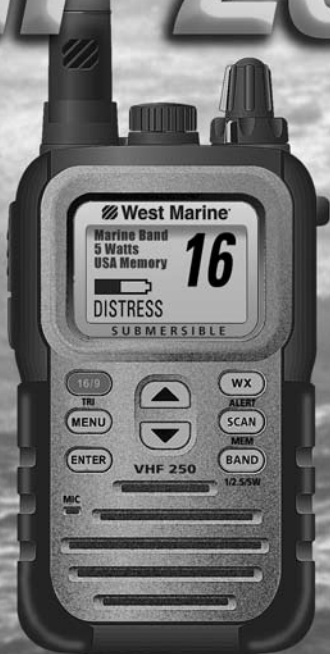


Marine Multi-band Transceiver

Émetteur-récepteur marin multibande
Transreceptor Marino Multibandas

VHF 250



**OWNER'S
MANUAL
ENGLISH**

West Marine

Making a Distress Call

For future reference, write your boat's name & call sign here:

Speak slowly -- clearly -- calmly.

1. Make sure your radio is on.
2. Press the **16/9-TRI** button to switch to Channel 16 (156.8 MHz). (If the corner of the display does not show 16, press the **16/9-TRI** button again until it does.)
3. Press the **PUSH TO TALK** button and say, **"MAYDAY --MAYDAY-- MAYDAY."**
4. Say, **"THIS IS {name or call sign of your boat}."**
5. Say, **"MAYDAY{name or call sign of your boat}."**
Tell where you are (what navigational aids or landmarks are near, or give your position from a GPS).
6. State the nature of your distress (e.g. sinking, medical emergency, man overboard, fire, adrift, etc.).
7. Give the number of persons aboard and describe the condition of any injured persons.
8. Estimate present seaworthiness of your ship (e.g. how immediate is the danger due to flooding or fire or proximity to shore).
9. Briefly describe your ship (length, type, color, hull).
10. Say, **"I WILL BE LISTENING ON CHANNEL 16."**
11. End message by saying, **"THIS IS {name or call sign of your boat} OVER."**
12. Release the **PUSH TO TALK** button and listen for a response.

If you do not get an answer after 30 seconds, repeat your call, beginning at step 3, above.

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Introduction

Features

The VHF250 provides the following key features:

- **Submersible design**
Complies with JIS8 water-resistant standards, which means the radio can be submerged in 1.5 meters of water for 30 minutes without damage.
- **Family Radio Service (FRS) band with privacy codes**
Provides 2-way communication using the 14 FRS channels, and Continuous Tone Coded Squelch System/Digital Squelch Control (CTCSS/DSC) privacy codes reduce interference from nearby FRS units.
- **Standard AM and FM broadcast bands**
- **Aircraft broadcast reception (108-137MHz)**
Lets you monitor aircraft-to-ground transmissions.
- **Memory scan mode**
Lets you save channels to memory and monitor them in quick succession.
- **Transmitter power level select**
Lets you boost the transmitter power from 1 Watt to 2.5 or 5 Watts for added transmission distance.
- **Battery level display and low battery alert.**
- **Triple or dual watch operation**
Checks the Coast Guard Distress/Hailing channels 16 and 9 in the background.
- **All marine VHF channels for the U.S., Canada, and international waters**
- **National Oceanic and Atmospheric Administration (NOAA) weather channel watch**
Sounds a warning tone when a hazard alert is issued for your area.

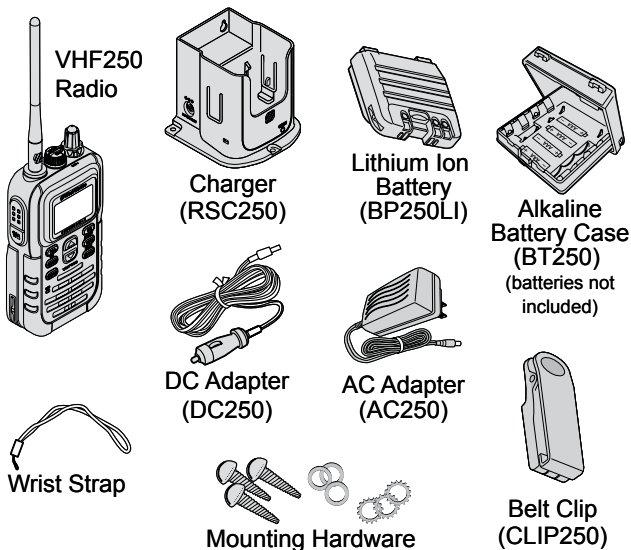
Manual conventions

This manual uses several different type styles to help you distinguish between different parts of the radio:

- **BOLD SMALL CAPITALS** indicates an actual button or knob on the radio.
- *Italics* indicate text on the display, such as menu options, prompts, and confirmation messages.

Getting Started

What's included



If any pieces are missing or damaged, contact West Marine (see back cover for contact information).

Parts of the VHF250

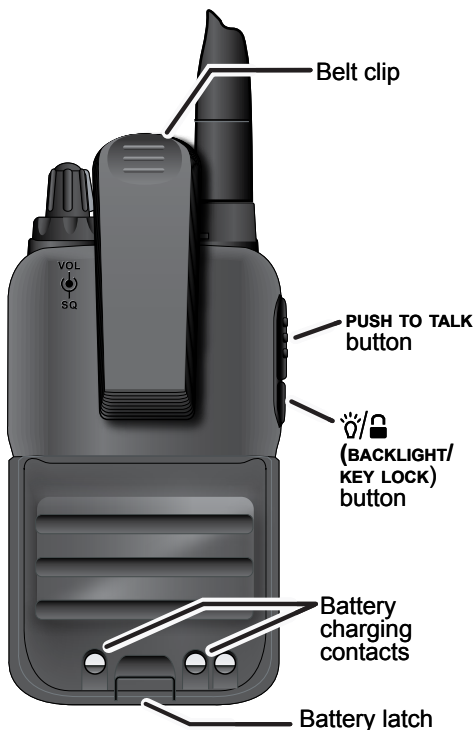
Front view



BUTTON	Press to...	Press and hold to...
PUSH-TO - TALK		Transmit on a channel. Note: You cannot transmit while the radio is in the charger.
16/9-TRI	1 st press: Go to Channel 16. 2 nd press: Go to Channel 9. 3 rd press: Go back to the original channel.	Turn on Triple Watch or Dual Watch mode (see page 27).
MENU	Display the radio menu.	
ENTER	Choose an option on a menu.	
CHANNEL UP	Move up one channel at a time or move up one option at a time in a menu screen.	Move quickly up the channels.
CHANNEL DOWN	Move down one channel at a time or move down one option at a time in a menu screen.	Move quickly down the channels.
WX-ALERT	Listen to the current weather conditions in your area.	Monitor weather channels for alerts (any area).
SCAN-MEM	Start scanning the channels saved in memory.	Save a channel into memory or remove a channel from memory.
BAND-1/2.5/5W	Cycle through the radio bands: marine/VHF, FRS, AM, FM, and aircraft band	Change the transmit power (see page 27)

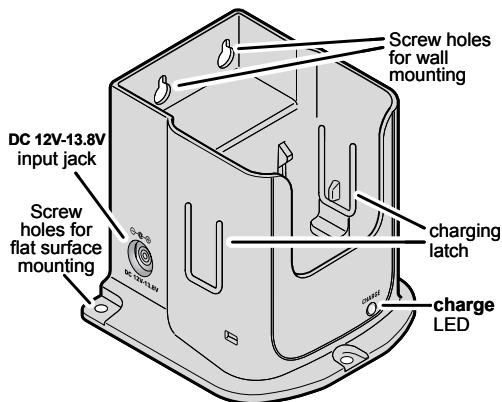
KNOB	Turn clockwise to...:	Turn counter-clockwise to...:
VOLUME-POWER	Turn on the radio or increase the volume.	Decrease the volume or turn off the radio.
SQUELCH	Raise the squelch level to reduce channel noise.	Lower the squelch level to hear weaker signals.

Back view



BUTTON	Press to...	Press and hold to...
PUSH-TO-TALK		Transmit on a channel. Note: <i>You cannot transmit while the radio is in the charger.</i>
BACKLIGHT/KEY LOCK	Turn on the LCD and keypad backlight.	Lock and unlock the keypad.

Parts of the charger



CHARGE LED	Lights while the battery is charging and turns off when the battery is fully charged. (If a fully charged battery is placed in the cradle, the LED does not light.)
Power input jack (DC 12V-13.8V)	Use ONLY the AC or DC adapter that came with your radio! The DC adapter must connect to a 12-13.8V power supply with a negative ground.

Using the menus

Here are some general hints on operating the VHF250 menu screens. The specific screens and menu options are different for each radio band. For details, see the operation instructions for each radio band starting on page 23.

- The current item is highlighted in reversed out text.
- Use the **CHANNEL UP** button to move up a line in the menu.
- Use the **CHANNEL DOWN** button to move down a line in the menu.
- Press the **ENTER** button to choose the selected item.
- Select *Exit* to close the menu.

How It Works

The VHF250 radio has three main operation modes, normal mode, scan mode, and weather mode.

Mode	What it does	Use it when you want to....:	To turn it on/off
Normal mode	Monitors a single channel. In marine and FRS bands, it allows you to talk on that channel, too.	Monitor a channel or talk to another radio.	(default mode for each radio band)
Scan mode	Monitors all the channels you save into memory	Check a small group of regularly-used channels for traffic	Press SCAN-MEM .
Weather mode	Monitor the selected NOAA weather channel.	You want to hear the current or forecasted weather in your area	Press WX-ALERT .

