



STANDARD HORIZON

HX260S

**VHF/FM Marine
Handheld Transceiver**

Owner's Manual

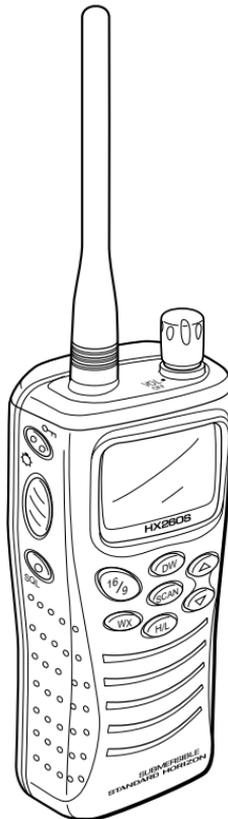


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FCC NOTICE

NOTICE

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

NOTICE

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

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced marine electronics technician for help.

1.1 INTRODUCTION

The STANDARD HORIZON (a division of YAESU USA) HX260S is a marine handheld two-way VHF transceiver. 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 also be accessed immediately by pressing the **WX** key.

The transceiver includes the following features: memory scanning, dual watch, weather alert, battery saver, easy-to-read large LCD display, EEPROM memory back-up, low battery indication displayed on LCD, and a transmit Time-Out Timer (TOT).

1.2 FCC/ INDUSTRY CANADA INFORMATION

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

FCC Type Accepted Part 80
 Output Power with CNB260 battery 1 watt (Low) and 5 watts (High)
 Emission 16K0F3E
 Frequency Range 156.025 to 163.275 MHz
 FCC Type Number K66HX260S
 Industry Canada Type Approval PENDING

Additional FCC and Industry Canada 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 operating procedures, maintenance, factory service information, and warranty data.

2.1 PACKING LIST

When the package containing the transceiver is first opened, please check it for the following contents, notify the dealer if you are missing any of these contents.

- HX260S Transceiver
- CNB260 Rechargeable Battery Pack (Ni-Cad 7.2V, 750 mAh)
- CAT350 Flexible Antenna with STUD connector
- CWC260 120V AC Wall charger
- Battery Tray for "AA" alkaline battery
- Lanyard
- Belt Clip with screws
- Owner's Manual
- Owner's Manual Supplement

2.2 OPTIONS

CAW350 Radio to ships antenna adapter
 CMC240 12VDC-trickle charger
 MCC260 Nylon case

2.3 REPLACEMENT PARTS

Flexible Antenna with STUD Connector CAT350
 Rechargeable Battery Pack CNB260
 Belt Clip 365B258020
 Lanyard 458C156040
 Volume Control Knob 451X154410
 Battery Tray 451X064430
 CWC260 120V AC Charger CWC260

NOTE

This section defines each control of the transceiver. For detailed operating instructions refer to section 4 of this manual.

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 sets the audio volume. To turn the transceiver on, turn this knob clockwise until the LCD turns on. When power is turned on, the transceiver is set to last selected channel.

Secondary use

When the transceiver is turned on while the **SCAN** and **WX** keys are held down, the internal microprocessor is reset. This clears memory and all user-programmed settings, such as scan memory. This is known as the default condition, the same as when shipped from the factory. For a list of these defaults, see the section on resetting the Transceiver's Microprocessor.

② DW KEY

Watches for a transmission on CH16 and another selected channel until either signal is received.

③ ▲ (Up) KEY

Selects the desired channel and adjusts the squelch level. Each press increases the channel number or squelch level. When held down, the channels or squelch levels increase continuously.

④ ▼ (Down) KEY

Selects the desired channel and adjusts the squelch level. Each press decreases the channel number or squelch level. When held down, the channels or squelch levels decrease continuously.

