

GX1250S

Horizon Eclipse+

25 watt VHF/FM
Marine Transceiver

Owner's Manual

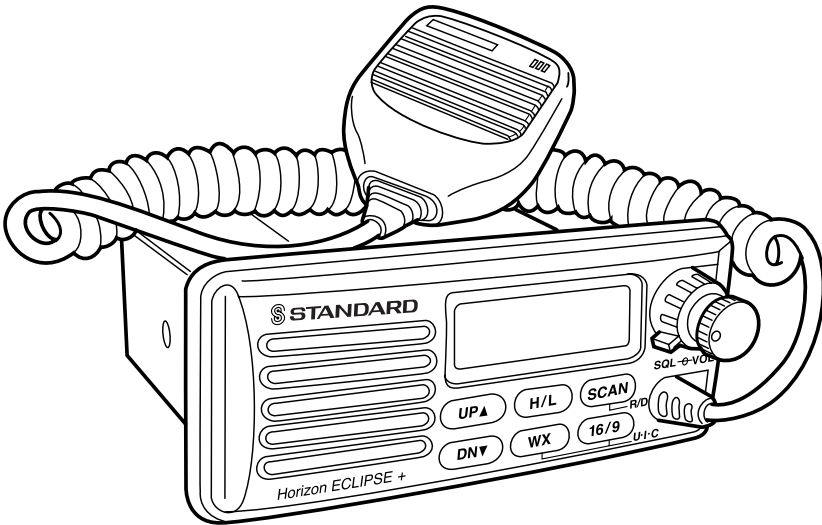


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1	GENERAL INFORMATION
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1.1 INTRODUCTION

The Standard Communications Corp. (SCC) GX1250S Eclipse+ is a VHF transceiver designed for use in the frequency range of 156.050 to 163.275 MHz. It requires 13.8 VDC for operation.

The transceiver has 65 channels: 55 marine and 10 weather. The 55 marine channels are switchable to comply with either USA, International, or Canadian regulations. It has an emergency channel 16 which can be immediately selected from any channel by pressing the red 16/9 key. Weather channels can be also be accessed immediately by pressing the WX key.

The power output is 25 watts in high range and 1 watt in the low range. These ranges are manually selected by the front-panel H/L key, except on channels where low range power is mandatory. On these channels low range is automatically selected.

1.2 FCC/DOC INFORMATION

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

FCC Type Accepted.....FCC Part 80
Output Power1 watt (Low) and 25 watts (High)
Emission16F3
Frequency Range156.050 to 163.275 MHz
FCC Type Number.....APV0493
DOC Type Approval.....363822161LVCA

Additional FCC and DOC data, including licensing requirements, are contained in the companion document titled OWNER'S MANUAL SUPPLEMENT. The document also contains charts for VHF channel assignments, transceiver procedures, maintenance, factory service information, and warranty data.

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ACCESSORIES

2.1 PACKING LIST

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

- GX1250S Eclipse+ Transceiver.
- CMP348W Microphone (Attached to the transceiver).
- Mounting Bracket and attaching hardware.
- Power Cable.
- Owner's Manual.
- Owner's Manual Supplement.
- Hanger Kit for Microphone.

2.2 OPTIONS

CMB16	Flush-Mount Bracket
201S	Remote Extension Speaker with RCA Phono Plug
201SZ	Flush-mount Speaker
101	Extension Speaker

2.3 REPLACEMENT PARTS

Microphone Assembly	MP51000240
Microphone Hanger	277X155020
Mounting Bracket.....	175B160020
Mounting Bracket Knob	414C154022
Volume Knob	175B154500
Squelch Knob	175B154010

Refer to Figure 1 for the location of the following controls, indicators, and connections:

3.1 CONTROLS AND CONNECTIONS

① POWER SWITCH/VOLUME CONTROL

Turns the transceiver on and off, and adjusts the volume.

