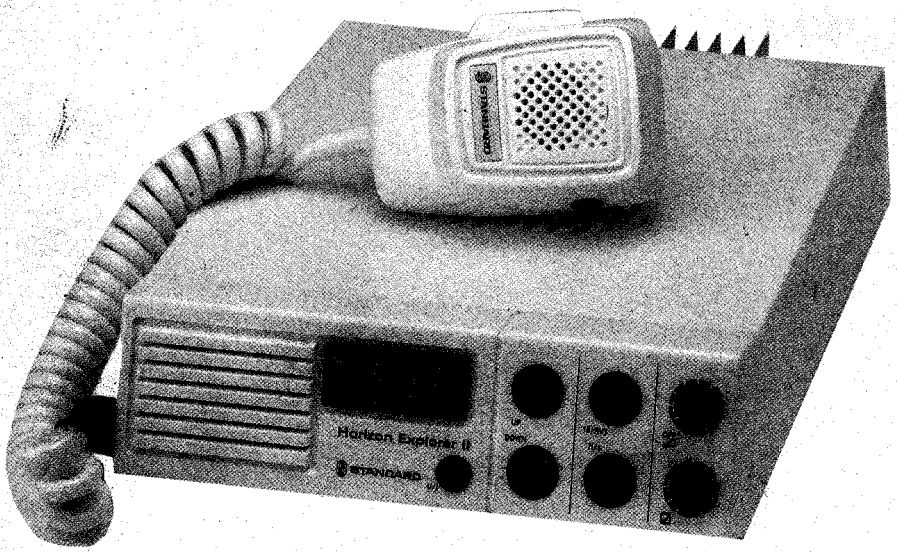
GX1220S Horizon Explorer II

25 Watt VHF/FM Marine Transceiver

Contains:

- ☐ Specifications
- ☐ General Information
- ☐ FCC Information
- ☐ Operation
- ☐ Maintenance and Care
- ☐ Schematic Diagram

Owner's Manual



Standard Communications

Specifications

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

GENERAL

Frequency Range	Receive 156.050 to 163.275 MHz Transmit 156.050 to 157.425 MHz
Number of Channels	55 Regular; 10 Weather; 10 Reserve or Private
Input Voltage	13.8 VDC
Current Drain (Standby)	500 mA
(Receive)	1.2 A
(Transmit)	6 A (high); 2 A (low)
Channel Spacing	25 kHz
Dimensions (HxWxL)	2.3 x 7.1 x 10.2 Inches
Weight	2.76 lb.
Compliance	FCC Part 80
FCC Type Acceptance Number	APV8J70387
DOC Approval	Pending

RECEIVER

Measurements are made in accordance with EIA Standard RS-204-B.

Sensitivity (12 dB SINAD)	0.32 uV max.
(20 dB Quieting)	0.35 uV max.
Squelch Sensitivity (Threshold)	0.25 uV max.
Modulation Acceptance Bandwidth	+7.0 kHz min.
Selectivity	65 dB min.
Spurious and Image Rejection	50 dB min.
Intermodulation Rejection	65 dB min.
Audio Power Output at 5% Distortion	4.0 W min.
Frequency Stability (-30 to +60'C)	+0.0005%
Channel Spread	25 kHz

TRANSMITTER

Measurements are made in accordance with EIA Standard RS-152-B.

RF Power Output	25 W (High); 1 W (Low)
Spurious and Harmonic Emissions	55 dB (High); 45 dB (Low)
FM Hum and Noise	-35 dB min.
Modulation	16K0G3E
Audio Distortion	5%
Frequency Stability (-30' to +60'C)	+0.0005%
Channel Spread	25 kHz