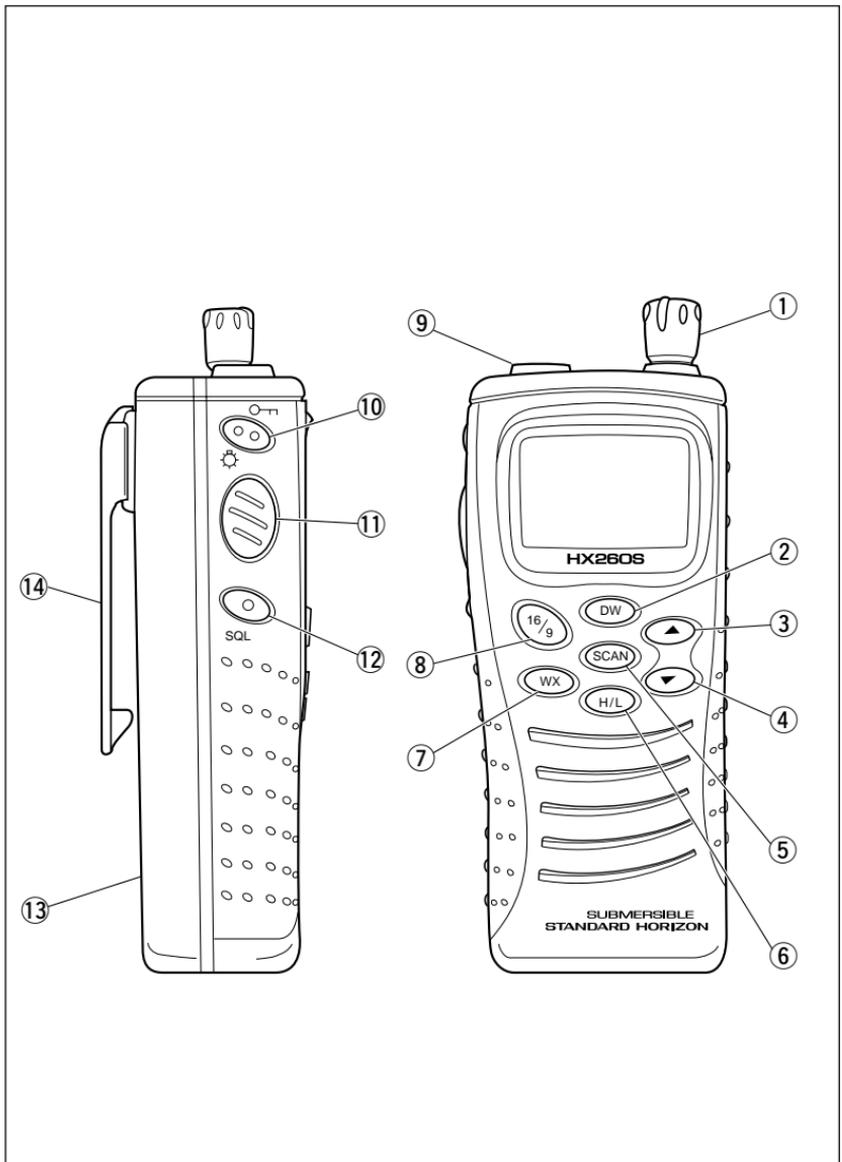


Figure 1. Controls and Connectors

⑤ SCAN KEY

Memory SCAN

1. Press once to start or stop scanning programmed channels.

NOTE

This function will not work if the radio is scanning.

Secondary use

1. Press and hold to store the selected channel into the transceiver's scan memory for scanning. Press and hold down the **SCAN** key again to store or delete a channel from the scan memory.
2. Holding down the **SCAN** and **WX** key while turning the power on, resets the microprocessor and erases scan channels from memory. This clears the memory and establishes the factory-set defaults. For a list of these defaults, see the section on resetting the Transceiver's Microprocessor.

⑥ H/L KEY

Toggles between high (5 watts) and low (1 watt) transmit output power. Does not operate on "low power only" and transmission-inhibit channels. When this key is pressed while the transceiver is on channel 13 or 67, the power will temporarily go high when the **PTT** switch is pressed. When the **PTT** switch is released the power setting reverts to low.

⑦ WX KEY

Immediately recalls last selected weather channel.

Secondary use

1. Holding down the **16/9** key while pressing the **WX** key, changes the mode from USA to International or Canadian.
2. Holding down the **WX** and **SCAN** key while turning the power on, resets the microprocessor and erases scan channels from memory. This clears the memory and establishes the factory-set defaults. For a list of these defaults, see the section on resetting the Transceiver's Microprocessor.

⑧ 16/9 KEY

Immediately recalls channel 16 from any channel location. Holding down this key recalls channel 9.

Secondary use

Please see secondary use for the **WX** key.

⑨ Antenna Connector

Connects to the flexible antenna CAT350.

