver Off:

- Rotate the **VOL** knob CCW until it clicks over the detent to the **OFF** position.

### 4.2 Volume and Squelch

The **VOL** and **SQ** controls have each knob. They are independent controls but work together to control audio output from the speaker. The volume control set the loudness of sound from the speaker and the squelch control is used to mute background noise when no received signals are present.

To properly set the **VOL** and **SQ** controls:

- Rotate the **SQ** knob fully CCW.
- Rotate the **VOL** knob CW until background noise is plainly heard.

- Slowly rotate the **SQ** knob CW until the noise is muted (squelched). Then adjust the control slightly more CW (approximately 1/8 turn). Use care not set to the **SQ** control more CW than necessary or weak signals may be heard.

Some channels exhibit more background noise than others, so it may be necessary to readjust the squelch setting when changing channels or when scanning.

### 4.3 Keypad

A tone is emitted when any of the 6 keys are pressed. A 3-beep error tone is emitted if the key press is not allowed. Some functions require a holding down of a key. A single beep is emitted, then after the hold down timeout, a second beep will be heard and the mode entered. The basic purpose for each key is as follows:



Used for selecting channel and menu.



Use to toggle transmitter power between 25 watts and 1 watt output. Certain channels are restricted to 1 watt maximum power and will cause the error beep if the **H/LO** key is pressed.



Switches to the Wx channel mode. Also toggle Off/On the Wx Alert function by pressing in Priority or Memory Scan modes.



Selects the Primary Calling 16/09 or the last channel used. Also cancels DSC and Emergency /Distress calls.



Can be used alone or with the **MEM** key to select Priority Scan, Memory Scan or All Scan.



Stores MMSI numbers. Also stores channels in the scan memory bank, and when used with the **SCAN** key, starts Memory Scan.



Initiates DSC operation screens by pressing.

### 4.4 Channel Selection

There are two ways to change channels:

- Rotate the **SELECTOR**, or press the **UP/DOWN** keys on the MIC. The **UP/DOWN** keys on the MIC will always change channels except when being used in sub-modes.

Refer to the enclosed channel chart for proper usage and understanding. In USA and Canada, the Wx channels are available. Wx channels are not available for the International Channel Bank.

The **A** annunciator in the Radio's LCD indicates an "ALTERNATE" Channel usage and usually indicates a SIMPLEX channel is tuned and normal voice ship-to-ship communication is appropriate. If the **A** annunciator is OFF, the radio is sometimes operating in the DUPLEX Mode - the Transmit and Receive frequencies are different.

#### 4.5 Channel Banks

To switch channel banks – USA, Int'l and Canada:

- Press the **[H/L]** key and **[WX]** key at the same time. The selected **USA, I** or **C** annunciator will come On.

#### 4.6 Wx Channels

To switch to Wx mode:

- Press the **[WX]** key. **Wx** annunciator appears in the LCD and now you are in the Wx mode. The last used Wx channel always appears first.
- Rotate the **SELECTOR** to change the Wx channels.

To exit from Wx mode:

- Press the **[WX]** key. The radio returns to the previous working channel.

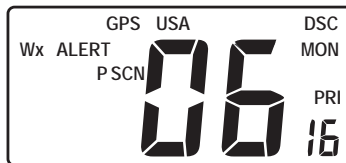
#### 4.7 Wx Alert

The Wx Alert is a 1050Hz tone burst that is transmitted from the NOAA Weather station. A special circuit in the radio detects this tone and during scanning modes (except ALL SCAN) a loud 2-tone warning will sound. Select the Wx channel before starting a Priority Scan or Memory Scan.

The alarm is cancelled by pressing any key. The radio stops scanning and switches to the Wx channel to hear the warnings. You know the radio is scanning the Wx channel, if you see the **Wx** annunciator flash On/Off in the LCD during the scanning process.

To toggle Off/On Wx Alert function:

- Press the **[WX]** key in Priority Scan or Memory Scan modes.

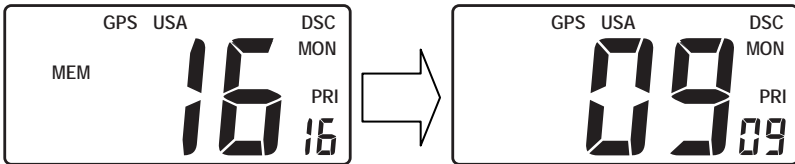


## 4.8 Priority Channel (16/09)

The Priority channel can be set as channel 16 or channel 09. Default priority channel is channel 16.

To switch the priority channel:

- Press and hold the **16/9** key until priority channel is switched to other channel. The new priority channel is remembered, even if turning Off the radio.



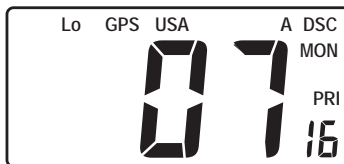
A quick press of the **16/9** Key immediately selects the priority channel (16 or 09) with high (25W) Tx power. Pressing again the **16/9** key selects the last used channel.

## 4.9 PTT

This Key is on the MIC. Press and hold it down to activate RF radio transmission at the selected RF power level. There is a 5-minute maximum Tx timer, per FCC regulations.

## 4.10 H/L

This key toggles between 25W and 1W. If the **Lo** annunciator is OFF, the radio will transmit at 25Watts. Some channels are restricted to 1 W maximum power and will cause the error beep if the **H/L** key is pressed.



## 4.11 Channel Scanning

There are three channel scanning modes; Priority Scan, All Scan and Memory Scan.

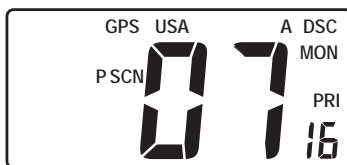
### Priority Scan

The Priority Scan function scans the Priority channel, Wx channel and the last selected working channel.

To activate the Priority Scan:

- Press the **SCAN** key. **P SCN** appears and three scanned channel numbers appear

alternately in the display. Wx Alert is On and can be toggled Off/On by pressing the **WX** key.