In addition to the three operation modes, the VHF250 provides three different *watch modes* which you can activate during any operation mode. In the watch modes, the radio briefly checks for activity on a specific channel, then returns to its previous operation.

Watch mode	What it does	To turn it on/off
Weather Alert Watch	Checks the last-used weather channel for hazard alerts every 7 seconds	Press and hold WX-ALERT for 2 seconds
Triple Watch	Checks channels 16 and 9 for activity every 2 seconds	Press and hold 16/9-TRI for two seconds
Dual Watch	Checks channel 16 for activity every 2 seconds	Change Triple Watch to Dual Watch in the menu, then press and hold 16/9-TRI for 2 seconds

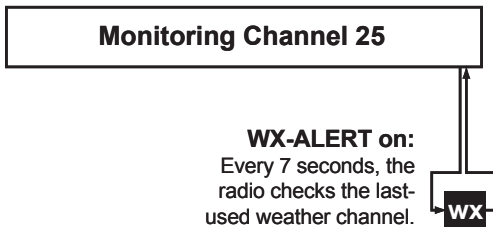
Note: Private boats must monitor channel 16 whenever they are underway. Water-going vessels should have either Triple Watch or Dual Watch on at all times.

Normal mode operation

- Press the **CHANNEL UP** button to move up one channel at a time. Press and hold the button to scroll quickly up the channels.
- Press the **CHANNEL DOWN** button to move down one channel at a time. Press and hold the button to scroll quickly down the channels.
- You can listen to all of the available radio bands. You can transmit on FRS channels and most marine VHF channels.
- To transmit, press and hold the **PUSH TO TALK** button to transmit. Release the button when you finish talking.
- For the best sound quality, hold the microphone about two inches from your mouth while you're talking.
- To change the transmit power, press and hold the **BAND-1/2.5/5W** button for about 2 seconds. The radio switches to the next transmit power each time you press and hold the **BAND-1/2.5/5W** button.

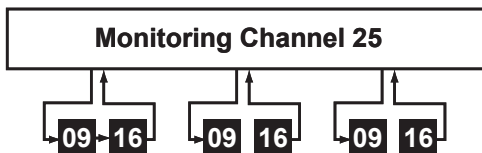
Normal mode with Weather Alert Watch

If you activate Weather Alert Watch while operating in normal mode, the radio checks the most recently-used weather channel every seven seconds. If it detects a weather alert for your area, it will switch to the last-used weather channel. (If you are actively transmitting, the radio waits until you finish your transmission before checking the weather channel.)



Normal mode with Triple Watch or Dual Watch

If you activate Triple Watch while operating in normal mode, the radio checks channels 16 and 9 every two seconds; with Dual Watch turned on, the radio only checks channel 16. The radio will not check channels 16 or 9 while you are actively transmitting; it waits until your transmission is finished and then checks the channels.

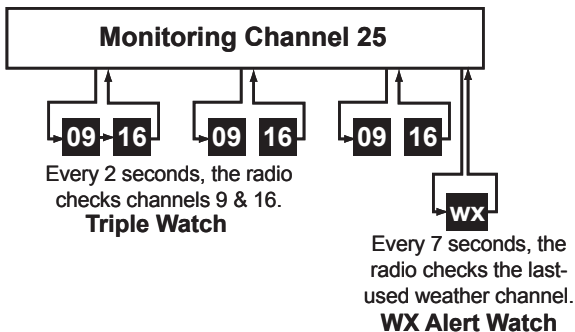


Triple Watch on:

Every 2 seconds, the radio checks channels 9 & 16.

Both Weather Alert and Triple/Dual Watch in normal mode

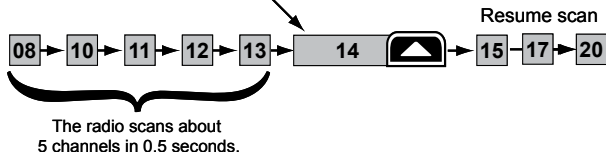
You can activate Weather Alert Watch and Triple/Dual Watch at the same time. The radio performs both checks at their scheduled time:



Scan mode operation

You can save channels into memory and then use scan mode to monitor those channels from lowest to highest. If the radio detects a signal on a channel, it stays on that channel as long as the signal is received; when the signal stops, the radio continues scanning.

When it detects a signal, the radio stays on the channel until you press the **CHANNEL UP** button or the signal stops.



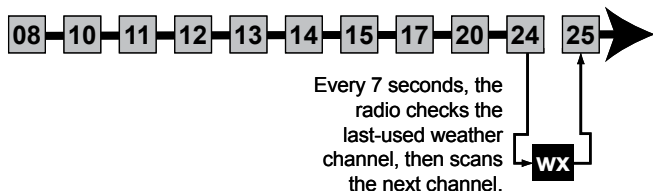
Using the radio in scan mode

- To activate scan mode, press **SCAN-MEM**.
- You cannot transmit while in scan mode.
- You must have at least two channels in memory to start a scan.
- To save a channel into memory, select the channel, then press and hold the **SCAN-MEM** button for two seconds. *Memory* shows on the display whenever you tune to that channel.
- To remove a channel from memory, set the radio to that channel, then press and hold the **SCAN-MEM** button for two seconds. *Memory* no longer shows on the display.
- When the radio stays on a channel, press **CHANNEL UP** to leave that channel and resume scanning.
- To end the scan, press the **SCAN-MEM** button again; the radio remains on the last scanned channel.

Scan mode with Weather Alert Watch

If you activate Weather Alert Watch while in scan mode, the radio checks the most recently-used weather channel every seven seconds, then continues scanning the next channel in memory:

Memory Channel Scan

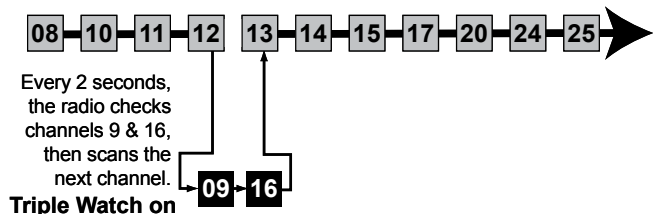


WX Alert Watch on

Scan mode with Triple Watch or Dual Watch

If you activate Triple Watch while operating in scan mode, the radio checks channels 16 and 9 every two seconds, then goes on to scan the next channel; with Dual Watch turned on, the radio only checks channel 16:

Memory Channel Scan

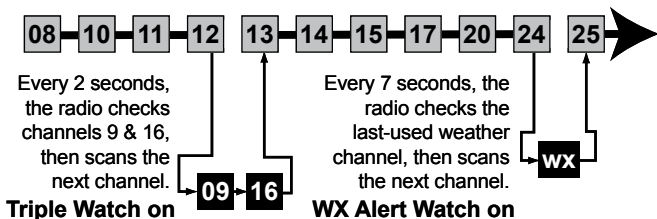


Triple Watch on

Both Weather Alert and Triple/Dual Watch in scan mode

You can activate Weather Alert Watch and Triple/Dual Watch at the same time. The radio performs both checks at their scheduled time:

Memory Channel Scan



Weather mode

The NOAA weather channels now cooperate with the FCC to alert you of other hazards besides weather (child abduction alerts, nuclear, biological, etc.). In weather mode, the radio monitors one of the ten NOAA weather channels. If any type of alert is received for your area, the radio sounds an alert tone and displays the type of alert.

Using the radio in weather mode

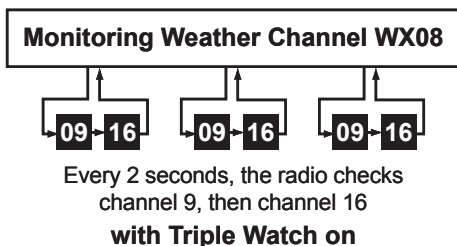
- You cannot transmit while in weather mode.
- To enter weather mode, press the **WX-ALERT** button.
- Weather mode can filter out alerts that do not affect your location if the location code (FIPS code) of the alert is entered in your radio (see page 28). If you have no FIPS codes programmed into your radio, the radio will notify you of all alerts in any area.
- To turn off the radio's alert tone, press any button.
- To cancel weather mode and return to the previous marine channel, press the **WX-ALERT** button again.

Weather mode with Weather Alert Watch

Because weather mode already monitors the weather channels, you don't need Weather Alert Watch to check the weather channel every seven seconds. If you activate Weather Alert Watch while operating in weather mode, it operates as a type of "sleep mode": the radio stays on the weather channel and mutes the speaker. If an alert is detected for your area, the radio sounds an alert tone and turns the speaker back on. This mode is very useful when you are anchoring the night but want to stay informed of any hazards in your area.

Weather mode with Triple Watch or Dual Watch

If you activate Triple Watch while operating in weather mode, the radio checks channels 16 and 9 every two seconds; with Dual Watch turned on, the radio only checks channel 16.