⑩  (Lamp/key lock) KEY

Single depression of this key, turns on or off the back-lit for the LCD and Keys. When pressed and held locks the keypad buttons except for the **H/L**,  (Lamp/key lock) and **PTT**.

⑪ PUSH-TO-TALK (**PTT**) SWITCH

Activates transmission and shows TX indicator on the display.

⑫ **SQL** (SQUELCH CONTROL)

Activates the squelch adjusting mode.

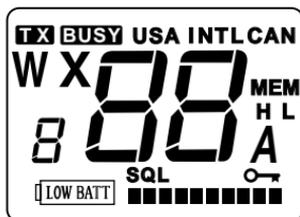
Press this key to activate the squelch adjusting mode. Press the ▲ (Up) or ▼ (Down) key to adjust the squelch. Sets the point at which random noise on the channel does not activate the audio circuits but a received signal does. This point is called the squelch threshold. Further adjustment of the squelch control will degrade reception of wanted transmissions.

⑬ CNB260 Battery Pack

Provides DC power to the transceiver.

⑭ Belt Clip

3.2 INDICATORS



Channel Display

Displays the operating channel in both transmission and reception mode.

A Indicator

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

TX/ BUSY Indicator

"TX" shows the radio is transmitting . "BUSY" shows the radio is receiving.

USA/ INTL/ CAN Indicator

The modes of operation for the particular channel. "USA" indicates USA mode. "INTL" indicates International mode and "CAN" indicates Canadian mode.

WX Indicator

A NOAA weather channel.

MEM Indicator

Shows the channel is in the transceiver's scan memory.

H/L Indicator

"H" is high power. "L" is low power. Blank is a reception only channel.

SQL Indicator

"SQL" is squelch adjusting mode.

Key Lock Symbol

A “” appears when the channel is locked. All keys are disabled except for the **H/L**, **PTT** and  (Lamp/key lock) keys.

Low Battery Indicator

A “” appears when the battery capacity is less than 15% (during transmission).

NOTE

The battery indicator should be used only as a guide to indicate the CNB260 needs to be charged. See section 5 for proper battery charging.

Output Power Indicator

“” is high (5 watts) power. “” is low (1 watt) power.

4.1 INITIAL PROCEDURE

NOTE

Never key the transceiver without an antenna connected. Damage may occur to the transceiver. Do not operate the transceiver while charging.

1. To remove the belt clip, pull the stopper and slide the belt clip upward.
2. Install the nylon carrying strap on the belt clip if desired.
3. Install the battery pack on the transceiver. (see figure 4 and section 5.2)
4. Install the antenna to the transceiver.

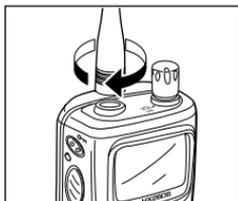


Figure 3. Antenna Installation

5. Turn the **POWER SWITCH /VOLUME CONTROL** knob clockwise to turn the transceiver on.

NOTE

Water resistance of the transceiver is assured only when the battery pack and antenna are attached to the transceiver.
Turn the battery lock screw clockwise 1/4 turn to tighten.

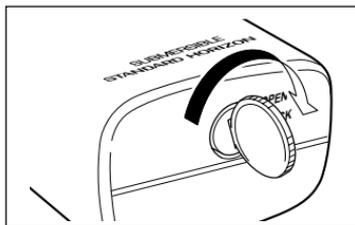


Figure 4. Battery Pack Installation

4.2 RECEPTION

1. Turn the **POWER SWITCH/VOLUME CONTROL** knob clockwise to turn the transceiver on.
2. Press the **SQL** key, then press ▼(Down) key until squelch level is minimum. This state is known as squelch off.
3. Select a channel that has no signal being received (no one is transmitting on the channel) and only noise is heard.
4. Turn up the **POWER SWITCH/VOLUME CONTROL** knob until the noise or audio from the speaker is at a desired level.
5. Press the **SQL** key, then press the ▲ (Up) key and stop immediately after the noise disappears. This condition is known as the “Squelch Threshold”. If the ▲ (Up) key is pressed beyond this level, weak signals may not be received. No signal can be heard until a signal is received that exceeds the squelch threshold. The SQUELCH ADJUSTMENT mode will automatically turn off in about 5 seconds. To turn off the SQUELCH ADJUSTMENT mode immediately, press the **SQL** key.
6. To change channels, press the ▲ (Up) or ▼ (Down) key. Sometimes, a slight adjustment of the squelch threshold is needed as 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 use.
7. If necessary, press the  (Lamp/key lock) key to turn on the lamp. The lamp automatically turns off in about 5 seconds. To turn off the lamp sooner, press the  (Lamp/key lock) key again.
8. To lock the channel in the operating mode so that it is not accidentally changed, hold down the  (Lamp/key lock) key for about 1 second. This locks the UP and DOWN keys and all front panel controls except the **H/L**, **PTT** and  (Lamp/key lock) keys. The key lock symbol “” appears on the display to indicate that the channel is locked. Hold down the  (Lamp/key lock) key for about 1 second to unlock the channel. The key lock symbol “” disappears from display.