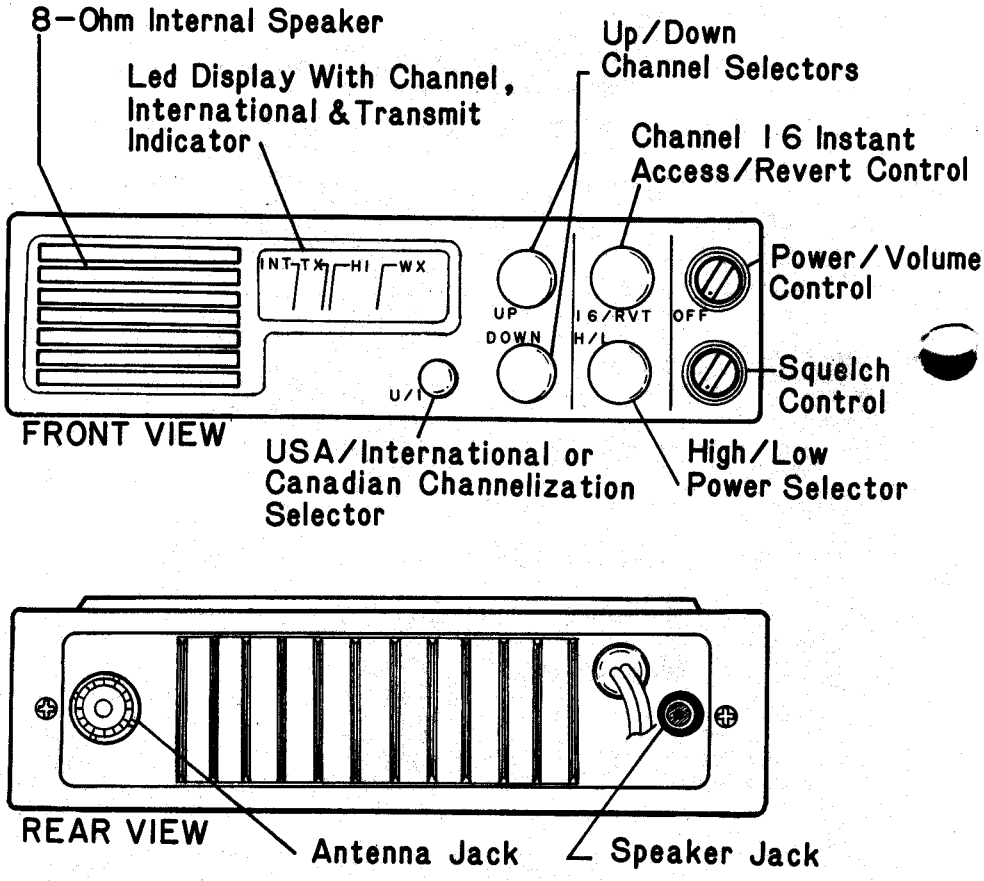


FIGURE 1. CONTROLS AND CONNECTIONS

General Information

The Standard Communications Corp.(SCC) Horizon Explorer II is a VHF/FM marine transceiver designed for simplex/semiduplex marine operation in the 156 to 163 MHz frequency ranges. Its microprocessor-controlled circuitry allows choice between U.S.A. and International (or between ** Canadian and International **) channel frequencies with just the press of a button.

It is capable of operating in 55 marine channels, ten weather channels, and ten reserve channels. The transceiver frequencies are generated by a phase-lock-loop (PLL) frequency synthesizer. The 16/RVT button permits immediate selection of emergency channel 16.

An LED indicator in the display will indicate that the International frequency mode is on. The GX1220S comes factory equipped with U.S.A. and International frequency channels. ** If the Canadian and International combination is desired, modification of the transceiver is needed and may be done by SCC or an SCC authorized dealer. A GX1220S that has been modified for Canadian operation will still illuminate its U.S.A. LED to indicate Canadian channels. **

The GX1220S has an RF power output of 25 watts in the high range and one watt in the low range. A temperature compensating circuit maintains stable frequencies over varying temperatures. During transmission, the TX indicator illuminates.

The chassisless construction of the GX1220S reduces the transceiver's vulnerability to corrosive salt air. The modular construction simplifies repairs. An automatic power control (APC) protects the power circuit from overheating and the external heatsink in the rear of the transceiver dissipates heat buildup during transmissions.

**** To modify the enhanced GX1220S for operation of Canadian channels, install an 1S1555 diode (SCC part number HD20011050) as shown in Figure 1.**

After modification of the transceiver, it will operate in the Canadian and International channels only. **

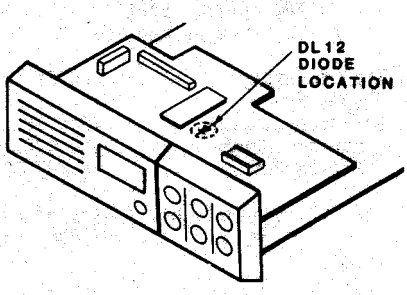


Figure 1. Diode Installation for Canadian Conversion

Licensing Information

The GX1220S complies with the requirements that regulate U.S. and Canadian airways. The following safety procedures are required by U.S. and Canadian airways. Please observe them.

- The onboard transceiver must be manned by a licensed radio operator. Others may speak into the microphone if the operator starts the transmission, identifies the transmission, supervises it, ends it, and logs it.