To exit Priority Scan:

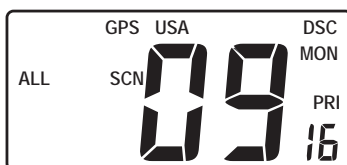
- Press the **SCAN** key or press the **16/9** key.

### All Scan

The All Scan function scans all channels except channel 70. (Channel 70 is the Digital Selective Calling (DSC) channel. Voice traffic is not permitted.) If noisy or busy channels interfere with scanning, the interfering channels may be temporarily removed from the scan sequence.

To activate the All Scan:

- Press and hold the **SCAN** key. **ALL SCN** appears and the scanned channel numbers appear in sequence in the channel number display.



To Exit All Scan:

- Press the **SCAN** key or press the **16/9** key.

To delete channels from the scan sequence:

- Press and hold the **MEM** key while the scan is halted on the offending channel. The  $\ominus$  symbol above the **MEM** key means DELETE. Turning the radio Off and On restores all channels to the scan sequence.

### Memory Scan

Memory Scan allows the user to create and scan a bank of preferred channels. Channels may be added to or removed from the memory channel bank as desired. Memory channels are stored individually and may be deleted individually, or the entire bank may be deleted. If the **PTT** button is pressed, the transceiver exits scanning



and normal communication is resumed.

To add channels to the memory channel bank:

- Use the **SELECTOR** or **UP/DOWN** keys on MIC to choose a desired channel.
- Press and hold the **MEM** key until the **MEM** annunciator appears. The new channel is now added to the memory channel bank. The Priority Channel is automatically stored in the memory channel bank and does not need to be added.

To remove channels from the memory channel bank:

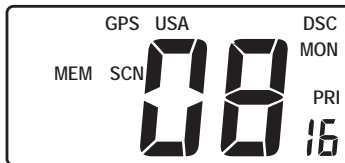
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to choose a channel.
- Press and hold the **MEM** key. This channel is now removed from the memory channel bank and **MEM** annunciator is gone.

To remove all channels from the memory channel bank:

- Press and hold the **MEM** key while turning On the radio. This clears out the memory channels.

To activate Memory Scan:

- Press the **MEM** key. And then press the **SCAN** key. **MEM SCN** appears and the scanned channel numbers appear in sequence in the channel number display. Scanning starts with Wx Alert On. To toggle the Wx Alert Off/On, press the **WX** key while in the scan mode.



To exit Memory Scan:

- Press the **SCAN** key or press the **16/9** key. **PTT** exits the scan mode at the last channel displayed.

## 4.12 MMSI Set

MMSI Set provides the entry of the 9 digit MMSI for your vessel which must be entered in order to make DSC calls. MMSI must be obtained from government communication authority or authorized agents.

---

### CAUTION

If a 9-digit MMSI number has not been entered, no DSC calls are allowed.

Only one entry attempt is permitted. Please study this section and do it properly.

---

To enter your MMSI number:

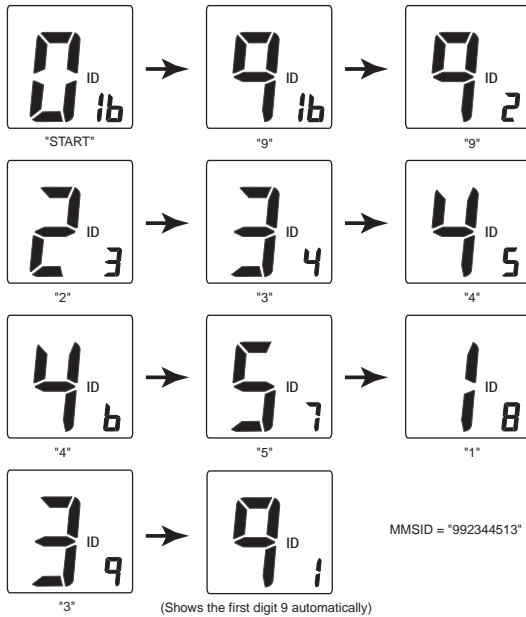
- Press and hold the **CALL** key for 5 seconds. The **ID** annunciator will blink and the number “0” is in the Big Digit and the number “16” is in the small digit.
- 

### NOTE

The Big Digit is the MMSI number that you are setting and the small digit is the MMSI's character field position. For example – “2” in the small digit represents the 2nd number from the left in your assigned MMSI, a “4” is the 4th number from the left, etc.

---

- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 1st digit of your MMSI.
- Press the **MEM** key to advance to the 2nd digit. The small digit now displays the 2nd character position with a “2” and the Big Digit displays “0”.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 2nd digit of your MMSI and Press the **MEM** key to advance to the next digit. Repeat this operation until all 9 digits have been entered and verified by you.
- If there is an error in the entry procedure, press the **16/9** Key to exit this procedure or simply turn the radio Off. No MMSI number will be stored.
- After you completely entered your MMSI number, hold down the **CALL** key for 5 seconds to store the number. The radio reverts to the Normal communication screen and the blinking **ID** annunciator is gone. DSC calls can now be made.

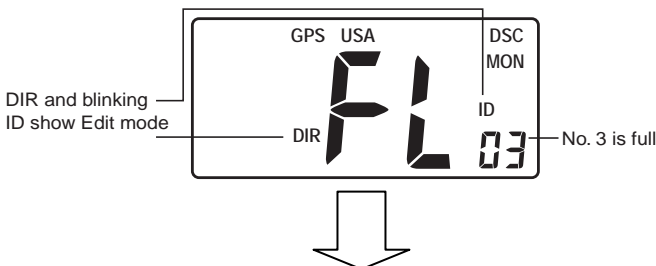


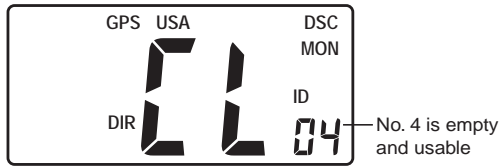
### 4.13 Directory

The DSC Calling Directory is a list of location numbers and corresponding MMSI's that you enter and store for making DSC calls (10 MMSI's maximum).