4.3 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. For communications over short distances, press the **H/L** key until “L” is displayed on the LCD. This indicates low power, approximately 1 watt.

NOTE

Transmitting on 1 watt prolongs battery life. Low power (1 watt) should be selected whenever possible.

4. If using low power is not effective, select high power (5 watts) by pressing the **H/L** key until “H” is displayed.
5. When receiving a signal, wait until the signal stops before transmitting. The transceiver cannot transmit and receive simultaneously.
6. Press the **PTT** (push - to - talk) switch. The TX indicator is displayed during transmission.
7. Speak slowly and clearly into the microphone. Hold the microphone about 1/2 to 1 inch away from your mouth.
8. When the transmission is finished, release the **PTT** switch.
9. Refer to the OWNER'S MANUAL SUPPLEMENT for standard transceiver operating procedures.

4.4 TRANSMIT TIME - OUT TIMER (TOT)

While 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 sounded from the speaker. The transceiver automatically switches to the receiving mode, even if the **PTT** switch is held down. Before transmitting again, the **PTT** switch must first be released and pressed again. This time-out timer (TOT) prevents a continuous transmission that would result from an accidentally stuck **PTT** switch.

4.5 SIMPLEX/DUPLEX CHANNEL USE

Refer to the OWNER'S MANUAL SUPPLEMENT for instruction on use of simplex and duplex channels.

NOTE

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

4.6 USA, CANADA, AND INTERNATIONAL MODE

1. To change the modes, press and hold the 16/9 key and press the **WX** key. The mode changes from USA to International to Canada with each press of the **WX** key.
2. "USA" will be displayed on the LCD for the USA mode, "INTL" will be displayed for International mode, and "CAN" will be displayed for Canadian mode.
3. Refer to the OWNER'S MANUAL SUPPLEMENT for allocated channels in each mode.

4.7 NOAA WEATHER CHANNELS

1. To receive a NOAA weather channel, press the **WX** key from any channel. The transceiver will go to the last selected weather channel.
2. Press the ▲ (Up) or ▼ (Down) key to select a different NOAA weather channel.
3. To exit from the weather channels, press the **WX** key. The transceiver returns to the channel it was on prior to weather channel.

4.8 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 report on one of the weather channels. The transceiver is capable of receiving this alert if the following is performed:

1. Program NOAA weather channels into the transceiver's memory for scanning. Follow the same procedure as for regular channels under Section 4.9.
2. Press the **SCAN** key once to start memory scanning.
3. The programmed NOAA weather channels will be scanned along with the regular-programmed channels. However, scanning will not stop on a normal weather broadcast unless a NOAA alert is received.
4. When the weather alert is received on a weather channel, scanning will stop and the transceiver will emit a loud intermittent beep to alert user of a NOAA broadcast.
5. Press the **WX** key to stop the alert tone and receive the weather report.

NOTE

If the **WX** key is not pressed the alert tone will be emitted for 5 minutes and then the weather report will be received.

4.9 MEMORY SCANNING

1. Adjust a squelch level until background noise disappears. Select a desired channel to be scanned using the ▲ (Up) or ▼ (Down) key.
2. Press and hold down the **SCAN** key, "MEM" will appear in the LCD indicating that the channel has been added to the transceiver's memory.
3. Repeat step 2 for all the desired channels to be scanned.
4. To DELETE a channel from the transceiver's memory. Press and hold down the **SCAN** key, "MEM" will disappear from the LCD, indicating the channel has been deleted from scan memory.
5. To start scanning, press the **SCAN** key. Scanning will proceed from the lowest to the highest programmed channel number and will stop on a channel when a transmission is received.
6. To stop scanning, press the **SCAN**, **16/9**, **WX** , or **PTT** switch .