② SQUELCH CONTROL

Sets the point at which random noise on the channel does not activate the audio circuits but a received signal does. This point is called the squelch threshold. Further adjustment of the squelch control degrades reception of wanted transmissions.

③ KEY PAD

UP KEY

Selects the desired channel. Each press increases the channel number. When held down, channels increase continuously.

DN KEY

Selects the desired channel. Each press decreases the channel number. When held down, channels decrease continuously.

H/L KEY

Toggles between high and low transmitting power. This key does not operate on “low power only” and transmission-inhibited channels. When held down while the transceiver is on channel 13 or 67, the power temporarily enters high range.

WX KEY

Immediately recalls a weather channel 01 from any channel location. Reverts the transceiver to the previous channel when pressed twice after 16/9 key is pressed.

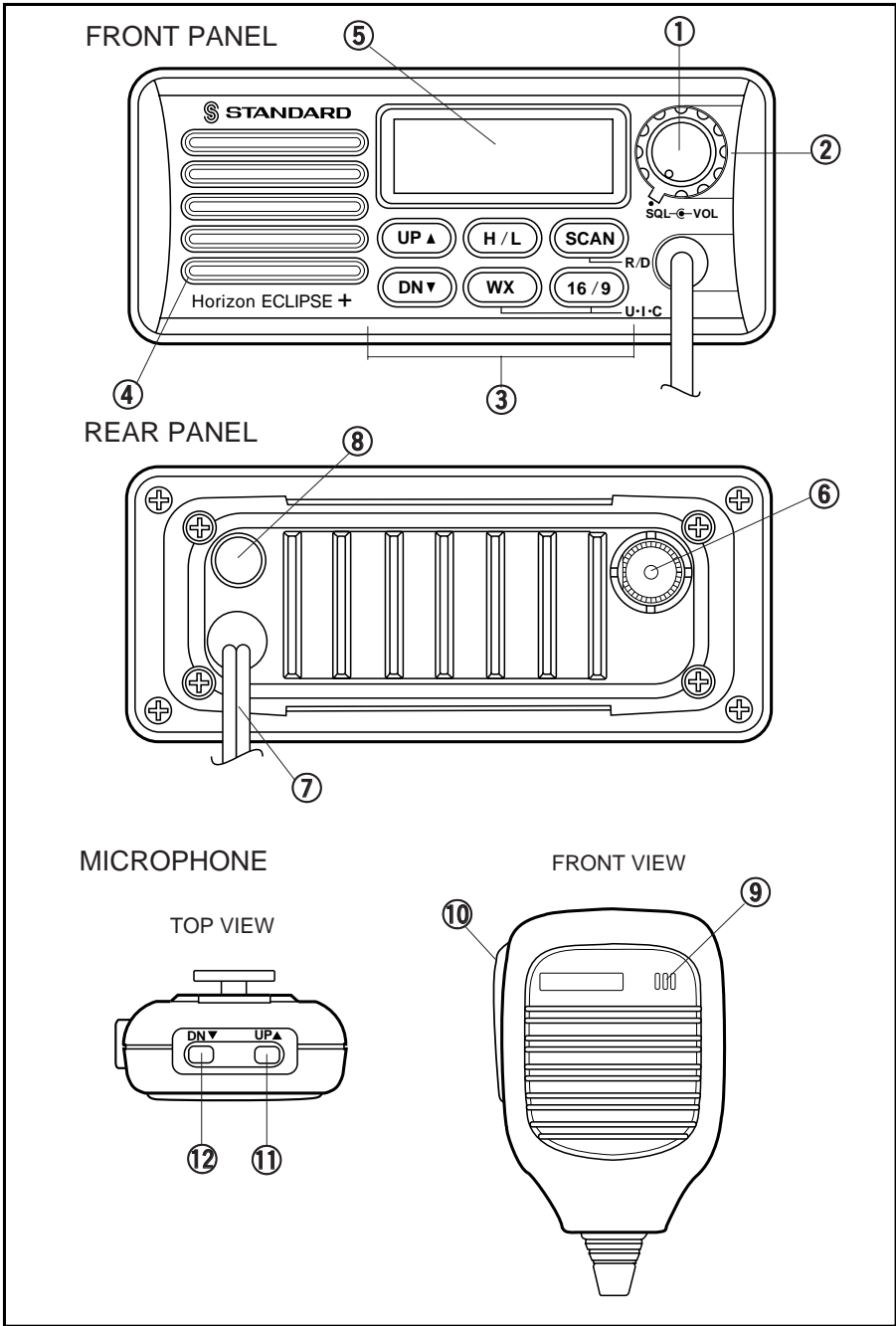


Figure 1. Controls and Connectors

SCAN KEY

Starts and stops scanning programmed channels. Holding down this key, scanning channels are programmed.

16/9 KEY

Immediately recalls channel 16 from any channel location. Holding down this key recalls channel 9. When held down while pressing the WX key, changes the mode from USA to International or Canadian. When held down while turning the power on, microprocessor is reset and scan channels are erased.

④ SPEAKER

⑤ LIQUID-CRYSTAL DISPLAY (LCD)

See Section 3.2 for Indicators.

⑥ ANTENNA JACK

Connects the antenna to the transceiver. Use a marine VHF antenna with an impedance of 50 ohms.

⑦ DC INPUT CABLE

Connects the transceiver to a DC power supply of 13.8 V.

⑧ EXTERNAL SPEAKER JACK