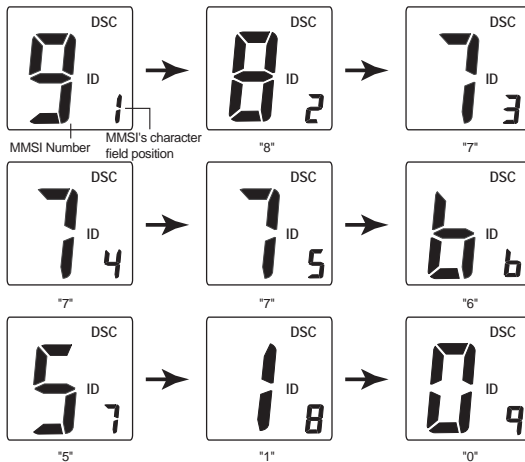
To store a new MMSI in an unused number location:

- Press the **CALL** key. The **LAST** annunciator is blinking.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **DIR**.
- Press the **CALL** key. The **ID** annunciator is blinking. This indicates the Directory edit mode is activated.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select an unused location number. If the number location is full, "FL" appears. If the number location is empty and available, "CL" appears.





- Press the **MEM** key. The Big Digit is the MMSI number that you are setting and the small digit is the MMSI's character field position.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 1st digit of your MMSI.
- Press the **MEM** key to advance to the 2nd digit. The small digit now displays the 2nd character position with a "2" and the Big Digit displays "0".
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 2nd digit of your MMSI and Press the **MEM** key to advance to the next digit. Repeat this operation until all 9 digits have been entered and verified by you.
- If there is an error in the entry procedure, press the **16/9** Key to exit this procedure or simply turn the radio Off. No MMSI number will be stored.
- After you completely entered your MMSI number, press and hold the **CALL** key for 5 seconds to store the number. Now **FL** appears in the Big Digit and MMSI is stored.



The example shows the MMSI "987776510" being entered.

To edit an existing MMSI data:

- Select the location number which displays “FL”.
- Press the **MEM** key and change the data.
- After editing 9 digits, hold down the **CALL** key for 5 seconds to store.

## 5. DSC OPERATION

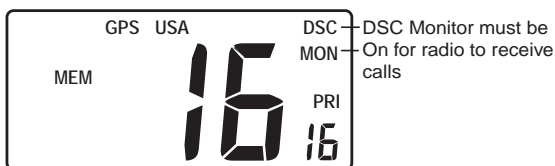
The Digital Selective Calling (DSC) functions of your *DSC-900* transceiver add convenience and safety to your VHF communication capability. DSC allows you to contact other DSC equipped vessels and shore stations by selecting their MMSI from your directory, choosing a call type, and pressing a key. In an emergency, pressing one button will send your MMSI and current position to search and rescue (SAR) authorities and other DSC equipped vessels. Distress calls are covered first. Then, normal calling procedures are described.

### 5.1 DSC Monitor

Be sure that the DSC Monitor mode is On (Default setting is On). Since there is no independent channel 70 receiver, the radio normally monitors channel 70 and checks other channels on a regular basis to detect a Squelch Break. This control method assures the radio will acquire the DSC calls possible.

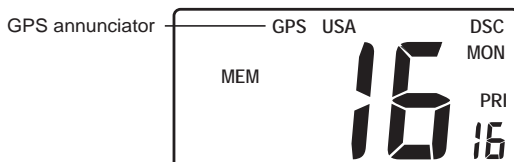
To toggle the DSC Monitor mode On/Off:

- Press and hold the **CALL** key for about 4 seconds. The **DSC MON** annunciator will be On in the display, if channel 70 is being accessed.



### 5.2 GPS Operation

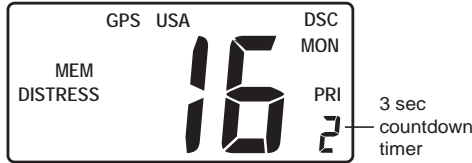
To transmit your location automatically during a Distress Call, connection to an operating GPS navigation receiver is required. Make sure your GPS navigation receiver is On and operational at all times. GPS data is sent over channel 70 to the Coast Guard and is the primary starting point of any search and rescue mission. Be sure the **GPS** annunciator is On steady and not blinking. If blinking, the GPS data is not valid.



### 5.3 Sending a Distress Call

To make a Distress Call:

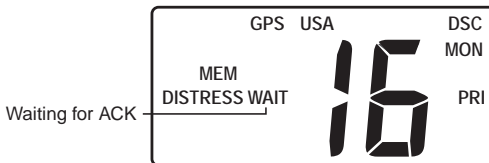
- Lift the red protective cover, then press and hold the red button. A countdown timer is displayed in the bottom right corner of the LCD.
- To reset the countdown timer before the distress is sent, release the red button.



- If the red button is held down until the timer expires, the DSC distress message is automatically sent on channel 70 and the radio is automatically set to channel 16. The DSC message contains your MMSI, LL position and UTC time acquired from your GPS navigation receiver. The **DISTRESS** annunciator is displayed during the transmission.



- A loud 2-tone alarm sounds. This alarm cannot be stopped unless the mode is cancelled. Pressing the **16/9** or **PTT** key cancels the Distress Waiting mode. With no mode cancellation, the radio transmits the Distress message again in 3.5 to 4.5 minutes. A **DISTRESS WAIT** message is displayed.



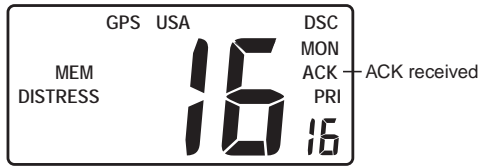
- When an **ACK** is received, the distress mode is automatically cancelled and voice communication will be on channel 16.