4.10 DUAL WATCHING

To start dual watching, select a channel other than CH16 or NOAA weather channels and press the **DW** key. The “d” will appear in the LCD. This operation monitors CH16 while you are receiving the selected channel.

- a) If a signal is received on CH16, dual watch pauses on CH16 until the signal disappears.
- b) If a signal is received on the selected channel, the radio will operate dual watching between CH16 and the selected channel.

4.11 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 cannot contact anyone on channel 16, switch to another channel.
3. See the OWNER'S MANUAL SUPPLEMENT for additional emergency operating practices.
4. To recall the previous channel from 16, press the **16/9** key.

4.12 CHANNEL 9

Channel 9 is used as a hailing channel for initial, non-emergency contact with other vessels. To select, hold down the **16/9** key until channel 9 appears on the display.

4.13 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.

In emergencies and when approaching blind river bends, high power is allowed. Press the **H/L** key to temporarily switch to high power before transmitting. High power can only be accessed in USA and Canadian modes. When the **PTT** switch is released, the transceiver will change to low power.

4.14 OPERATING ON CHANNEL 67

When channel 67 is used for navigational bridge-to-bridge traffic between ships, high power may be used temporarily in the USA mode by pressing the **H/L** key before transmitting. When the **PTT** switch is released, the transceiver will revert to low power.

4.15 RESETTING THE TRANSCEIVER'S MICROPROCESSOR

Resetting the microprocessor restores the initial, factory supplied conditions in the transceiver. These are called the default conditions. To reset the microprocessor, first turn the transceiver off. Then while pressing and holding the **WX** and **SCAN** keys, turn the transceiver on. The default conditions are:

- No channel numbers are in **SCAN** memory.
- Channel 16 will be selected when the transceiver is turned on.
- WX channel 01 will be recalled when the **WX** key is pressed.

5.1 BATTERY CHARGING

To check the charge status, install the battery and press the **PTT** switch while observing the **BATT** indicator. (see page 9)

The CWC260 battery charger supplied with the transceiver recharges a completely discharged CNB260 battery pack in about 15 hours.

Battery pack should not be charged with the supplied battery charge system for longer than 16 hours.

See figure 11 for diagram of connecting the charger to the battery.

5.2 BATTERY PACK REMOVAL/INSTALLATION

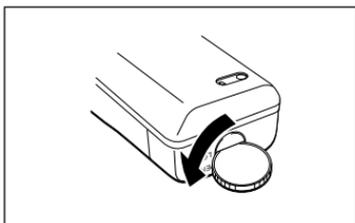


Figure 5. Turning the battery lock

1. Turn the transceiver off.
2. Turn the battery lock screw counter-clockwise 1/4 turn.

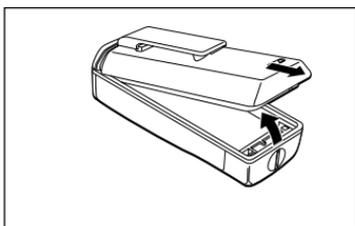


Figure 6. Removing the battery pack

3. Pull the battery pack to upward and remove the battery pack.

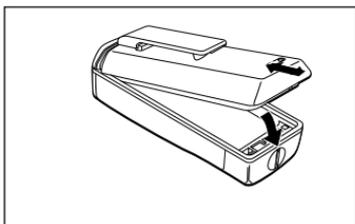
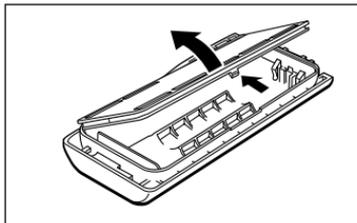


Figure 7. Attaching the battery pack

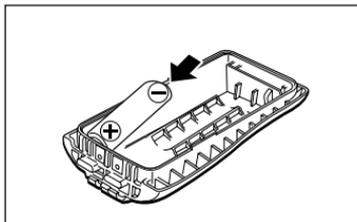
4. Attach the battery pack to transceiver.
5. Turn the battery lock screw clockwise 1/4 turn.

5.3 USING BATTERY TRAY



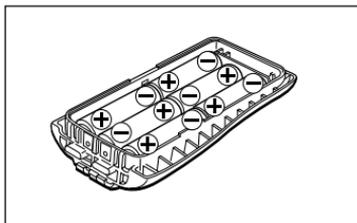
1. Push the lock of the battery tray, and open the lid.