Connects an optional external speaker to the transceiver. Use a speaker with an impedance of 4 or 8 ohms, with an RCA phono plug.

⑨ MICROPHONE

Transmits a voice message.

⑩ PUSH-TO-TALK (PTT) SWITCH

Activates transmission.

⑪ UP KEY

Selects the desired channel. Each press increases the channel number. When held down the channel numbers increase continuously.

⑫ DOWN KEY

Selects the desired channel. Each press decreases the channel number. When held down the channel numbers decrease continuously.

3.2 INDICATORS

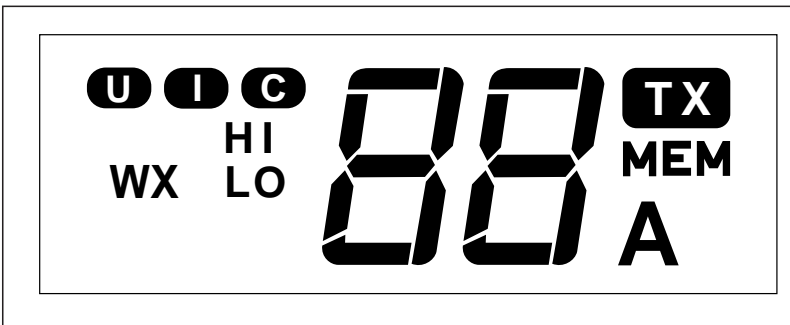


Figure 2. Indicators

The LCD on the transceiver has several symbols and indicators that should be understood by the user before operating the unit. Figure 2 shows all of these symbols and indicators, although it is not possible to see them at the same time.

U/I/C Indicator

Indicates the mode of operation (USA, International or Canadian) for a particular channel.

WX Indicator

Indicates a weather channel.

TX Indicator

Transmission indicator. The TX indicator appears when the PTT switch is pressed and it is O.K. to transmit.

MEM Indicator

Indicates the channel is memorized in the transceiver's memory.

A Indicator

Indicates a simplex channel in USA or Canadian mode whose counterpart in the International mode is a duplex channel.

7-SEGMENT Display

Displays the channel number in use.

HI/LO Indicator

Indicates the power setting. "HI" 25 watts and "LO" 1 watt. This display is blank if a transmission-inhibited channel is selected.

4.1 FREQUENCY AND DEVIATION TESTS

FCC regulations require that the transceiver's deviation and frequency be tested before initial installation or operation. This test should be performed by a Certified Marine Technician.