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#### NOTE

The Coast Guard is the only agency allowed to acknowledge (ACK) a Distress Call. An individual vessel's DSC radio will not respond automatically with an ACK.

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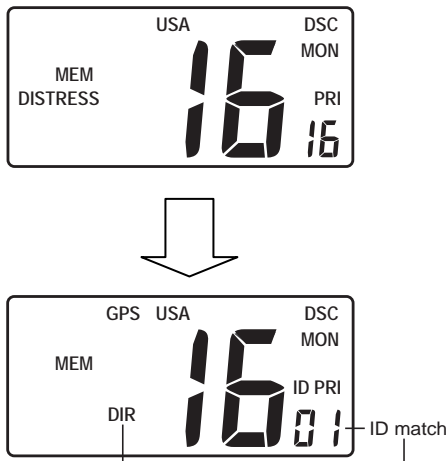


## 5.4 Receiving a Distress Call

A reception of a Distress Call automatically establishes a Voice Communication on channel 16. If the calling vessel is listed in your DSC calling Directory, the number of Directory location will be displayed below the ID annunciator. If the calling vessel is not listed in your Directory, the **NEW** annunciator will appear and the ID annunciator blinks.

LL position of the vessel in Distress can be transferred to your DSC equipped chart plotter, if it is connected. Otherwise, get it by voice communications with the vessel in Distress.

Press the **16/9** Key to cancel the loud alarm. If you wish to contact the vessel in Distress, press the **PTT** button on the Mike.



### NOTE

The Radio does not respond to two types of DSC Distress calls:

1. Distress Relay from an intermediary vessel.
2. Distress Relay ACK messages from a coast station.



## 5.5 Normal DSC Calls

In addition to Distress Call, your *DSC-900* can transmit the following types of DSC calls;

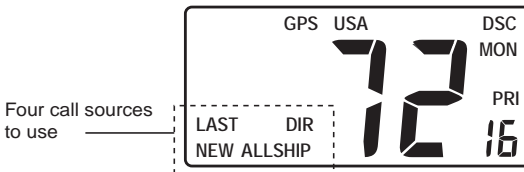
1. All Ship's Call – sends a Routine DSC Call to any vessel in range of you.
2. Directory Call – sends a Routine Individual Call to any of 10 stored MMSI.
3. New Call – sends a Routine Individual Call by manually entering MMSI of a new vessel not in the directory.
4. Last Call – sends back a Routine Individual Call to the last incoming DSC call.

Also *DSC-900* can transmit the calls of advanced Routine Individual Call; Position Send, and Position Request. LL position from another vessel can be transferred to the DSC equipped chart plotter, if it is connected.

A normal DSC call may be originated from your vessel to another DSC equipped vessel, or you may reply to a DSC call sent by another vessel. Outgoing calls are made either by selecting a vessel MMSI from your Directory or by manually entering (Position Send and Position Request are made from your Directory only).

To access to the above DSC calls:

- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to scroll through the four choices. The **LAST** always appears first.



### All Ship's Call

The All Ship's call allows you to send a Routine DSC call to nearby vessels without having to know their MMSI numbers. The All Ship's call may be used in situations that are serious but do not warrant a distress call, and voice communication attempts have failed. All Ship's Urgency or Safety calls are not supported in this radio.

To send an All Ship's call:

- Press the **CALL** key. The **LAST** annunciator is blinking.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **ALLSHIP**.



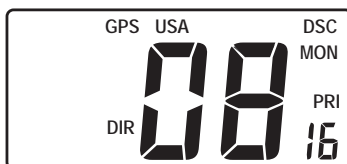
- Press the **CALL** key to transmit.
- Your transceiver is automatically set to channel 16. Listen for voice replies from vessels which have received your call. There is no DSC ACK reply to confirm that your call was received.
- Use the **PTT** button to continue voice communication.

### Directory Call

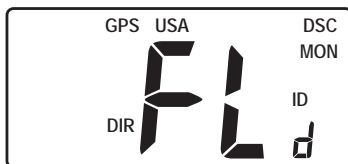
Directory call sends a Routine Individual call by selecting a vessel MMSI from the calling Directory. Calling Directory holds 10 of your previously entered MMSI numbers that you routinely contact during normal boating activities.

To make a Directory call:

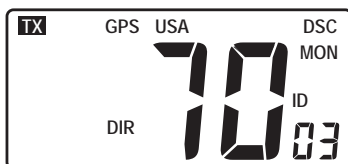
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a working channel to be used for the call.
- Press the **CALL** key. The **LAST** annunciator is blinking.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **DIR**.



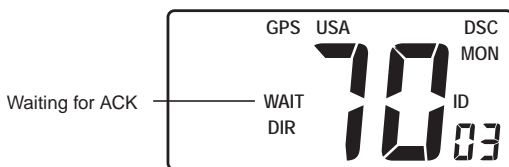
- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a MMSID location number (1-10). Default number is the MMSI of the last used call.
- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the **d** in the bottom right corner of the LCD (Default display is always **d**).



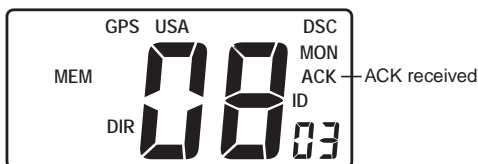
- Press the **CALL** key. The channel number in the Big Digit is blinking. Confirm the channel to be used for the call.
- Press the **CALL** key to transmit. Radio switches to channel 70.



- While waiting for acknowledgement from the called vessel, **WAIT** annunciator is displayed.



- Then channel reverts to the selected working channel. When the called vessel acknowledges your call, an alert sounds and **ACK** annunciator is displayed.



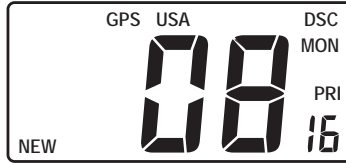
- Press the **PTT** key to silence the alert and begin voice communication with the called vessel.
- The **16/9** key may be used to exit the DSC calling procedure at any time prior to sending the call.