Figure 8. Removing the battery case lid



2. Install the AA battery cell.
(We recommend you use alkaline batteries.)

Figure 9. Installing the battery pack



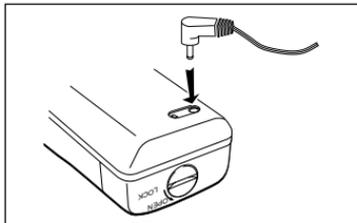
3. Confirm the polarity of the batteries.
4. Close the lid.
5. Attach the battery tray to transceiver, and turn the lock screw clockwise 1/4 turn.

Figure 10. Confirm the polarity

CAUTION

It is not recommended to use Ni-Cd batteries or other rechargeable batteries.

5.3 OPERATING CWC260 BATTERY CHARGER



1. Turn the transceiver off.
2. Plug the DC plug of CWC260 into the battery.
3. Plug the wall charger into a 120 VAC wall outlet.
4. The indicator lights, and charging begins.
5. Remove the DC plug from the battery when charging time has passed.

Figure 11. Plugging the DC plug

5.4 BATTERY SAFETY

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

DO NOT SHORT BATTERY PACK TERMINALS

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

DO NOT OVERCHARGE

Do not charge the transceiver for more than 16 hours with the battery charge system. Heat generated by overcharging can shorten battery life and cause other battery pack component failures.

DO NOT INCINERATE

Do not dispose of any Ni-Cd battery in a fire or incinerator. The heat of fire may cause battery cells to explode and/or release dangerous gases.

DISPOSE OF BATTERY PACKS PROPERLY

Ni-Cd batteries must be recycled or disposed of properly. For requirements in your area, check with the dealer from whom you purchased your transceiver. The symbol shown below is a reminder that the battery packs are recyclable.



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

TROUBLESHOOTING CHART		
SYMPTOM	PROBABLE CAUSE	REMEDY
The SCAN key does not start the scan.	No channels memorized.	Use the SCAN key to enter desired channels into the transceiver's memory.
	Squelch is not adjusted.	Adjust the squelch to threshold or to the point where noise just disappears. Further adjustment of the squelch control may eliminate incoming signals.
The USA/INTL/CAN modes do not function.	Proper operation not followed.	Hold down the 16/9 key and press the WX key.
Adjusting the squelch control does not eliminate background noise.	Low battery.	Charge battery. Refer to section 5 of this manual.
Cannot change any function.	Key Lock is on.	Turn Key Lock off.
Key Lock does not function.	Proper operation not followed.	Press and hold for until  is displayed.

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

7.1 GENERAL

Channels	All currently allocated USA, Canadian and International channels, plus 10 weather channels.
RF Power Output with CNB260 Battery	5.0 W (high) 1.0 W (low)
Operating Voltage	7.2 VDC
Current Drain:	
Standby	20 mA
Receive	180 mA
Transmit	1.5 A (high power), 0.7 A (low power)
Dimensions	5.51" H x 2.17" W x 1.50" D (135.0 mm x 61 mm x 41 mm)
Weight	1.0 lb. (0.5 Kg)
FCC Type Acceptance Number	K66HX260S
Industry Canada Type Approval Number	PENDING
Battery Life (5% TX, 5% RX, 90% Standby)	8 hrs. (high) 10 hrs. (low)

7.2 TRANSMITTER

Frequency Range	156.025 to 157.425 MHz
Conducted Spurious Emissions	Less than 65 dB (high), Less than 55 dB (low)
Audio Response	within +1/-3 of 6 dB/octave pre-emphasis characteristic from 300 Hz to 3000 Hz
AF Harmonic Distortion	Less than 3 %
Hum and Noise	More than 40 dB
Frequency Stability (-20° to +50°C)	+/- 10 ppm

7.3 RECEIVER

Frequency Range	156.025 to 163.275 MHz
Sensitivity:	
20 dB Quieting	0.40 μ V
12 dB SINAD	0.35 μ V
Squelch Sensitivity (Threshold)	0.20 μ V
Modulation Acceptance Bandwidth	+/- 4.5 kHz
Selectivity:	
Spurious and Image Rejection	70 dB
Intermodulation Rejection	65 dB
Channel Spacing	25 kHz



STANDARD HORIZON

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