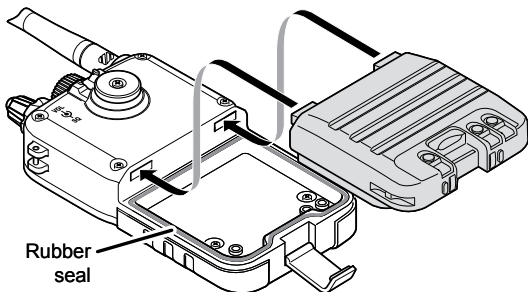
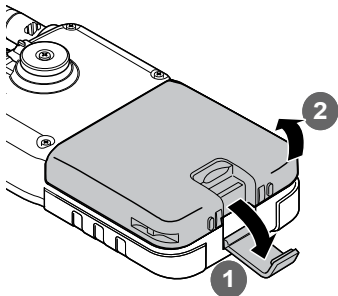
Setting Up the Hardware

Installing the battery

Your VHF250 comes with a rechargeable Lithium Ion battery. For shipping safety, the battery is not installed at the factory; the empty alkaline battery case is installed as a placeholder.

Note: Charge the battery fully before using the radio.

1. Unlock the latch at the base of the radio and remove the alkaline battery case.
2. Insert the hooks on the battery into the notches on the top of the battery compartment.



Note: Each time you remove the battery, check the rubber seal around the battery compartment. Make sure the rubber seal is seated in the groove and there is no dirt or debris on it. If the seal looks worn or damaged, contact customer service to order a replacement (see back cover for contact information).

3. Lower the battery until it rests flat in the compartment.
4. Bring the battery latch up and snap it into place.

Using the alkaline battery case

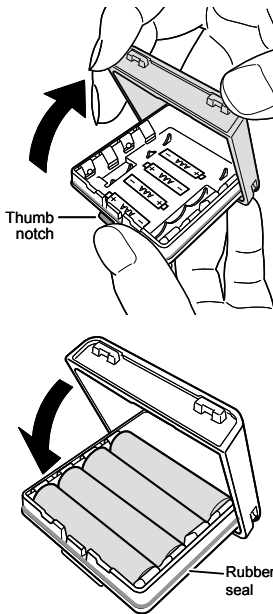
The radio also comes with a battery case that holds four AAA type alkaline batteries (not supplied). You can use alkaline batteries as a backup for the Li-Ion battery, so you can still use your radio while your Li-Ion battery is recharging. For best performance, West Marine recommends using extra-strength alkaline batteries, such as Duracell Ultra® batteries.

Note: When using alkaline batteries, transmit power is limited to a maximum of 2.5 watts.

Follow the steps below to use the alkaline battery case:

1. Hold the lower part of the case in one hand with the three battery contacts facing down. Use your thumb to hold the notch on the lower part of the case.
2. With your other hand, grip the upper part of the case and lift the cover open.
3. Align the batteries' positive and negative terminals with the drawing in the case, and snap each battery into place.
4. Insert the two hooks on the lower part of the case into the notches on the cover, and close the cover. (The cover fits snugly but you should not have to force it closed.)

Note: Each time you open the battery case, check the



rubber seal. Make sure the seal is seated in the groove and there is no dirt or debris on it. If the rubber seal looks worn or damaged, contact customer service to order a replacement (see back cover for contact information).

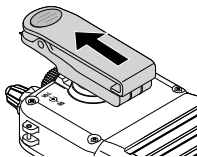
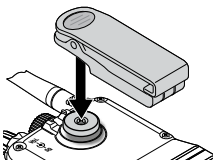
5. Install the alkaline battery case in your radio just as you do the Li-Ion battery (see page 17).

Warning: The case is designed to prevent the accidental charging of alkaline batteries. Never use alkaline batteries in the radio without the battery case. Do not attempt to modify the battery case design.

Attaching the belt clip

To attach the belt clip:

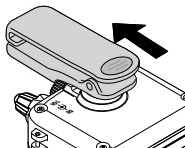
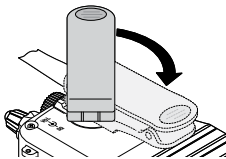
1. Hold the belt clip so that the finger indentation points to the top of the radio.



2. Align the center of the clip with the anchor post.
3. Place the clip on the post and slide the clip upwards until it clicks into place.

To remove the belt clip:

1. Rotate the clip so that the finger indentation is towards the bottom of the radio.



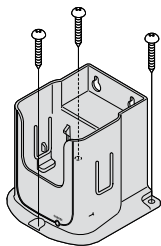
2. Slide the clip up until it comes free of the anchor post.

Mounting the charger

You can mount the charger on any flat surface or on a wall.

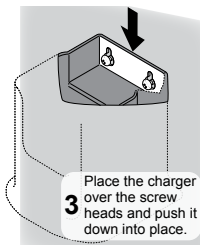
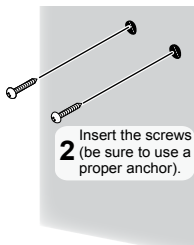
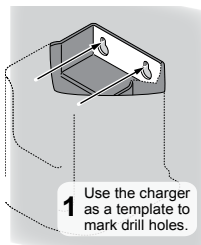
Mounting on a flat surface

1. Use the three holes at the base of the charger as a template to mark the drill holes.
2. Using a $\frac{1}{8}$ inch (or 3 mm) drill bit, drill three holes $\frac{1}{2}$ inch (13 mm) deep.
3. Use the provided screws to attach the charger to the surface.



Mounting on a wall

Before wall-mounting the charger, be sure the wall material is strong enough to hold the weight of both the radio and charger. Use anchors appropriate for the wall material.



1. Using the holes in the rear of the charger as a template, mark the location of the drill holes.
2. Using a $\frac{1}{8}$ inch (or 3 mm) drill bit, drill two holes $\frac{1}{2}$ inch (13 mm) deep. (If you are using anchors, follow the drilling instructions on the packaging.)
3. Insert the screws into the holes, leaving $\frac{1}{8}$ inch (3 mm) of space between the wall and the screw head.
4. Place the holes on the charger over the screw heads. Slide the charger down to lock it into place.

Using the Radio (General Operation)

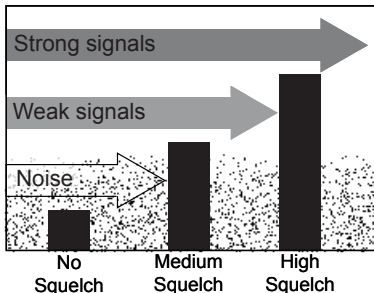
The following features and settings are available in all bands.

Setting the volume

Turn the **VOLUME-POWER** knob clockwise to increase the speaker volume, or counter-clockwise to decrease volume.

Setting the squelch level

The squelch feature reduces static on the speaker by filtering out any background channel noise. At the lowest squelch level, the speaker plays all signals, including any channel noise. Setting the squelch level higher filters out noise and lets only actual radio signals through.



While listening to a channel, adjust the **SQUELCH** knob until the noise is filtered and you can hear only the transmission. If you switch to a channel with a lot of noise or a weak transmission, you may need to readjust the squelch level again.

Note: Setting the squelch level too high may prevent you from hearing weaker transmissions. If you are having difficulty hearing a transmission, try setting the squelch level lower.

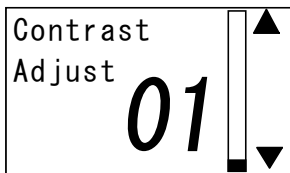
Changing the channel

Press the **CHANNEL UP** and **CHANNEL DOWN** buttons briefly to scroll through the channels one channel at a time. Press and hold the **CHANNEL UP** or **CHANNEL DOWN** button to quickly scroll through the channels.

Contrast

The display has 10 levels of contrast. To adjust the contrast:

1. Press the **MENU** button and select *Contrast*.
2. Use the **CHANNEL UP** and **CHANNEL DOWN** buttons to change the contrast to your desired level.
3. Press **ENTER** to set the new contrast level and exit the menu.



Lamp adjust

The LCD and keypad light up whenever you press a key on the radio; the backlight stays on for 5 seconds and then turns off automatically. You can change the amount of time the LCD and keypad backlight stays on.

1. Press the **MENU** button and choose *Lamp Adjust*.
2. Choose how you want the backlight to operate:
Always On makes the backlight stay on
Always Off makes the backlight never come on, or
Timer makes the backlight stay on for a set amount of time after you press a key.
3. If you select *Timer*, the radio prompts you to choose the amount of time you want the backlight to stay on. Choose from 5 seconds [*5sec (Default)*], *30 Seconds*, *1 Minute*, or *5 Minutes*.
4. Press **ENTER** to save the new setting.

Turning the key beep on and off

Key beep is the tone that sounds when you press a key or a button. To turn off the key beep, press the **MENU** button and choose *Key Beep*. Select *Off* and press **ENTER** to save the new setting. (Turning the key beep off will also turn off the confirmation tone when you change menu settings.)

Using the external speaker/mic jack

You can connect an optional external speaker-mic to this watertight jack. Unscrew the cap, which is held by the rubber cap-keeper to prevent loss. Insert the special gasketed plug and screw down the shell, which assures prevention of water entering the jack. Two available units are

- **HHSPM Speaker Mic** [West Marine SKU 7830425]
- **VOX100 Headset Mic.** [West Marine SKU 7830409]

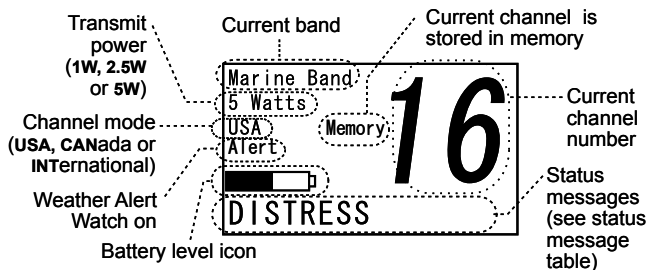
For details, consult your West Marine dealer or contact West Marine directly (see back cover for contact information).