- The operator is at all times responsible for the lawful operation of the station. Distress and safety communications must have absolute priority over other kinds of ship-to-ship and ship-to-shore calls.

FCC INFORMATION

The Federal Communications Commission (FCC) regulate the Maritime Radio Service. The user must know and comply with all applicable parts of FCC Rules and Regulations. Rules applicable to each service may be ordered from:

SUPERINTENDENT OF DOCUMENTS
Government Printing Office
Washington, D.C. 20402

A valid station license and call sign issued by FCC is required before operating the GX1220S. It is the user's responsibility to file FCC Form 506 and Form 753 prior to operating a transceiver. Form 506 is a ship station license that permits installation of a transceiver on the ship. Form 753 is the restricted radio operator's license.

The following data pertaining to the GX1220S will need to be included on the FCC license application.

Type Accepted ..... FCC Part 80
Output Power ..... 1 watt (Low) and 25 watts (High)
Emission 16K0G3E
Frequency Range ..... 156.025 to 163.275 MHz
FCC Type Number APV8J70387

The FCC requires that a copy of Part 80 be kept aboard the ship at all times. The FCC application contains an order form for this regulation.

DOC INFORMATION

To obtain the Canadian Department of Communications (DOC) license application, contact their nearest field or regional office, or write:

Government of Canada
Department of Communications
300 Slater Street

Reserve Channels

A maximum of ten reserve channels are available by programming a PROM (programmable read-only memory) within the 156 to 163 MHz frequency range. Most GX1220S are programmed at the factory for reserve channel operation. For transceivers without reserve channels, the programmed PROM may be ordered at SCC or through an authorized SCC Marine Products Dealer. When ordering, please specify the following:

- o FX06 for GX1220S Horizon Explorer II
- o Desired Frequencies

Installation

GENERAL

1. Choose an ideal location to mount the transceiver. The ideal location should allow:
   - o as much protection from sea spray or rain as possible
   - o accessibility to front panel controls
   - o connection to a power source and antenna
   - o nearby space for installation of the microphone hanger
   - o a distance of at least 12 inches from a compass

MECHANICAL

1. Mount the bracket to the mounting location. Secure the transceiver to the bracket at the desired angle.
2. For cabin overhead mounting, the control panel can be repositioned for proper viewing as follows.
   a. Remove the two case screws at the rear of the transceiver and slide the P.C. board out from the case.
   b. Carefully reposition the control panel to an approximately 45' angle downward.

c. Invert the P.C. board 180' before sliding it back into its case. Ensure that the microphone cable is not pinched when the case is put back into place.

d. Reinstall the two screws at the rear of the transceiver.

ELECTRICAL

1. Connect the red lead of the power cord to a 13.8 VDC power source. Connect the black lead to negative ground.

2. Connect a suitable VHF antenna to the antenna jack at the rear of the transceiver.

3. If desired, connect an SCC Model 201SW external speaker (4 ohm) to the external speaker jack at the rear of the transceiver.

Operation

1. Rotate the squelch control counterclockwise.

2. Turn on the ON/OFF volume control. Adjust the volume level.

   NOTE: The transceiver powers up to Channel 16.

3. Rotate the squelch control clockwise until background noise disappears.

4. To select between International and U.S.A. or Canadian and International channels, do as follows:

   a. Press the U/I button. The INT LED on the display will light and the transceiver will operate on the International channels.

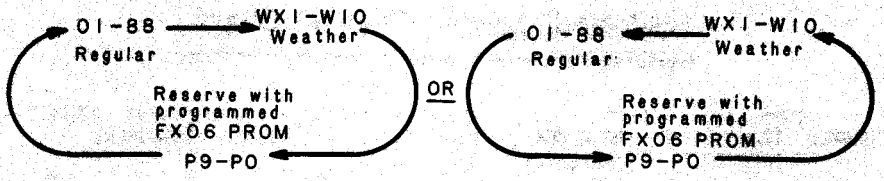
   b. Press the U/I button again and the display returns to the U.S.A. channels or Canadian (after modification) and the INT LED will extinguish.

5. To select a channel:

   a. Press the UP button to increase the channel number.
   b. Press the DOWN button to decrease the channel number.
   c. Press the 16/RVT button to select emergency channel 16.

NOTE: To revert back to the channel used before pressing the 16/RVT button, press the 16/RVT button again.

6. To get into the reserve channels (if the transceiver has the capability), press the UP of DOWN button. The channels are stepped in the following manner.