### New Call

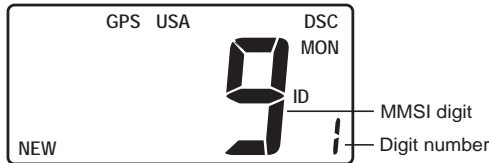
The New call procedure is used to make a Routine Individual call to a vessel that is not listed in your calling Directory. However, you must know the MMSI for the vessel.

To make a New call:

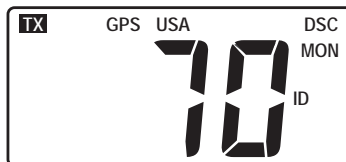
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a working channel to be used for the call.
- Press the **CALL** key. The **LAST** annunciator is blinking.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **NEW**.



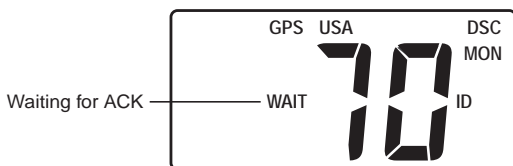
- Press the **CALL** key. The 1st digit of the last entered MMSI is displayed.



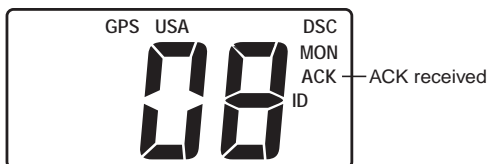
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 1st digit of MMSI.
- Press the **MEM** key to advance to the 2nd digit.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the 2nd digit of MMSI and press the **MEM** key to advance to the next digit. Repeat this operation until all 9 digits have been entered and verified by you.
- If you make mistake, press the **16/9** Key to exit this procedure and try again.
- After you completely entered the MMSI, press the **CALL** key to transmit. Radio switches to channel 70.



- While waiting for acknowledgement from the called vessel, **WAIT** annunciator is displayed.



- Then channel reverts to the selected working channel. When the called vessel acknowledges your call, an alert sounds and **ACK** annunciator is displayed.



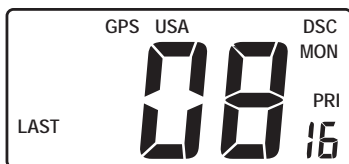
- Press the **PTT** key to silence the alert and begin voice communication with the called vessel.
- The **16/9** key may be used to exit the DSC calling procedure at any time prior to sending the call.

### Last Call

Only the Last received call can be called back with the Routine Individual Call.

To reply to the Last incoming call:

- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a working channel to be used for the call.
- Press the **CALL** key. The **LAST** annunciator is blinking.



- Press the **CALL** key. The channel number in the Big Digit is blinking. Confirm the channel to be used for the call.
- Press the **CALL** key to transmit. A Routine Individual call is transmitted regardless of the type of the Last incoming call.
- If there is no Last call information stored, the transmission is blocked and an error beeps.

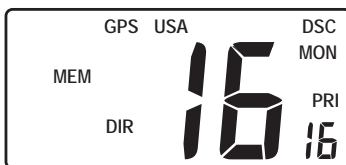
- When the called vessel acknowledges your call, press the **PTT** key and establish the voice communication.

### Position Send (P1)

Position Send can send your LL position to another vessel that is listed in your calling Directory.

To make a Position Send:

- Press the **CALL** key. The **LAST** annunciator is blinking.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **DIR**.



- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a MMSID location number (1-10). Default number is the MMSI of the last used call.
- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the **P1** in the bottom right corner of the LCD.



- Press the **CALL** key to transmit. Radio switches to channel 70 momentarily and then reverts to the previous working channel.
- Press the **16/9** key to return to the Normal Communication screen.

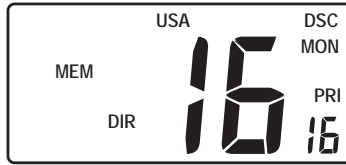
### Position Request (P2)

Position Request can request the LL position from another vessel that is listed in your calling Directory.

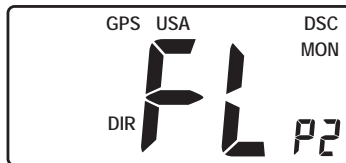
To make a Position Request:

- Press the **CALL** key. The **LAST** annunciator is blinking.

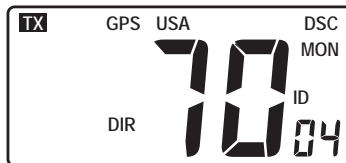
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select **DIR**.



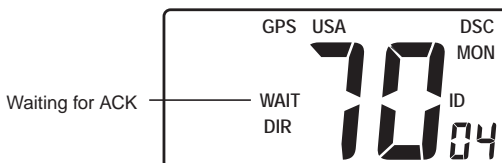
- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select a MMSID location number (1-10). Default number is the MMSI of the last used call.
- Press the **CALL** key.
- Use the **SELECTOR** or **UP/DOWN** keys on MIC to select the **P2** in the bottom right corner of the LCD.



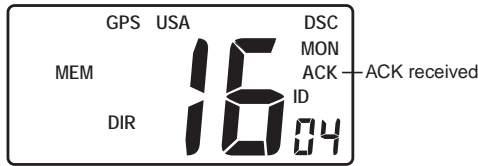
- Press the **CALL** key to transmit. Radio switches to channel 70.



- While waiting for acknowledgement from the called vessel, **WAIT** annunciator is displayed.



- Then channel revert to the previous working channel. When the called vessel acknowledges your call, an alert sounds and **ACK** annunciator is displayed.



- Press the **16/9** key to silence the alert. The LL position of called vessel will be displayed on the DSC equipped chart plotter, if it is connected.