4.2 LOCATION

1. The transceiver can be mounted at any angle. Choose a mounting location that:
 - is far enough from any compass to avoid erroneous compass reading due to the speaker magnet
 - provides protection from sea spray and rain
 - provides accessibility to the front panel controls
 - allows connection to a power source and an antenna
 - has nearby space for installation of a microphone hanger
2. Install the unit in accordance with paragraph 4.3 or 4.4.

In each appears an instruction to connect the power supply and antenna. Where that appears, the following three steps should be performed:

- a. At the rear of the transceiver, connect the antenna cable to the antenna jack. The antenna must have a PL259 connector. RG8 or RG213 coaxial cable must be used if the antenna is 25 feet or more from the transceiver. RG58 cable can be used for distances less than 25 feet.
- b. Connect the red power cord to a 13.8 VDC \pm 20 % power source. Connect the black power cord to negative ground. See Figure 3 for this step .
- c. It is advisable to have a Certified Marine Technician check the power output and the standing wave ratio of the antenna after installation.

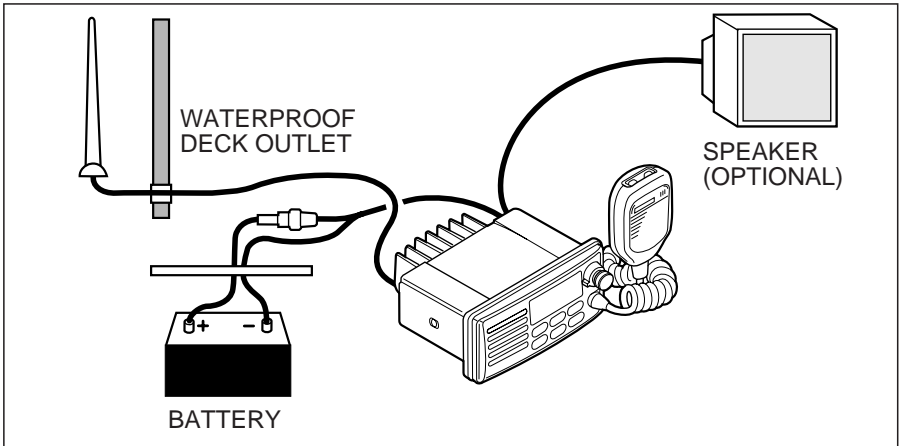


Figure 3. General Installation

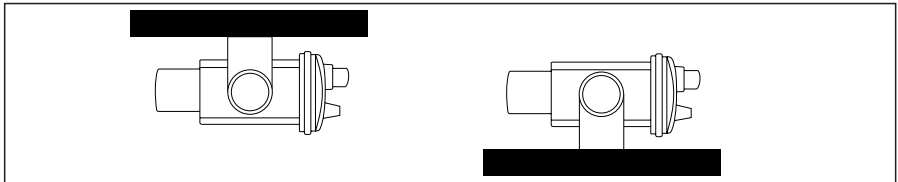


Figure 4. Regular Mounting Bracket

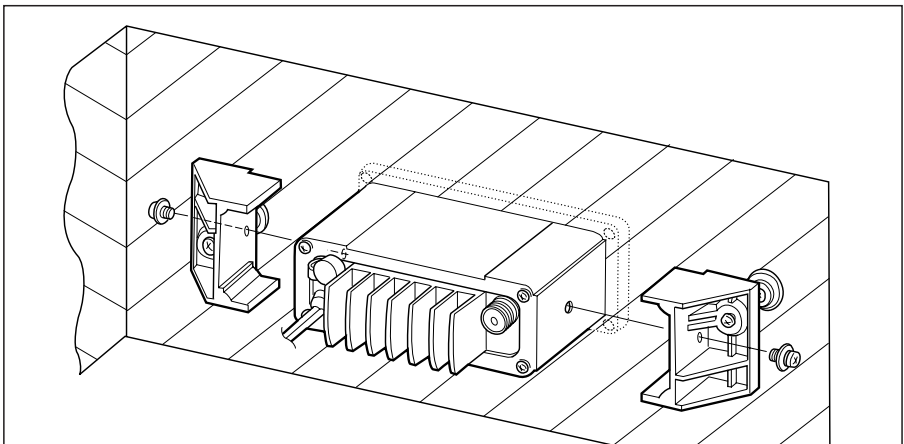


Figure 5. CMB16 Mounting Bracket

4.3 INSTALLATION USING REGULAR MOUNTING BRACKET

1. Mount the bracket using the washers, nuts, and long hex head bolts.
2. Thread the mylar washers onto the mounting bracket knobs.
3. Position the transceiver within the bracket arms, matching the transceiver notches to obtain the desired positioning.
4. Secure the transceiver to the brackets with the mounting knobs (see Figure 4).
5. Connect the antenna and power cables (and optional speaker) to the transceiver.

4.4 INSTALLATION USING CMB16 FLUSH MOUNT BRACKET (Optional)

Refer to Figure 5 for the following procedure.

1. Use the template supplied with the CMB16 to mark the location (inner template) where the rectangular hole (5-5/16 by 2-1/16 inches) is to be made. Confirm the space behind the dash or panel is deep enough to accommodate the transceiver. There should be at least 1/2 inch between the transceiver's heatsink (fins) and any wiring, cables or structures.
2. Cut out the rectangular hole and insert the transceiver.