Using the Marine VHF Band

The following features and options are available only when the radio is in the marine VHF band. To activate the marine band, press the **BAND-1/2.5/5W** button repeatedly until the display shows *VHF*.



Reading the marine band screen



Marine band status messages

Message	Displays When
(Channel Name)	No other status message is needed (see the tables starting on page 42 for a list of channel names)
<i>TRANSMITTING</i>	You press the PUSH TO TALK button.
<i>RELEASE PTT KEY</i>	You press the PUSH TO TALK button but you cannot transmit at the moment (for example, because you are on a receive-only channel).
<i>CHANNEL SCAN</i>	You turn on scanning mode.
<i>TRIWATCH</i>	You turn on triple watch mode.
<i>TRIWATCH SCAN</i>	You turn on triple watch mode while scanning.
<i>DUALWATCH</i>	You turn on dual watch mode.
<i>DUALWATCH SCAN</i>	You turn on dual watch mode while scanning..
<i>BATTERY LOW</i>	The battery power level is too low for normal operation (appears with the battery power level icon).

Marine VHF band menu options

Follow the steps below to open the marine VHF band menu:

1. If the top of the display does not show *Marine Band*, press the **BAND-1/2.5/5W** button repeatedly until the display shows *VHF*.
2. Wait for the display to show the marine band screen, then press the **MENU** button.
3. Refer to the table below for the available options and settings available in the marine band.

Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
USA/ CAN/INT	Change the channel mode from US to Canadian or International channels	<i>USA Mode</i> Canadian Mode Int'l Mode
Lamp Adjust	Change the operation of the display backlight	Always On <i>Timer (see page 22 for details)</i> Always Off
Contrast	Adjust the display contrast	10 contrast levels (<i>default = 7</i>)
Dual/ TriWatch	Choose between triple watch and dual watch	<i>16/9 TriWatch</i> 16 DualWatch
Key Beep	Turn the key touch tones on or off	<i>On</i> Off
FIPS Codes	Enter or edit the six-digit codes for the geographic areas that you want to hear hazard alerts for	<i>No FIPS codes entered.</i> See page 28 for instructions on entering FIPS codes
Channel Name	Change the name displayed for a channel or reset channel names back to their default settings	<i>See the tables starting on page 42 for default channel names</i> See page 27 for instructions on changing channel names.
Exit	Close the menu	

Making a transmission

Remove the radio from the charger, then press and hold the **PUSH TO TALK** button. Release the **PUSH TO TALK** button when you're finished talking to let the other party respond.

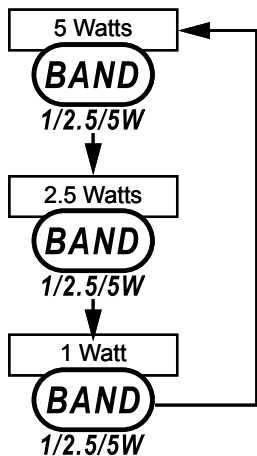
- To prevent stuck microphone problems or situations where the **PUSH TO TALK** button is pushed accidentally, the radio limits your talk time to 5 minutes in a single transmission. If you talk for over 5 minutes continuously, the display shows *RELEASE PTT KEY*.

- For the best sound quality, hold the microphone about two inches away from your mouth.
- See the tables starting on page 42 for a list of receive-only channels.

Boosting the transmission power

In most situations, 1 Watt of transmission power is all you need. If you find yourself far away from other stations and have trouble getting a response, you may need to boost the transmission power from 1 Watt to 2.5 Watts or 5 Watts:

1. Select the channel you want to transmit on
2. Press and hold the **BAND-1/2.5/5W** button for two seconds to switch to the next transmission power level (for example, from 5 Watts to 2.5 Watts; from 2.5 Watts to 1 Watt, or from 1 Watt around to 5 Watts).
3. The display shows the new transmission power in the upper left hand corner. The transmit power remains at the new setting until you change it again.



Note: Don't forget to change the transmission setting back to 1 Watt when you move close to other stations.

Some channels (for example, channels 13 and 67) limit the power of transmission to 1 Watt so that there is less interference between boaters attempting to use the channel at the same time. If you switch to one of these channels, the radio changes back to 1 Watt automatically. See the tables starting on page 42 for a list of power-restricted channels.

Choosing Triple Watch or Dual Watch

In Triple Watch mode, the radio checks channels 16 and 9 every two seconds. In Dual Watch mode, the radio checks channel 16 only. Generally, Triple Watch is used in areas where channel 9 is used as a hailing frequency, while Dual Watch is used in areas where channel 16 is used for distress and hailing. Your radio comes set to use Triple Watch; if you want to use Dual Watch instead, follow the steps below:

1. Open the menu and choose *Dual/Tri Watch*.
2. Highlight *16 DualWatch* and press the **ENTER** button. The radio activates the new setting and returns to the menu.
3. To reactivate Triple Watch, repeat the step described above, but choose *16/9 TriWatch*.

Dual/Tri Watch
16/9 TriWatch
16 DualWatch
Exit

Setting the UIC channel mode (USA/CAN/INT)

The radio comes preset to use the channels assigned for the US. If your current area uses Canadian or international channels, follow these steps to change the channel mode:

1. Open the menu and choose *USA/CAN/INT*.
2. Highlight the channel mode you want to use: US (*USA Mode*), Canadian (*Canadian Mode*), or international (*Intl Mode*).
3. Press the **ENTER** button. The radio activates the new channel mode and exits the menu.

Changing channel names

If you discover that a marine radio channel has a different common name in your local area, you can change the name of that channel to make it easier for you to use (see the channel lists starting on page 42 for the default channel names). To rename a channel, follow the steps below:

1. Open the menu and choose *Channel Name*. The screen displays the list of channels.
2. Use **CHANNEL UP** and **CHANNEL DOWN** buttons to highlight the channel you want to change and press the **ENTER** button.
3. Select *Rename* to enter a new name for this channel or *Default* to restore the channel's original name.
4. If you select *Rename*, the radio prompts you to enter a new name for this channel. Each name can be up to 16 characters. Use the **CHANNEL UP** and **CHANNEL DOWN** buttons to change the first character.
5. When the first character is correct, press the **ENTER** button. The cursor moves to the next character. Enter the remaining 15 characters of the name. (If the name is shorter than 16 characters, press the **ENTER** button repeatedly to complete the name entry.
6. When you finish entering the name, the radio sounds a confirmation tone and returns to the channel list.
7. When you are satisfied with the list of channel names, select *Exit* to close the menu screen.

Using FIPS codes for weather alerts

The US National Weather Service established 6-digit Federal Information Processing System (FIPS) codes to issue weather alerts in specific areas. You can choose which areas you want to hear alerts for by entering these FIPS codes in your radio. This can prevent you from being bothered by events that are far from where you are boating. The radio only sounds the alert tone if an incoming FIPS code matches one of the areas you selected.

- For more information about how the NWS uses FIPS codes, see the NWS website:
www.nws.noaa.gov/nwr/nwsfipschg.htm.
- To see an index of FIPS codes by state, see the

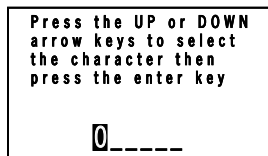
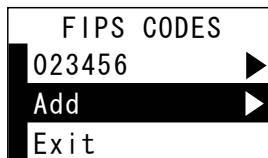
website of the National Institute of Standards and Technology (NIST):

www.itl.nist.gov/fipspubs/co-codes/states.htm.

Note: If you travel outside the areas you have entered into your radio, you may not hear alerts that effect your new location. Be sure to enter the FIPS codes of all the areas you plan to travel to on this trip.

Follow the steps below to edit the list of FIPS codes. You can store up to 20 different FIPS codes in your radio.

1. Open the menu and select *FIPS Codes*.
2. The screen displays any previously-entered FIPS codes. To add a new FIPS code, select *Add*.
3. Use the **CHANNEL UP** and **CHANNEL DOWN** buttons to change the first of the six digits; the **CHANNEL UP** button increases the number and the **CHANNEL DOWN** button decreases the number.



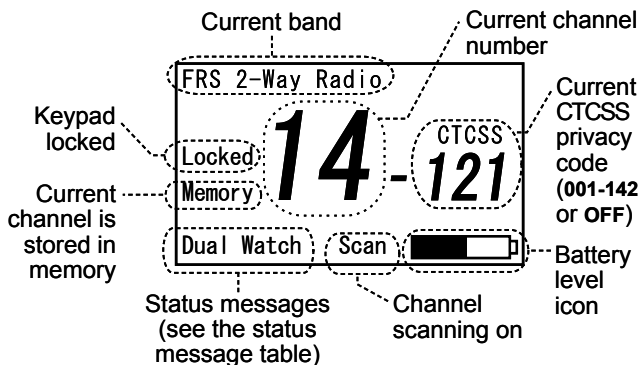
4. When the first digit is correct, press the **ENTER** button. The cursor moves to the next digit. Enter the remaining five digits of the FIPS code in the same way.
5. When the sixth digit is correct, press **ENTER**. The radio returns to the list of FIPS codes.
6. To change an existing FIPS code, select the code you want to change, then select *Delete* or *Edit*, then use the **CHANNEL UP** and **CHANNEL DOWN** buttons to change each of the six digits.
7. When you are satisfied with the list of FIPS codes, select *Exit* to close the menu screen.