## 5.6 Receiving DSC Calls

Your transceiver can receive the following types of DSC calls;

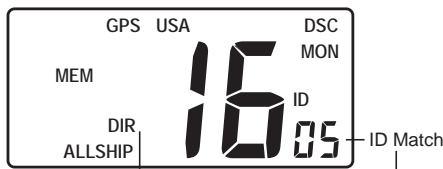
1. All Ship's Call – receives Routine, Urgent or Safety All Ship's Calls from other vessels in range of you.
2. Individual Call – receives a Routine Individual Call from other vessel.
3. Geographic Call – receives calls from specially equipped radios if you are in a particular geographical area.

Also *DSC-900* can receive the calls of advanced Routine Individual Call; Position Send, and Position Request. LL position from another vessel can be transferred to the DSC equipped chart plotter, if it is connected.

### All Ship's Call Received

An All Ship's call is received from other vessels within VHF range of the transmitter. Your transceiver can receive the All Ship's call with Routine, Urgent or Safety priorities.

When an All Ship's call is received, an alert sounds and the following screen appears in the display.



If the calling vessel is listed in your DSC calling Directory, the number of Directory location will be displayed below the **ID** annunciator. If the calling vessel is not listed in your Directory, the **NEW** annunciator will appear and the **ID** annunciator blinks. Also, your transceiver is set to channel 16 by the caller.

- Press the **16/9** key to silence the alert sound and listen for a voice announcement.



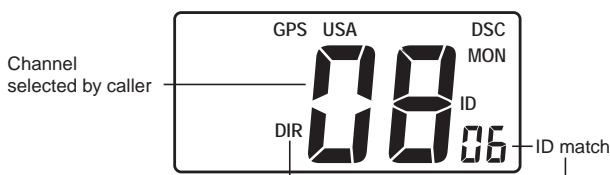
There is no DSC ACK for All Ship's calls.

- Press the **PTT** button if it is necessary to answer the call with voice communication. Use the channel selected by the caller.

### Individual Call Received

When you receive the Individual call from another vessel, your transceiver automatically sends an ACK message to the caller. Also, your transceiver is set to a working channel selected by the caller.

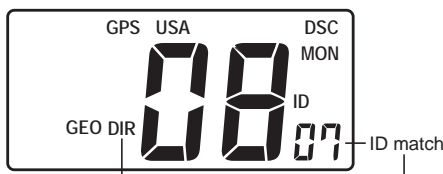
If the calling vessel is listed in your DSC calling Directory, the **DIR** annunciator will appear and the number of Directory location is displayed below the **ID** annunciator. If the calling vessel is not listed in your Directory, the **NEW** annunciator will appear and the **ID** annunciator blinks.



- Press the **16/9** key to silence the alert. The caller should respond to your ACK with voice communication. If not, you may initiate voice communication.

### Geographic Call Received

Your transceiver can receive a Geographic call. An alert sounds and it is set to a working channel selected by the caller. There is no ACK required from your radio. If the calling vessel is listed in your DSC calling Directory, the number of Directory location will be displayed below the **ID** annunciator.



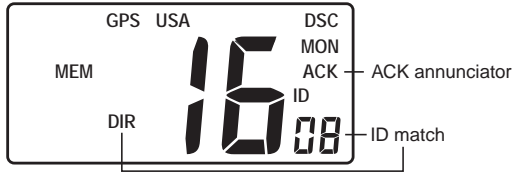
- Press the **16/9** key to silence the alert and listen for a voice announcement.

### Position Send Received

When you receive the Position Send from another vessel, an alert sounds and **ACK** annunciator appears in the display.

If the calling vessel is listed in your DSC calling Directory, the **DIR** annunciator will

appear and the number of Directory location is displayed below the **ID** annunciator. If the calling vessel is not listed in your Directory, the **NEW** annunciator will appear and the **ID** annunciator blinks.

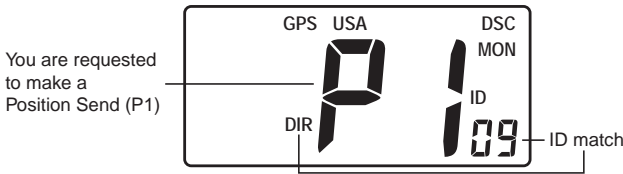


- Press the **16/9** key to silence the alert. LL position from another vessel is transferred to the DSC equipped chart plotter, if it is connected.

### Position Request Received

When you receive the Position Request from another vessel, an alert sounds and **P1** is displayed in the Big Digits. It shows that you are requested to transmit the Position Send call (P1).

If the calling vessel is listed in your DSC calling Directory, the **DIR** annunciator will appear and the number of Directory location is displayed below the **ID** annunciator. If the calling vessel is not listed in your Directory, the **NEW** annunciator will appear and the **ID** annunciator blinks.



- Press the **CALL** key to send your position.
- To silence the alert without replying, press the **16/9** key. Then press it again to return to the Normal communication screen.

## 6. SPECIFICATIONS

### General

Channel	All USA, International and Canadian, plus 10 Weather channels
Input Voltage	12 V DC, Negative ground
Dimensions	6.3 (W) x 2.7 (H) x 6.5 (D) inches Heat sink is included. Not bracket.
Weight	2.2 lbs. with MIC
Waterproof ness	JIS-7
FCC Approval	Part 80 / Part 15
DSC Call Format	RTCM SC-101

### Transmitter

Channels	54
Frequency range	156.025 MHz – 157.425 MHz
Frequency stability	0.001 %
Channel spacing	25 KHz
Temperature range	-20 °C to +50 °C
Antenna impedance	50 ohms
Spurious and harmonics Emission	-70 dB
Transmit power	Low 1 Watt / High 25 Watts
Modulation	16K0F3E/16K0G2B
Current drain	Low power : 1.2 amps High power : 5.0 amps
Microphone type	ECM

## **Receiver**

<b>Channels</b>	<b>80 Marine / 10 Weather</b>
<b>Frequency range</b>	<b>156.050 MHz – 163.275 MHz</b>
<b>Sensitivity</b>	<b>0.5 microvolt at 12 dB SINAD</b>
<b>Squelch sensitivity</b>	<b>Threshold 0.35 microvolt Tight 1.0 microvolt</b>
<b>Spurious and Image rejection</b>	<b>-70 dB</b>
<b>Intermodulation rejection</b>	<b>-68 dB</b>
<b>Audio output</b>	<b>2.8 Watts into 8 ohms</b>
<b>Receiver current</b>	<b>1.0 amps at 12V DC</b>

\* Specifications subject to change without notice.