3. Fasten the brackets to the sides of the transceiver with the lock washer nut combination, so the mounting screw base faces the mounting surface (see Figure 5).
4. Turn the adjusting screws to adjust the tension so the transceiver is against the mounting surface.

After the transceiver has been installed (see section 4), ensure the power supply and antenna are properly connected.

5.1 RECEPTION

1. Turn the POWER SWITCH/VOLUME CONTROL on.
2. Turn the volume control knob to the desired level.
3. Turn the SQUELCH CONTROL knob fully counterclockwise. This state is known as “squelch off”.
4. Turn up the volume until noise or audio from the speaker is at a comfortable level.
5. Select a channel that has no signal being received (no one is transmitting on the channel). Only noise should be heard.
6. Slowly turn the SQUELCH CONTROL knob clockwise and stop immediately after the noise disappears. This condition is known as the “Squelch Threshold”. If the SQUELCH CONTROL knob is turned clockwise past this point, weak signals are not received. No noise and no signals are heard until a signal is received that exceeds the squelch threshold.
7. To change channels, press the UP or DN key. Sometimes, a slight adjustment of the squelch threshold needs to be made, because some channels have a higher noise level than others.

Please refer to the Owner’s Manual Supplement for a complete listing of all USA, International and Canadian VHF Marine channels and their usages.

5.2 TRANSMISSION

1. Perform steps 1 through 7 of RECEPTION.
2. Before transmitting, monitor the channel and make sure it is clear.
THIS IS AN FCC REQUIREMENT!

3. Press the PTT (push - to - talk) switch. The TX indicator in the LCD is displayed.
4. Speak slowly and clearly into the microphone, hold the microphone about 1/2 to 1 inch away from your mouth.
5. When the transmission is finished, release the PTT switch.
6. Refer to the OWNER'S MANUAL SUPPLEMENT for standard transceiver operating procedures.

5.3 TRANSMIT TIME - OUT TIMER (TOT)

When the PTT switch is held down, transmission time is limited to 5 minutes. This prevents prolonged unintentional transmissions. About 10 seconds before automatic transmitter shutdown, a warning beep is heard from the speaker. The transceiver then automatically switches to the receiving mode, even if the PTT switch is still held down. Before transmitting again, the PTT switch must first be released and be pressed again.