Using the Family Radio Service (FRS) Band

The following features and options are available only when the radio is in the FRS band. To activate the FRS band, press the **BAND-1/2.5/5W** button repeatedly until the display shows *FRS*.

FRS

Reading the FRS band screen



FRS band status messages

Message	Displays When
<i>Transmitting</i>	You press the PUSH TO TALK button.
<i>Release PTT</i>	You press the PUSH TO TALK button but you cannot transmit at the moment (for example, because you are scanning).
<i>TriWatch</i>	You turn on triple watch mode.
<i>DualWatch</i>	You turn on dual watch mode.

FRS band menu options

Follow the steps below to open the FRS band menu:

1. If the top of the display does not show *FRS 2-Way Radio*, press the **BAND-1/2.5/5W** button repeatedly until the display shows *FRS*.
2. Wait for the display to show the FRS band screen, then press the **MENU** button.
3. Refer to the table below for the available options and settings available in the FRS band.

Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
CTCSS	Set privacy codes for each channel	<i>No privacy codes set.</i> See Setting privacy codes (below) for instructions.
Lamp Adjust	Change the operation of the display backlight	Always On <i>Timer (see page 22 for details)</i> Always Off
Contrast	Adjust the display contrast	10 contrast levels (<i>default = 7</i>)
Dual/TriWatch	Choose between triple watch and dual watch	<i>16/9 TriWatch</i> 16 DualWatch
Key Beep	Turn the key touch tones on or off	<i>On</i> Off
Exit	Close the menu	

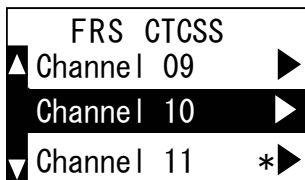
Setting CTCSS privacy codes

Normally, any FRS radio that is within range and using the same channel can hear FRS conversations. To prevent other radios from hearing you or reduce interference with other radios, you can enable one of the 142 privacy codes for any channel. Only radios that have the matching privacy code will be able to decipher your transmission (see page 46 for a detailed explanation of CTCSS and DSC privacy codes).

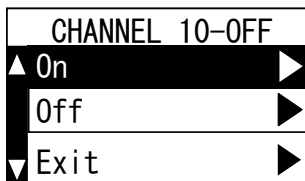
Note: Privacy codes are specific to each channel. Make sure the person you want to communicate with has the same code set on the same channel you do.

1. Open the FRS menu. Select **CTCSS** and press **ENTER**.

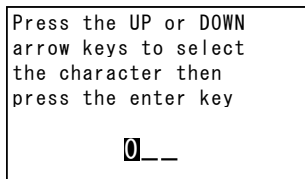
2. The current FRS channel is highlighted. Use the **CHANNEL UP** or **CHANNEL DOWN** button to select a different channel. Any channel that has a privacy code enabled has an asterisk in the display.



3. Choose *On* to enable a privacy code on this channel or choose *Off* to disable a previously-set code.



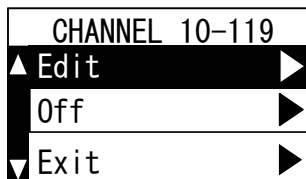
4. Enter a code number between 001 and 142. Use the **CHANNEL UP** and **CHANNEL DOWN** buttons to change the first digit; the **CHANNEL UP** button increases the number; the **CHANNEL DOWN** button decreases the number.



5. When the first digit is correct, press the **ENTER** button to move to the next digit. Enter the remaining two digits of the code in the same way.

Note: If you try to enter a code number less than 001 or greater than 142, an error tone sounds.

6. When the third digit is correct, press **ENTER**. The screen displays the channel along with the chosen code number. If you want to change the code, select *Edit*.



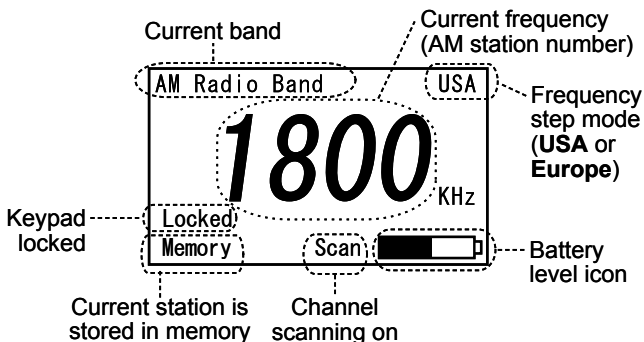
7. Select *Exit* to save the settings and exit the menu.

Using the AM Band

The following features and options are available only when the radio is in the AM band. To activate the AM band, press the **BAND-1/2.5/5W** button repeatedly until the display shows *AM*.



Reading the AM band screen



AM band menu reference

Follow the steps below to open the AM radio band menu:

1. If the top of the display does not show *AM Radio Band*, press the **BAND-1/2.5/5W** button repeatedly until the display shows *AM*.
2. Wait for the display to show the AM band screen, then press the **MENU** button.
3. Refer to the table below for the available options and settings available in the AM band.

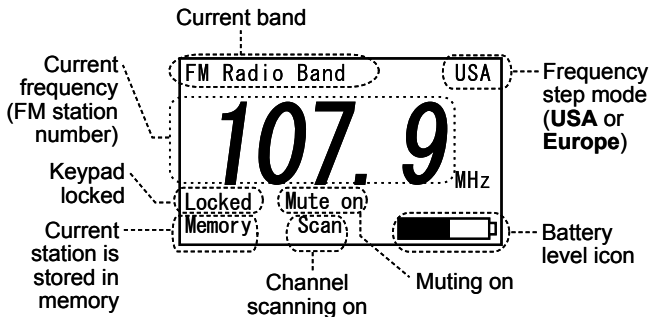
Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
Lamp Adjust	Change the operation of the display backlight	Always On <i>Timer (see page 22)</i> Always Off
Contrast	Adjust the display contrast	10 contrast levels (<i>default = 7</i>)
Tuning Steps	Set channel frequency steps to the US standard (10 kHz) or European standard (9 kHz)	9 kHz Steps <i>10 kHz Steps</i>
Key Beep	Turn the key touch and menu confirmation tones on or off	<i>On</i> Off
Exit	Close the menu	

Using the FM Band

The following features and options are available only when the radio is in the FM band. To activate the FM band, press the **BAND-1/2.5/5W** button repeatedly until the display shows *FM*.

A large, bold, italicized 'FM' logo is centered within a rectangular border.

Reading the FM band screen



FM band menu options

Follow the steps below to open the FM radio band menu:

1. If the top of the display does not show *FM Radio Band*, press the **BAND-1/2.5/5W** button repeatedly until the display shows *FM*.
2. Wait for the display to show the FM band screen, then press the **MENU** button.
3. Refer to the table below for the available options and settings available in the FM band.

Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
Lamp Adjust	Change the operation of the display backlight	Always On <i>Timer (see page 22)</i> Always Off
Contrast	Adjust the display contrast	10 contrast levels (<i>default = 7</i>)
FM Muting	Mute the noise between stations or from extremely weak signals	On Off

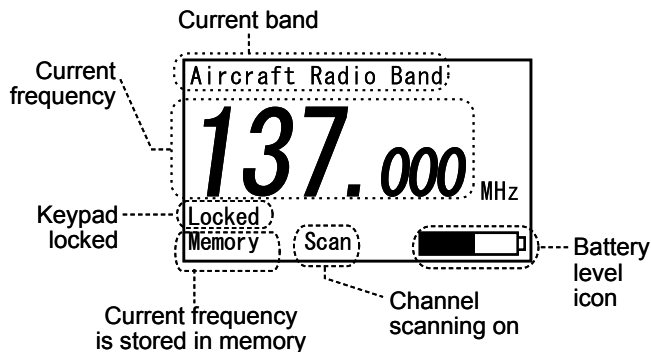
Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
Tuning Steps	Set channel frequency steps to the US standard (200 kHz) or European standard (100 kHz)	100 kHz Steps <i>200 kHz Steps</i>
Key Beep	Turn the key touch tones on or off	<i>On</i> Off
Exit	Close the menu	

Using the Aircraft Band

The following features and options are available only when the radio is in the aircraft band. To activate the aircraft band, press the **BAND-1/2.5/5W** button repeatedly until the display shows *AIR*.



Reading the aircraft band screen



Aircraft band menu options

Follow the steps below to open the aircraft band menu:

1. If the top of the display does not show *Aircraft Radio Band*, press the **BAND-1/2.5/5W** button repeatedly until the display shows *AIR*.
2. Wait for the display to show the aircraft band screen, then press the **MENU** button.
3. Refer to the table below for the available options and settings available in the aircraft band.

Menu Option	Use It To...	Available Settings (default setting is in <i>italics</i>)
Lamp Adjust	Change the operation of the display backlight	Always On <i>Timer (see page 22)</i> Always Off
Contrast	Adjust the display contrast	10 contrast levels <i>(default = 7)</i>
Key Beep	Turn the key touch tones on or off	<i>On</i> Off
Exit	Close the menu	

Maintenance and Troubleshooting

Due to its rugged design, the VHF250 requires very little maintenance. However, it is a precision electronic instrument, so you should follow a few precautions:

- If the antenna has been damaged, do not transmit except in an emergency situation. Transmitting with a defective antenna may cause further radio damage.
- You are responsible for continued FCC technical compliance of your radio.
- You should arrange for periodic performance checks with your West Marine dealer.