## 7. CHANNEL ASSIGNMENT

MARINE VHF CHANNELS							
CH	U	I	C	S/D	TX	RX	CH USAGE
01A	X			S	156.050		Port operation and commercial. VTS in selected areas.
01		X	X	D	156.050	160.650	Public correspondence (Marine operator).
02		X	X	D	156.100	160.700	Public correspondence (Marine operator).
03A	X			S	156.150		U.S. Government only, Coast Guard.
03		X	X	D	156.150	160.750	Public correspondence (Marine operator).
04A			X	S	156.200		Pacific coast: Coast Guard, East coast: Commercial fishing.
04		X		D	156.200	160.800	Public correspondence (Marine operator), Port operation, Ship movement.
05A	X		X	S	156.250		Port operation. VTS in Seattle.
05		X		D	156.250	160.850	Public correspondence (Marine operator), Port operation, Ship movement.
06	X	X	X	S	156.300		Intership Safety.
07A	X		X	S	156.350		Commercial.
07		X		D	156.350	160.950	Public correspondence (Marine operator), Port operation, Ship movement.
08	X	X	X	S	156.400		Commercial (Intership only).
09	X	X	X	S	156.450		Boater calling channel, Commercial and noncommercial (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		Intership navigation safety (bridge to bridge). *1
14	X	X	X	S	156.700		Port operation. VTS in selected areas.
15	X			S	---	156.750	Environmental (Receive only).
15		X	X		156.750		Commercial, noncommercial, Ship movement. *2
16	X	X	X	S	156.800		International Distress, Safety and Calling.
17	X	X	X	S	156.850		State controlled. *2
18A	X		X	S	156.900		Commercial.
18		X		D	156.900	161.500	Port operation, Ship movement.
19A	X			S	156.950		U.S. Commercial.
19A			X	S	156.950		Coast guard.
19		X		D	156.950	161.550	Port operation, Ship movement.
20A	X			S	157.000		Port operation.
20		X	X	D	157.000	161.600	Canada: Coast Guard only. International: Port operations and Ship movement.
21A	X		X	S	157.050		U.S. Government only. Canada: Coast Guard.
21		X		D	157.050	161.650	Port operation, Ship movement.
22A	X		X	S	157.100		U.S. and Canadian Coast Guard Liaison and Maritime Safety Information Broadcasts announced on channel 16.
22		X		D	157.100	161.700	Port operation, Ship movement.
23A	X			S	157.150		U.S. Government only.
23		X	X	D	157.150	161.750	Public correspondence (Marine operator).
24	X	X	X	D	157.200	161.800	Public correspondence (Marine operator).
25	X	X	X	D	157.250	161.850	Public correspondence (Marine operator).
26	X	X	X	D	157.300	161.900	Public correspondence (Marine operator).
27	X	X	X	D	157.350	161.950	Public correspondence (Marine operator).
28	X	X	X	D	157.400	162.000	Public correspondence (Marine operator).

\*1: 1 Watt in USA mode. Hold down H/L/O key while pressing PTT for full transmit power. \*2: 1 Watt only.

MARINE VHF CHANNELS							
CH	U	I	C	S/D	TX	RX	CH USAGE
60		X	X	D	156.025	160.625	Public correspondence (Marine operator).
61A	X		X	S	156.075		U.S. Government only, Canada: Coast Guard Pacific coast, Commercial fishing East coast.
61		X		D	156.075	160.675	Public correspondence (Marine operator), Port operation, Ship movement.
62A			X	S	156.125		Pacific coast: Coast Guard, East coast: Commercial fishing only.
62		X		D	156.125	160.725	Public correspondence (Marine operator), Port operation, Ship movement.
63A	X		X	S	156.175		Port operation and commercial. VTS in selected areas.
63		X		D	156.175	160.775	Public correspondence (Marine operator), Port operation, Ship movement.
64A	X		X	S	156.225		U.S. Government only, Canada: Commercial fishing.
64		X		D	156.225	160.825	Public correspondence (Marine operator), Port operation, Ship movement.
65A	X		X	S	156.275		Port operations.
65		X		D	156.275	160.875	Public correspondence (Marine operator), Port operation, Ship movement.
66A	X		X	S	156.325		Port operations.
66		X		D	156.325	160.925	Public correspondence (Marine operator), Port operation, Ship movement.
67	X	X	X	S	156.375		U.S. Commercial. Used for bridge to bridge communications in lower Mississippi River. Intership only. Canada: Commercial fishing. *1
68	X	X	X	S	156.425		Noncommercial (Recreational).
69	X	X	X	S	156.475		Noncommercial (Recreational). Canada: Commercial fishing only. International: Port operations and ship movement.
70	X	X	X	S	156.525		Digital Selective Calling (DSC). Voice communication not allowed.
71	X	X	X	S	156.575		U.S. & Canada: Noncommercial (Recreational). International: Port operations and ship movement.
72	X	X	X	S	156.625		Noncommercial (Intership only).
73	X	X	X	S	156.675		U.S. Port operations. Canada: Commercial fishing only. International: Intership, Port operations and ship movement.
74	X	X	X	S	156.725		U.S. Port operations. Canada: Commercial fishing only. International: Intership, Port operations and ship movement.
77	X	X	X	S	156.875		Port operations (Intership only). *2
78A	X		X	S	156.925		Noncommercial (Recreational).
78		X		D	156.925	161.525	Public correspondence (Marine operator), Port operation, Ship movement.
79A	X		X	S	156.975		Commercial.
79		X		D	156.975	161.575	Port operations and ship movement
80A	X		X	S	157.025		Commercial.
80		X		D	157.025	161.625	Port operations and ship movement
81A	X		X	S	157.075		U.S. Government only, Environmental protection operations.
81		X		D	157.075	161.675	Port operations and ship movement
82A	X		X	S	157.125		U.S. Government only. Canada: Coast Guard only.
82		X		D	157.125	161.725	Public correspondende (Marine operator), Port operation, Ship movement.
83A	X		X	S	157.175		U.S. Government only. Canada: Coast Guard only.
83		X		D	157.175	161.775	Public correspondence (Marine operator).
84	X	X	X	D	157.225	161.825	Public correspondence (Marine operator).
85	X	X	X	D	157.275	161.875	Public correspondence (Marine operator).
86	X	X	X	D	157.325	161.925	Public correspondence (Marine operator).
87	X	X	X	D	157.375	161.975	Public correspondence (Marine operator).
88A	X			S	157.425		Commercial, Intership only.
88		X	X	D	157.425	162.025	Public correspondende (Ship to coast).