5.4 USA, INTERNATIONAL AND CANADIAN MODES

1. To change the modes, hold down the 16/9 key and press the WX key. The mode changes from USA to International to Canadian with each press of the WX key.
2. "U" is displayed for the USA mode, "I" is displayed for International mode, and "C" is displayed for Canadian mode.
- 3 Refer to the OWNER'S MANUAL SUPPLEMENT for the allocated channels in each mode.

5.5 WEATHER CHANNELS

1. To receive a weather channel, press the WX key. The transceiver changes channel to the weather channel 01.
2. Press the UP or DN key to move to other weather channels.
3. To exit from the weather channels, press the WX key. The transceiver returns to the channel it was on prior to the weather channel.

5.6 SCANNING

1. Adjust the SQUELCH CONTROL until the background noise disappears.
2. Select the desired channel to be scanned using the UP or DN key.
3. Hold down the SCAN key until “MEM” is displayed.
4. Repeat steps 2 and 3 for the channels to be scanned.
5. To start scanning, press the SCAN key. Scanning proceeds from the lowest to the highest programmed channel number and stops on a channel where a transmission is received.
6. To stop scanning, press the 16/9, WX, SCAN key, or PTT switch.
7. To DELETE a channel from the transceiver’s memory, hold down the SCAN key while the memorized channel is displayed. “MEM” is deleted.

5.7 PRIORITY SCANNING

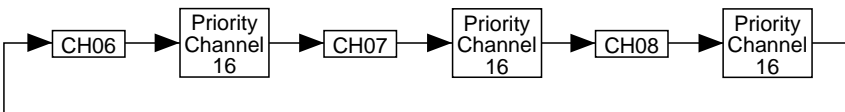
Emergency channel 16 can be set as the priority channel for scanning by performing the following:

1. Turn off the transceiver power.
2. Press and hold the SCAN key and turn the power back on. A “p” will be shown to the left of “16” on the display to indicate that priority scan is enabled.

NOTE

To scan or priority scan, 2 or more channels must be memorized in scan memory. See section 5.6 in the Owner’s Manual.

3. To start scanning, press the SCAN key. Scanning will proceed between the memorized channels and priority channel 16.
4. For example, channels 06, 07, and 08 are memorized in the transceiver’s memory, priority scanning will proceed in the following sequence:



5. Even when the transceiver stops and listens to the signal of a memorized channel, the transceiver will DUAL WATCH between this channel and the priority channel.
6. To disable priority scanning, turn off the transceiver power. Press and hold the SCAN key and turn the power back on. The “p” will disappear from the display to indicate that priority scan is disabled.

5.8 WEATHER ALERT

In the event of extreme weather disturbances such as storms and hurricanes, NOAA (National Oceanic and Atmospheric Administration) sends a weather alert accompanied by a 1050 Hz tone and subsequent weather reports on the weather channels. The transceiver is capable of receiving this alert if the following steps are performed:

1. Program weather channels into the transceiver’s memory for scanning. Follow the same procedure as used for regular channels in Section 5.6.
2. Press the SCAN key to start a scan.
3. The programmed weather channels are scanned along with the regular programmed channels. However, the scan does not stop for normal weather broadcast.
4. When an alert is received on a weather channel, scanning stops and the transceiver enters the WEATHER ALERT MODE.
5. When the transceiver is in the WEATHER ALERT MODE, a loud tone is sounded.
6. Press the WX key to stop the alert tone and receive the voice information on the weather channel.

5.9 EMERGENCY CHANNEL 16

1. To select the emergency channel, press the 16/9 key from any channel.
2. Transmit your emergency signal in the same manner as on regular channels. If you can not contact anyone on channel 16, switch to another channel.
3. See the OWNER'S MANUAL SUPPLEMENT for additional emergency operating practices.

5.10 CHANNEL 9

1. Channel 9 is used as a hailing channel for initial, non-emergency contact with other vessels. Hold down the 16/9 key to select channel 9.