Common questions

Problem	Things to Try
The radio won't power on.	Check the battery power level.
The radio won't transmit.	Make sure you are not in weather or scan mode. Make sure you are not trying to transmit on a receive-only channel or that you are transmitting at the correct power level for this channel (see the channel lists starting on page 42). Make sure the duration of each transmission is less than 5 minutes.
Noise comes out of the speaker all the time	Adjust the squelch level; it is probably too low.
I can't hear anything from the speaker.	Adjust the squelch level; it is probably too high.
I can transmit, but no one can hear me.	In VHF, check your UIC channel settings (see page 27) In FRS, make sure the privacy codes match the radio you want to talk to (see page 31)
The display flashes, and I don't know why.	The numbers on the display will flash if the radio is in a watch mode or in scan mode. Try turning off scanning, Weather Alert Watch, or Triple/ Dual Watch (see page 10).
I can't read the display.	Adjust the contrast level (see page 22)
I'm not getting any hazard alerts.	Make sure Weather Alert Watch is turned on. Check to make sure the FIPS codes in your radio include your current location (see Using FIPS codes for weather alerts on page 28).
I'm getting all the hazard alerts, not just the ones for my area.	Check to make sure the FIPS codes in your radio were entered correctly (see Using FIPS codes for weather alerts on page 28). Sometimes the Weather Alert Watch may catch a hazard alert in the middle of the broadcast and miss which FIPS codes are affected. For your safety, when this happens, the radio triggers the alert tone and switches to the weather channel.
Where can I find my radio's serial number?	The serial number is on a plate inside the battery compartment.

Specifications

General Specifications

Channels	All USA, Canadian and International
Frequency Range Step	Marine-Weather: 156.05 ~ 163.275 MHz, 25 kHz Step FRS: 462.5625 ~ 467.7125 MHz, 12.5 kHz Step AM Broadcast: 500.00 ~ 1800 kHz, 10 or 9 kHz Step FM Broadcast: 87.5 ~ 108.0 MHz, 100 or 200 kHz Step Aircraft: 108.00 ~ 137.00 MHz, 25 kHz Step
Antenna	Fixed Mount Type
Connectors	External MIC/SPEAKER, 2.5 mm Diam. 3-contact Stereo type
Controls and Switches	Knobs: Volume with Power On/Off, Squelch Keys: Channel Up, Channel Down, 16/9-TRI, Menu, Enter, WX-Alert, Scan-Mem, Band-1/2.5/5W, Push to Talk, Backlight/Keypad Lock
Display	LCD 128 x 64 Full Dot Matrix
Backlight	LCD, Front keypad - orange
Cabinet Size	4.21H x 2.55W x 1.38D inches (107 x 65 x 35mm)
Weight	8.8 oz (250 g)
Speaker	Built-in 32mm diam. Dynamic type (8Ω, 0.7W)
Microphone	Built-in Electret type
Supplied Accessories	Li-Ion Battery Pack (7.4VDC, 1400mA/hr min) AC Adapter, Drop-In Charger, CLA DC Cord, Alkaline Battery Tray (4xAAA), Belt Clip, Hand Strap
Operating Temp.	-20° C to 50° C. (Battery charge: 0° C to 45° C)
Storage Temp.	-30° C to 60° C
AC Adapter	Input: 100VAC ~ 240VAC, 50/60Hz Output: 12VDC, 1A
Regulation	FCC, IC
Battery Life (Li-Ion)	10 Hours, Min.
Waterproof Grade	Compliant to JIS8/IPX8 Immersion Protection Standards. Submersible in one and a half meters of water for 30 minutes without damage.

Receiver Specifications

		Unit	Nominal	Limit
Sensitivity for 12dB SINAD	MRN	μV	0.3	0.4 max.
	FRS	μV	0.35	0.5 max.
	FM Broadcast	μV	1.0	3.0 max.
	Air	μV	1.0	30 max.
	AM Broadcast	μV	1.0	2.0 max.
Squelch Sensitivity	Threshold	μV	0.1	0.25 max.
	Tight	μV	0.7	2.0 max.
CTCSS/DSC Opening SINAD	FRS	dB	8	12 max.
Audio Freq. Response 1kHz Ref.	MRN @ 500 Hz	dB	6	3 to 7
	MRN @ 2000 Hz	dB	-6	-9 to -5
	FRS @ 500 Hz	dB	6	3 to 7
	FRS @ 2000 Hz	dB	-6	-9 to -5
Adjacent Channel Selectivity	MRN ±25 kHz	dB	72	60 min.
	FRS ±12.5 kHz	dB	40	30 min.
IM Rejection	MRN	dB	63	55 min.
Image and Supurious Rejection	MRN		75	50 min.
Conducted Spurious Emission at the Antenna Terminal		dBm	-65	-57 max.
Hum and Noise Ratio	MRN	dB	50	35 min.
	FRS	dB	37	32 min.
	AM Broadcast	dB	42	32 min.
	FM Broadcast	dB	53	32 min.
	Air	dB	42	32 min.
THD @ Standard Output Power (MRN)		%	1.2	10 max.
Audio Output Power @10% THD (MRN)		W	0.45	0.3 min
Oscillator Dropout Voltage (MRN)		V	2.9	3.8 max.
Current Drain @ No Signal (MRN)		mA	72	85 max.
Current Drain @ Maximum Output (MRN)		mA	220	250 max.

Transmitter Specifications

		Unit	Nominal
Frequency Tolerance @ 25°C to 50°C		PPM	± 0.5
Frequency Stability -20°C to 50°C		PPM	
Carrier Power	(MRN 5W)	W	5
	(MRN 2.5W)	W	2.5
	(MRN 1W)	W	1
	(FRS/MRN 0.5W)	W	0.5
Spurious Emission	(MRN 5W)	dBc	53
	(MRN 2.5W/1W)	dBc	58
Modulation Frequency Response	500 MHz	dB	-6
	2000 MHz	dB	+6
Microphone Sensitivity	(MRN for ± 3 kHz Deviation)	mV	6
	(FRS for ±1.5 kHz Deviation)	mV	6
Maximum Deviation @ 100mV Input	(MRN)	kHz	± 4.5
	(FRS with Subaudio)	kHz	± 2.3
Modulation Distortion 750 µS De-emphas 0.3 to 3 kHz BPF		%	0.6
Hum and Noise 750 µS	(MRN)	dB	38
De-emphas 0.3 to 3 kHz PF	(FRS)	dB	35
Current Drain @ High Power 5W	(MRN)	mA	1500
	(FRS)	mA	650

Channels and Frequencies

US channel frequencies and names

US Marine Channels					
Ch	RX Freq	TX Freq	Status	Full name	16-Character Name
1A	156.0500	156.0500	Simplex	Vessel traffic system/ commercial	VTS/ COMMERCIAL
3A	156.1500	156.1500	Simplex	Coast guard, govt only	COAST GUARD ONLY
5A	156.2500	156.2500	Simplex	Vessel traffic system/ commercial	VTS/ COMMERCIAL
6	156.3000	156.3000	Simplex	Inter-ship safety	SAFETY
7A	156.3500	156.3500	Simplex	Commercial	COMMERCIAL
8	156.4000	156.4000	Simplex	Commercial	COMMERCIAL
9	156.4500	156.4500	Simplex	Non commercial	NON COMMERCIAL
10	156.5000	156.5000	Simplex	Commercial	COMMERCIAL
11	156.5500	156.5500	Simplex	Vessel traffic system	VESSEL TRAFFIC
12	156.6000	156.6000	Simplex	Vessel traffic system	VESSEL TRAFFIC
13	156.6500	156.6500	Simplex, 1W	Bridge to bridge	BRIDGE TO BRIDGE
14	156.7000	156.7000	Simplex	Vessel traffic system	VESSEL TRAFFIC
15	156.7500	Inhibit	Receive Only	Environmental	ENVIRONMENTAL
16	156.8000	156.8000	Simplex	Distress/safety/calling	DISTRESS
17	156.8500	156.8500	Simplex, 1W	Govt maritime control	GOVERNMENT
18A	156.9000	156.9000	Simplex	Commercial	COMMERCIAL
19A	156.9500	156.9500	Simplex	Commercial	COMMERCIAL
20	161.6000	157.0000	Duplex	Port operation	PORT OPERATION
20A	157.0000	157.0000	Simplex	Port operation	PORT OPERATION
21A	157.0500	157.0500	Simplex	Coast guard only	COAST GUARD ONLY
22A	157.1000	157.1000	Simplex	Coast guard	COAST GUARD
23A	157.1500	157.1500	Simplex	Coast guard only	COAST GUARD ONLY
24	161.8000	157.2000	Duplex	Marine operator	MARINE OPERATOR
25	161.8500	157.2500	Duplex	Marine operator	MARINE OPERATOR
26	161.9000	157.3000	Duplex	Marine operator	MARINE OPERATOR
27	161.9500	157.3500	Duplex	Marine operator	MARINE OPERATOR
28	162.0000	157.4000	Duplex	Marine operator	MARINE OPERATOR
61A	156.0750	156.0750	Simplex	Coast guard	COAST GUARD
63A	156.1750	156.1750	Simplex	Vessel traffic system	VESSEL TRAFFIC
64A	156.2250	156.2250	Simplex	Commercial	COMMERCIAL
65A	156.2750	156.2750	Simplex	Port operation	PORT OPERATION
66A	156.3250	156.3250	Simplex	Port operation	PORT OPERATION
67	156.3750	156.3750	Simplex, 1W	Bridge To Bridge	BRIDGE TO BRIDGE
68	156.4250	156.4250	Simplex	Non Commercial	NON COMMERCIAL
69	156.4750	156.4750	Simplex	Non Commercial	NON COMMERCIAL
70	156.5250	Inhibit	Receive Only	Digital Selective Calling	DSC RECEIVE ONLY