\*1: 1 Watt in USA mode. Hold down HI/LO key while pressing PTT for full transmit power. \*2: 1 Watt only.

**NOAA WEATHER CHANNELS (NORTH AMERICA ONLY)**

<b>CH</b>	<b>U</b>	<b>I</b>	<b>C</b>	<b>S/D</b>	<b>TX</b>	<b>RX</b>	<b>CH USAGE</b>
WX01	X	X	X	---	---	162.550	Weather (Receive only).
WX02	X	X	X	---	---	162.440	Weather (Receive only).
WX03	X	X	X	---	---	162.475	Weather (Receive only).
WX04	X	X	X	---	---	162.425	Weather (Receive only).
WX05	X	X	X	---	---	162.450	Weather (Receive only).
WX06	X	X	X	---	---	162.500	Weather (Receive only).
WX07	X	X	X	---	---	162.525	Weather (Receive only).
WX08	X	X	X	---	---	161.650	Weather (Receive only).
WX09	X	X	X	---	---	161.775	Weather (Receive only).
WX10	X	X	X	---	---	163.275	Weather (Receive only).

## **CERTIFICATE OF LIMITED WARRANTY**

Providing you present a valid proof of purchase, SI-TEX Marine Electronics, Inc. warrants all parts of each new product against defects in material and workmanship under normal use and will repair or exchange any parts proven to be defective at no charge for a period of two years for parts and one year for labor from the date of purchase, except as provided below under Limited Warranty Exceptions. Defects will be corrected during normal working hours by an authorized SI-TEX Marine Electronics, Inc. dealer, service center or at the SI-TEX office in St. Petersburg, Florida. There will be no charge for labor for a period of one year from the date of purchase, except as provided below under Limited Warranty Exceptions.

This warranty and proof of Purchase must be made available to the authorized SI-TEX Marine Electronics, Inc. service location or dealer at the time of service.

### **LIMITED WARRANTY EXCEPTIONS**

SI-TEX Marine Electronics, Inc. will not be responsible for equipment which has been subjected to water or lightning damage, accident, abuse or misuse nor any equipment on which the serial number label has been removed, altered or mutilated. SI-TEX Marine Electronics, Inc. assumes no responsibility for damage incurred during installation. This Limited Warranty is effective only with respect to the original purchaser. Travel cost incurred will not be accepted for SI-TEX Marine Electronics, Inc. products.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

### **SPECIFIC EXCLUSIONS**

Charges for overtime, stand-by, holiday, and per diem are specifically excluded from the Limited Warranty. Consumable items like fuse, etc. are not covered by this Limited Warranty. Installation workmanship or materials except as provided directly by SI-TEX Marine Electronics, Inc. are not covered by this Limited Warranty. SI-TEX Marine Electronics, Inc. equipment or parts there of which have been repaired or altered except by an authorized SI-TEX Marine Electronics, Inc. dealer or service center are not warranted in any respect. Software update, battery, microphone and water damage on water resistant VHF radio are items excluded from the two-year warranty and are covered by warranty for a period of one year for both parts and labor. SI-TEX Marine Electronics, Inc. will not, at any time, assume any costs or labor charges for checkout or external line fuse replacement or problems not found to be at fault in the equipment itself.

THERE ARE NO WARRANTIES OR GUARANTEES EXPRESSED OR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANT ABILITY.



SI-TEX MARINE ELECTRONICS, INC. HAS NO OTHER LIABILITY TO PURCHASE FOR DIRECT OR CONSEQUENTIAL DAMAGE OR ANY THEORY INCLUDING ABSOLUTE LIABILITY, TORT, OR CONTRACT. THIS LIMITED WARRANTY CANNOT BE ALTERED OR MODIFIED IN ANY WAY AND SHALL BE INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF FLORIDA. THIS WARRANTY IS LIMITED TO THE CONTINENTAL USA, ALASKA, HAWAII, AND CANADA.

**HOW TO OBTAIN SERVICE UNDER THIS WARRANTY**

To provide greater flexibility, SI-TEX Marine Electronics, Inc. gives you the option of obtaining service under this warranty by either:

- a) Contacting an authorized SI-TEX Marine Electronics, Inc. service station (the closest service station may be found by contacting your dealer of purchase).

OR

- b) Shipping your equipment prepaid UPS or truck with insurance prepaid to SI-TEX Marine Electronics, Inc. at the address provided below. SI-TEX Marine Electronics, Inc. will, whenever possible, make all repairs covered by the Limited Warranty within two weeks of receiving the equipment in Florida and return same to you, freight prepaid.
- c) You must present a copy of your Purchase Sales Slip at the time you request warranty service.

Shipping/Mailing Address:

SI-TEX Marine Electronics, Inc.  
11001 Roosevelt Blvd., Suite 800  
St. Petersburg, FL 33716  
(727) 576-5734

**SI-TEX** Marine Electronics, Inc.

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Phone: (727) 576-5734

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Web Site: [www.si-tex.com](http://www.si-tex.com)