7. Transmission is accomplished as follows:

   a. Set the H/L power switch to low power position when in harbor or whenever it provides sufficient output power.

   b. Select and monitor the desired channel. It is illegal to transmit on a channel without first monitoring it.

   c. Depress the push-to-talk (PTT) switch and deliver the voice message. The TX indicator will illuminate.

NOTE: The HI or LOW power switch located on the microphone allows for high or low power operation of channels 13 and 67. If these channels are to be operated using high power, use it in compliance with Part 80 of FCC Regulations.

Maintenance

The inherent quality of the solid-state components used in this transceiver will provide many years of continous use. Using the following tips will help maintain the unit in peak condition.

- Have an FCC-licensed technician check the transceiver and antenna before operation and annually to ensure compliance with FCC regulations.

- Do not operate the transceiver when the input voltage is below 11 VDC or greater than 16 VDC. High supply voltage is a common cause of transceiver failure.

- Do not power up the transceiver when the antenna:

  * is disconnected
  * is defective
  * is poorly connected to the transceiver

- Should the transceiver require maintenance or repair, contact the SCC dealer from whom it was purchased.

USA VHF Marine Channel Chart

CHANNEL	TRANSMITTER FREQUENCY	RECEIVER FREQUENCY	MODE S/D	CHANNEL ASSIGNMENT
01	156.050	156.050	S	Public Correspondence, Port Operation
05	156.250	156.250	S	Public Correspondence, Port Operation
06	156.300	156.300	S	Safety (Compulsory)
07	156.350	156.350	S	Commercial
08	156.400	156.400	S	Commercial, Inter-ship
09	156.450	156.450	S	Commercial/Non-Commercial
10	156.500	156.500	S	Commercial
11	156.550	156.550	S	Commercial, VTS
12	156.600	156.600	S	Port Operation, VTS
* 13	156.650	156.650	S	Bridge to Bridge, (1W) Navigational
14	156.700	156.700	S	Port Operation, VTS
15		156.750	S	Recv Only-Coast to Ship
16	156.800	156.800	S	Calling & Safety, Compulsory
* 17	156.850	156.850	S	State Controlled Ship to Coast (1W)
18	156.900	156.900	S	Commercial
19	156.950	156.950	S	Port Operation
20	157.000	161.600	D	Port Operation
21	157.050	157.050	S	U.S. Govt. Only
22	157.100	157.100	S	Liaison (USCG only)
23	157.150	157.150	S	Port Operation (U.S Govt. Only)
24	157.200	161.800	D	Public Correspondence
25	157.250	161.850	D	Public Correspondence
26	157.300	161.900	D	Public Correspondence
27	157.350	161.950	D	Public Correspondence
28	157.400	162.000	D	Public Correspondence
63	156.175	156.175	S	Public Correspondence, Port Operation
64		160.825	D	Public Correspondence, Port Operation
65	156.275	156.275	S	Port Operation, VTS
66	156.325	156.325	S	Port Operation, VTS
* 67	156.375	156.375	S	Commercial, VTS
68	156.425	156.425	S	Non-Commercial
69	156.475	156.475	S	Non-Commercial
70	156.525	156.525	S	Non-Commercial
71	156.575	156.575	S	Intership, Port Operation, Non-Commercial
72	156.625	156.625	S	Non-Commercial
73	156.675	156.675	S	Port Operation, VTS
74	156.725	156.725	S	Port Operation, VTS
77	156.875	156.875	S	Intership, Port Operation

*** 1 Watt Power Operation Only**

USA VHF Marine Channel Chart

CHANNEL	TRANSMITTER FREQUENCY	RECEIVER FREQUENCY	MODE S/D	CHANNEL ASSIGNMENT
78	156.925	156.925	S	Non-Commercial
79	156.975	156.975	S	Commercial
80	157.025	157.025	S	Commercial
81	157.075	157.075	S	U.S. Govt. Only
82	157.125	157.125	S	U.S. Govt. Only
83	157.175	157.175	S	U.S. Govt. Only
84	157.225	161.825	D	Public Correspondence
85	157.275	161.875	D	Public Correspondence
86	157.325	161.925	D	Public Correspondence
87	157.375	161.975	D	Public Correspondence
88	157.425	157.425	S	Commercial, Aircraft
WX01		162.550	D	Weather (Recv Only)
WX02		162.400	D	Weather (Recv Only)
WX03		162.475	D	Weather (Recv Only)
WX04		163.275	D	Weather (Recv Only)
WX05		161.650	D	Weather (Recv Only)
WX06		161.775	D	Weather (Recv Only)
WX07		162.425	D	Weather (Recv Only)
WX08		162.450	D	Weather (Recv Only)
WX09		162.500	D	Weather (Recv Only)
WX10		162.525	D	Weather (Recv Only)