US Marine Channels					
Ch	RX Freq	TX Freq	Status	Full name	16-Character Name
71	156.5750	156.5750	Simplex	Non Commercial	NON COMMERCIAL
72	156.6250	156.6250	Simplex	Non Commercial (Ship-Ship)	NON COMMERCIAL
73	156.6750	156.6750	Simplex	Port Operation	PORT OPERATION
74	156.7250	156.7250	Simplex	Port Operation	PORT OPERATION
75	156.7750	156.7750	Simplex, 1W	Port Operation	PORT OPERATION
76	156.8250	156.8250	Simplex, 1W	Port Operation	PORT OPERATION
77	156.8750	156.8750	Simplex, 1W	Port Operation (Ship-Ship)	PORT OPERATION
78A	156.9250	156.9250	Simplex	Non Commercial	NON COMMERCIAL
79A	156.9750	156.9750	Simplex	Commercial	COMMERCIAL
80A	157.0250	157.0250	Simplex	Commercial	COMMERCIAL
81A	157.0750	157.0750	Simplex	Coast Guard	COAST GUARD
82A	157.1250	157.1250	Simplex	Coast Guard	COAST GUARD
83A	157.1750	157.1750	Simplex	Government	GOVERNMENT
84	161.8250	157.2250	Duplex	Marine Operator	MARINE OPERATOR
85	161.8750	157.2750	Duplex	Marine Operator	MARINE OPERATOR
86	161.9250	157.3250	Duplex	Marine Operator	MARINE OPERATOR
87	161.9750	157.3750	Duplex	Marine Operator	MARINE OPERATOR
88	162.0250	157.4250	Duplex	Marine Operator	MARINE OPERATOR
88A	157.4250	157.4250	Simplex	Commercial (Ship-Ship)	COMMERCIAL

Canadian channel frequencies and names

Canadian Marine Channels					
Ch	RX Freq	TX Freq	Status	Full Name	16-Character Name
1	160.6500	156.0500	Duplex	Marine Operator	MARINE OPERATOR
2	160.7000	156.1000	Duplex	Marine Operator	MARINE OPERATOR
3	160.7500	156.1500	Duplex	Marine Operator	MARINE OPERATOR
4A	156.2000	156.2000	Simplex	Canadian Coast Guard	COAST GUARD
5A	156.2500	156.2500	Simplex	Vessel Traffic System	VESSEL TRAFFIC
6	156.3000	156.3000	Simplex	Inter-Ship Safety	SAFETY
7A	156.3500	156.3500	Simplex	Commercial	COMMERCIAL
8	156.4000	156.4000	Simplex	Commercial	COMMERCIAL
9	156.4500	156.4500	Simplex	Boater Calling Channel	CALLING
10	156.5000	156.5000	Simplex	Commercial	COMMERCIAL
11	156.5500	156.5500	Simplex	Vessel Traffic System	VESSEL TRAFFIC
12	156.6000	156.6000	Simplex	Vessel Traffic System	VESSEL TRAFFIC
13	156.6500	156.6500	Simplex, 1W	Bridge To Bridge	BRIDGE TO BRIDGE
14	156.7000	156.7000	Simplex	Vessel Traffic System	VESSEL TRAFFIC
15	156.7500	156.7500	Simplex	Environmental	ENVIRONMENTAL
16	156.8000	156.8000	Simplex	Distress, safety, calling	DISTRESS
17	156.8500	156.8500	Simplex, 1W	State Control	STATE CONTROL

Canadian Marine Channels

Ch	RX Freq	TX Freq	Status	Full Name	16-Character Name
18A	156.9000	156.9000	Simplex	Commercial	COMMERCIAL
19A	156.9500	156.9500	Simplex	Canadian Coast Guard	COAST GUARD
20	161.6000	157.0000	Duplex, 1W	Port Operation	PORT OPERATION
21A	157.0500	157.0500	Simplex	Canadian Coast Guard	COAST GUARD
22A	157.1000	157.1000	Simplex	Canadian Coast Guard	COAST GUARD
23	161.7500	157.1500	Duplex	Canadian Coast Guard	COAST GUARD
24	161.8000	157.2000	Duplex	Marine Operator	MARINE OPERATOR
25	161.8500	157.2500	Duplex	Marine Operator	MARINE OPERATOR
26	161.9000	157.3000	Duplex	Marine Operator	MARINE OPERATOR
27	161.9500	157.3500	Duplex	Marine Operator	MARINE OPERATOR
28	162.0000	157.4000	Duplex	Marine Operator	MARINE OPERATOR
60	160.6250	156.0250	Duplex	Marine Operator	MARINE OPERATOR
61A	156.0750	156.0750	Simplex	Canadian Coast Guard	COAST GUARD
62A	156.1250	156.1250	Simplex	Canadian Coast Guard	COAST GUARD
64	160.8250	156.2250	Duplex	Marine Operator	MARINE OPERATOR
64A	156.2250	156.2250	Simplex	Marine Operator	MARINE OPERATOR
65A	156.2750	156.2750	Simplex	Search And Rescue	SEARCH & RESCUE
66A	156.3250	156.3250	Simplex, 1W	Port Operation	PORT OPERATION
67	156.3750	156.3750	Simplex	Bridge To Bridge	BRIDGE TO BRIDGE
68	156.4250	156.4250	Simplex	Non Commercial	NON COMMERCIAL
69	156.4750	156.4750	Simplex	Non Commercial	NON COMMERCIAL
70	156.5250	Inhibit	Receive Only	Digital Selective Calling	DSC RECEIVE ONLY
71	156.5750	156.5750	Simplex	Non Commercial	NON COMMERCIAL
72	156.6250	156.6250	Simplex	Non Commercial	NON COMMERCIAL
73	156.6750	156.6750	Simplex	Port Operation	PORT OPERATION
74	156.7250	156.7250	Simplex	Port Operation	PORT OPERATION
75	156.7750	156.7750	Simplex, 1W	Port Operation	PORT OPERATION
76	156.8250	156.8250	Simplex, 1W	Port Operation	PORT OPERATION
77	156.8750	156.8750	Simplex, 1W	Port Operation	PORT OPERATION
78A	156.9250	156.9250	Simplex	Inter Ship	INTER SHIP
79A	156.9750	156.9750	Simplex	Inter Ship	INTER SHIP
80A	157.0250	157.0250	Simplex	Inter Ship	INTER SHIP
81A	157.0750	157.0750	Simplex	Canadian Coast Guard	COAST GUARD
82A	157.1250	157.1250	Simplex	Canadian Coast Guard	COAST GUARD
83	161.7750	157.1750	Duplex	Canadian Coast Guard	COAST GUARD
83A	157.1750	157.1750	Simplex	Canadian Coast Guard	COAST GUARD
84	161.8250	157.2250	Duplex	Marine Operator	MARINE OPERATOR
85	161.8750	157.2750	Duplex	Marine Operator	MARINE OPERATOR
86	161.9250	157.3250	Duplex	Marine Operator	MARINE OPERATOR
87	161.9750	157.3750	Duplex	Marine Operator	MARINE OPERATOR
88	162.0250	157.4250	Duplex	Marine Operator	MARINE OPERATOR