5.11 OPERATING ON CHANNEL 13

Channel 13 is used at docks, bridges and for maneuvering in port. Messages on this channel must concern navigation only, such as meeting and passing in restricted waters. Messages must be short and low power used.

In emergencies and when approaching blind river bends, high power is allowed. Hold down the H/L key to temporarily switch to high power. Hi power can only be accessed in USA or Canadian modes

5.12 OPERATING ON CHANNEL 67

When channel 67 is used for navigational bridge-to-bridge traffic between ships, high power may be temporarily used in the USA mode, by holding down the H/L key.

For preventive maintenance and instructions on obtaining factory service, please refer to the OWNER'S MANUAL SUPPLEMENT. For general troubleshooting, refer to the Troubleshooting Chart.

TROUBLESHOOTING CHART		
SYMPTOM	PROBABLE CAUSE	REMEDY
Transceiver fails to power up.	No DC voltage to the transceiver or a blown fuse.	Check power cable for DC voltage or the replace the 6 A 250 V fuse.
Transceiver blows fuse upon connection of the power supply.	Reversed power connections.	Be sure the RED wire is connected to POSITIVE battery terminal and BLACK wire to NEGATIVE terminal. If the transceiver still blows the fuse, contact your SCC Dealer.
Popping or whining noise from speaker while the engine runs.	Engine noise.	Reroute DC power cables away from engine. Add noise suppressor to the power cable. Change to resistive spark plug wires and/or add an alternator whine filter.
External speaker plug does not fit into jack.	Incorrect plug on speaker cable.	The external speaker jack accepts only RCA phono plugs
Internal speaker turns off when external speaker is plugged in.	No problem.	Normal transceiver operation causes internal speaker cut-off when external speaker is plugged in.
Transceiver transmits but does not receive.	Channel mode.	The transceiver may be tuned to a duplex channel meant for ship-to-shore radiotelephone communications.
Transceiver transmits on low power only.	Antenna	Have antenna checked or test the transceiver with another antenna. If problem persists, contact your SCC Dealer.

Performance specifications are nominal, unless otherwise indicated, and are subject to change without notice.

7.1 GENERAL

Frequency Range.....	156.050 to 163.275 MHz
Channels.....	65 total: 55 marine + 10 weather
Input Voltage	13.8 VDC \pm 20 %
Current Drain:	
Standby	0.5 A
Receive	1.5 A
Transmit.....	6 A (Hi); 1.7 A (Lo)
Physical Characteristics.....	2.52" H x 5.91" W x 5.28" D (64 mm x 150 mm x 134 mm)
	1.68 lb. (0.76 Kg)
FCC Type Acceptance Number	APV0493
DOC Type Approval Number.....	363822161LVCA

7.2 TRANSMITTER

RF Output	25 W (Hi); 1W (Lo)
Conducted Spurious Emissions.....	65 dB (Hi); 50 dB (Lo)
FM Hum and Noise	40 dB min.
Audio Response	within +2/-8 of 6 dB/octave pre-emphasis
Audio Distortion	5 %
Modulation.....	16F3
Frequency Stability (-20° to +50°C).....	\pm 0.0005 %

7.3 RECEIVER

Sensitivity:	
20 dB Quieting.....	0.4 μ V
12 dB SINAD	0.35 μ V
Squelch Sensitivity (Threshold).....	0.2 μ V
Bandwidth	
Acceptable Radio Frequency Displacement.....	\pm 4.5 kHz
Selectivity:	
Spurious and Image Rejection	70 dB
Intermodulation and Rejection at 12 dB SINAD Sensitivity	65 dB
Audio Output 5% Distortion.....	4 W
Audio Response.....	within +2/-8 of a 6 dB/octave de-emphasis characteristic at 300 to 3000 Hz
Frequency Stability (-20° to +50°C).....	\pm 0.001 %
Channel Spacing	25 kHz



Standard Communication Corp.

P.O. Box 92151

Los Angeles, CA 90009-2151

Telephone 310/532-5300

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