International VHF Marine Channel Chart

CHANNEL	TRANSMITTER FREQUENCY	RECEIVER FREQUENCY	MODE S/D	CHANNEL ASSIGNMENT
01	156.050	160.650	D	Public Correspondence, Port Operation
02	156.100	160.700	D	Public Correspondence, Port Operation
03	156.150	160.750	D	Public Correspondence, Port Operation
04	156.200	160.800	D	Public Correspondence, Port Operation
05	156.250	160.850	D	Public Correspondence, Port Operation
06	156.300	156.300	S	Safety (Compulsory)
07	156.350	160.950	D	Public Correspondence, Port Operation
08	156.400	156.400	S	Commercial, Inter-ship
09	156.450	156.450	S	Commercial/Non-Commercial
10	156.500	156.500	S	Commercial
11	156.550	156.550	S	Commercial, VTS
12	156.600	156.600	S	Port Operation, VTS
13	156.650	156.650	S	Bridge to Bridge, (1W) Navigational
14	156.700	156.700	S	Port Operation, VTS
* 15	156.750	156.750	S	Recv Only-Coast to Ship
16	156.800	156.800	S	Calling & Safety, Compulsory
* 17	156.850	156.850	S	State Controlled Ship to Coast (1W)
18	156.900	161.500	D	Port Operation
19	156.950	161.550	D	Commercial
20	157.000	161.600	D	Port Operation
21	157.050	161.650	D	Port Operation
22	157.100	161.700	D	Port Operation
23	157.150	161.750	D	Public Correspondence
24	157.200	161.800	D	Public Correspondence
25	157.250	161.850	D	Public Correspondence
26	157.300	161.900	D	Public Correspondence
27	157.350	161.950	D	Public Correspondence
28	157.400	162.000	D	Public Correspondence
60	156.025	160.625	D	Public Correspondence, Port Operation
61	156.075	160.675	D	Public Correspondence, Port Operation
62	156.125	160.725	D	Public Correspondence, Port Operation
63	156.175	160.775	D	Public Correspondence, Port Operation
64	156.225	160.825	D	Public Correspondence, Port Operation
65	156.275	160.875	D	Public Correspondence, Port Operation,
66	156.325	160.925	D	Public Correspondence, Port Operation
67	156.375	156.375	S	Commercial, VTS
68	156.425	156.425	S	Non-Commercial
69	156.475	156.475	S	Non-Commercial
70	156.525	156.525	S	Non-Commercial
71	156.575	156.575	S	Intership, Port Operation, Non-Commercial

* 1 Watt Power Operation Only

International VHF Marine Channel Chart

CHANNEL	TRANSMITTER FREQUENCY	RECEIVER FREQUENCY	MODE S/D	CHANNEL ASSIGNMENT
72	156.625	156.625	S	Non-Commercial
73	156.675	156.675	S	Port Operation, VTS
74	156.725	156.725	S	Port Operation, VTS
77	156.875	156.875	S	Intership, Port Operation
78	156.925	156.925	D	Port Operation, Public Correspondence
79	156.975	161.575	D	Port Operation, Public Correspondence
80	157.025	161.625	D	Port Operation, Public Correspondence
81	157.075	161.675	D	Port Operation, Public Correspondence
82	157.125	161.725	D	Port Operation, Public Correspondence
83	157.175	161.775	D	Port Operation, Public Correspondence
84	157.225	161.825	D	Public Correspondence
85	157.275	161.875	D	Public Correspondence
86	157.325	161.925	D	Public Correspondence
87	157.375	161.975	D	Public Correspondence
88	157.425	162.025	D	Port Operations, Public Correspondence
WX01		162.550	D	Weather (Recv Only)
WX02		162.400	D	Weather (Recv Only)
WX03		162.475	D	Weather (Recv Only)
WX04		163.275	D	Weather (Recv Only)
WX05		161.650	D	Weather (Recv Only)
WX06		161.775	D	Weather (Recv Only)
WX07		162.425	D	Weather (Recv Only)
WX08		162.450	D	Weather (Recv Only)
WX09		162.500	D	Weather (Recv Only)
WX10		162.525	D	Weather (Recv Only)