International channel frequencies and names

International Marine Channels					
Ch	RX Freq	TX Freq	Status	Full Name	16-Character Name
1	160.6500	156.0500	Duplex	Marine operator	MARINE OPERATOR
2	160.7000	156.1000	Duplex	Marine operator	MARINE OPERATOR
3	160.7500	156.1500	Duplex	Marine operator	MARINE OPERATOR
4	160.8000	156.2000	Duplex	Marine operator	MARINE OPERATOR
5	160.8500	156.2500	Duplex	Marine operator	MARINE OPERATOR
6	156.3000	156.3000	Simplex	Inter-ship safety	SAFETY
7	160.9500	156.3500	Duplex	Marine operator	MARINE OPERATOR
8	156.4000	156.4000	Simplex	Commercial (ship-ship)	COMMERCIAL
9	156.4500	156.4500	Simplex	Boater calling channel	CALLING
10	156.5000	156.5000	Simplex	Commercial	COMMERCIAL
11	156.5500	156.5500	Simplex	Vessel traffic system	VESSEL TRAFFIC
12	156.6000	156.6000	Simplex	Vessel traffic system	VESSEL TRAFFIC
13	156.6500	156.6500	Simplex	Bridge to bridge	BRIDGE TO BRIDGE
14	156.7000	156.7000	Simplex	Vessel traffic system	VESSEL TRAFFIC
15	156.7500	156.7500	Simplex, 1W	Environmental	ENVIRONMENTAL
16	156.8000	156.8000	Simplex	Distress, safety, calling	DISTRESS
17	156.8500	156.8500	Simplex, 1W	Govt maritime control	GOVERNMENT
18	161.5000	156.9000	Duplex	Port operation	PORT OPERATION
19	161.5500	156.9500	Duplex	Commercial	COMMERCIAL
20	161.6000	157.0000	Duplex	Port operation	PORT OPERATION
21	161.6500	157.0500	Duplex	Port operation	PORT OPERATION
22	161.7000	157.1000	Duplex	Port operation	PORT OPERATION
23	161.7500	157.1500	Duplex	Marine operator	MARINE OPERATOR
24	161.8000	157.2000	Duplex	Marine operator	MARINE OPERATOR
25	161.8500	157.2500	Duplex	Marine operator	MARINE OPERATOR
26	161.9000	157.3000	Duplex	Marine operator	MARINE OPERATOR
27	161.9500	157.3500	Duplex	Marine operator	MARINE OPERATOR
28	162.0000	157.4000	Duplex	Marine operator	MARINE OPERATOR
60	160.6250	156.0250	Duplex	Marine operator	MARINE OPERATOR
61	160.6750	156.0750	Duplex	Marine operator	MARINE OPERATOR
62	160.7250	156.1250	Duplex	Marine operator	MARINE OPERATOR
63	160.7750	156.1750	Duplex	Marine operator	MARINE OPERATOR
64	160.8250	156.2250	Duplex	Marine operator	MARINE OPERATOR
65	160.8750	156.2750	Duplex	Marine operator	MARINE OPERATOR
66	160.9250	156.3250	Duplex	Marine operator	MARINE OPERATOR
67	156.3750	156.3750	Simplex	Bridge to bridge	BRIDGE TO BRIDGE
68	156.4250	156.4250	Simplex	Non commercial	NON COMMERCIAL
69	156.4750	156.4750	Simplex	Non commercial	NON COMMERCIAL
70	156.5250	Inhibit	Receive Only	Digital Selective Calling	DSC RECEIVE ONLY
71	156.5750	156.5750	Simplex	Non commercial	NON COMMERCIAL
72	156.6250	156.6250	Simplex	Non commercial	NON COMMERCIAL
73	156.6750	156.6750	Simplex	Port operation	PORT OPERATION
74	156.7250	156.7250	Simplex	Port operation	PORT OPERATION

International Marine Channels					
Ch	RX Freq	TX Freq	Status	Full Name	16-Character Name
75	156.7750	156.7750	Simplex, 1W	Port operation	PORT OPERATION
76	156.8250	156.8250	Simplex, 1W	Port operation	PORT OPERATION
77	156.8750	156.8750	Simplex	Port operation (ship-ship)	PORT OPERATION
78	161.5250	156.9250	Duplex	Port operation	PORT OPERATION
79	161.5750	156.9750	Duplex	Port operation	PORT OPERATION
80	161.6250	157.0250	Duplex	Port operation	PORT OPERATION
81	161.6750	157.0750	Duplex	Port operation	PORT OPERATION
82	161.7250	157.1250	Duplex	Port operation	PORT OPERATION
83	161.7750	157.1750	Duplex	Port operation	PORT OPERATION
84	161.8250	157.2250	Duplex	Marine operator	MARINE OPERATOR
85	161.8750	157.2750	Duplex	Marine operator	MARINE OPERATOR
86	161.9250	157.3250	Duplex	Marine operator	MARINE OPERATOR
87	161.9750	157.3750	Duplex	Marine operator	MARINE OPERATOR
88	162.0250	157.4250	Duplex	Marine operator	MARINE OPERATOR

Weather channel frequencies

Channel	RX
WX01	162.5500
WX02	162.4000
WX03	162.4750
WX04	162.4250
WX05	162.4500
WX06	162.5000
WX07	162.5250
WX08	161.6500
WX09	161.7750
WX10	163.2750

FRS channel frequencies

Channel	Frequency (MHz)
1	462.5625
2	462.5875
3	462.6125
4	462.6375
5	462.6625
6	462.6875
7	462.7125
8	467.5625
9	467.5875
10	467.6125
11	467.6375
12	467.6625
13	467.6875
14	467.7125

FRS privacy codes (CTCSS and DSC codes)

The 142 available privacy codes are a combination of two different types: 38 Continuous Tone Coded Squelch System (CTCSS) codes (numbered 001 to 038) and 104 Digital Squelch Control (DSC) codes (numbered 039 to 142). As long as you are communicating with another West Marine or a Uniden radio, the specific type of code does not matter: just make the numbers designating the privacy codes match.

If you are trying to communicate with another brand of FRS radio, you may need to know the actual frequency (for CTCSS codes) or the octal code (for DSC codes) to program the other radio. Use the following tables to find the frequency of the CTCSS code or the octal code of the DSC code:

CTCSS Code	Freq. (Hz)
001	67.0
002	71.9
003	74.4
004	77.0
005	79.7
006	82.5
007	85.4
008	88.5
009	91.5
010	94.8
011	97.4
012	100.0
013	103.5
014	107.2
015	110.9
016	114.8
017	118.8
018	123.0
019	127.3
020	131.8
021	136.5
022	141.3
023	146.2
024	151.4
025	156.7
026	162.2
027	167.9
028	173.8
029	179.9
030	186.2
031	192.8
032	203.5
033	210.7
034	218.1
035	225.7
036	233.6

037	241.8
038	250.3

DSC Code	Octal Code
039	023
040	025
041	026
042	031
043	032
044	043
045	047
046	051
047	054
048	065
049	071
050	072
051	073
052	074
053	114
054	115
055	116
056	125
057	131
058	132
059	134
060	143
061	152
062	155
063	156
064	162
065	165
066	172
067	174
068	205
069	223
070	226
071	243

DSC Code	Octal Code
072	244
073	245
074	251
075	261
076	263
077	265
078	271
079	306
080	311
081	315
082	331
083	343
084	346
085	351
086	364
087	365
088	371
089	411
090	412
091	413
092	423
093	431
094	432
095	445
096	464
097	465
098	466
099	503
100	506
101	516
102	532
103	546
104	565
105	606
106	612
107	624

DSC Code	Octal Code
108	627
109	631
111	654
112	662
113	664
114	703
115	712
116	723
117	731
118	732
119	734
120	743
121	754
122	036
123	053
124	122
125	145
126	212
127	225
128	246
129	252
130	255
131	266
132	274
133	325
134	332
135	356
136	446
137	452
138	454
139	455
140	462
141	523
142	526

CEA2009-SAME event codes

Received Code	Event Code (Scrolling Name)	Display (16 Characters)
ADR	Administrative Message	ADMIN MESSAGE
AVA	Avalanche Watch	AVALANCHE WATCH
AVW	Avalanche Warning	AVALANCHE WARN
BHW	Biological Hazard Warning	BIOLOGICAL WARN
BWW	Boil Water Warning	BOIL WATER WARN
BZW	Blizzard Warning	BLIZZARD WARNING
CAE	Child Abduction Emergency	CHILD EMERGENCY
CDW	Civil Danger Warning	CIVIL DANGER
CEM	Civil Emergency Message	CIVIL EMERGENCY
CFA	Coastal Flood Watch	COASTAL FLOOD
CFW	Coastal Flood Warning	COASTAL FLOOD
CHW	Chemical Hazard Warning	CHEMICAL HAZARD
DBA	Dam Watch	DAM BREAK WATCH
DBW	Dam Break Warning	DAM BREAK WARN
DEW	Contagious Disease Warning	CONTAGIOUS WARN
DMO	Practice/demo	SYSTEM DEMO
DSW	Dust Storm Warning	DUST STORM WARN
EAN	Emergency Action Notification	EMERGENCY NOTIFY
EAT	Emergency Action Termination	EMERGENCY END
EQW	Earthquake Warning	EARTHQUAKE WARN
EVI	Immediate Evacuation	IMMED EVACUTATION
EVA	Evacuation Watch	EVACUATION
FCW	Food Contamination Warning	FOOD CONTAMIN
FFA	Flash Flood Watch	FLASH FLOOD WARN
FFS	Flash Flood Statement	FLASH FLOOD WARN
FFW	Flash Flood Warning	FLASH FLOOD WARN
FLA	Flood Watch	FLOOD WATCH
FLS	Flood Statement	FLOOD STATEMENT
FLW	Flood Warning	FLOOD WARNING
FRW	Fire Warning	FIRE WARNING
FSW	Flash Freeze Warning	FLASH FREEZE
FZW	Freeze Warning	FREEZE WARNING
HLS	Hurricane Statement	HURRICANE
HMW	Hazardous Material Warning	HAZARDOUS WARN
HUW	Hurricane Watch	HURRICANE WATCH

Received Code	Event Code (Scrolling Name)	Display (16 Charactes)
HWA	High Wind Watch	HIGH WIND WATCH
HWW	High Wind Warning	HIGH WIND WARN
IBW	Iceberg Warning	ICEBERG
IFW	Industrial Fire Warning	INDUSTRIAL FIRE
LAE	Local Area Emergency	LOCAL EMERGENCY
LEW	Law Enforcment Warning	LAW ENFORCE WARN
LSW	Land Slide Warning	LAND SLIDE WARN
NAT	National Audible Test	NATIONAL AUDIBLE
NIC	National Information Center	NATIONAL INFORM
NMN	Network Notification Message	NETWORK MESSAGE
NPT	National Periodic Test	NATIONAL PERIODIC
NST	National Silent Test	NATIONAL SILENT
NUW	Nuclear Power Plant Warning	NUCLEAR WARNING
POS	Power Outage Advisory	POWER OUTAGE ADV
RHW	Radiological Hazard	RADIOLOGICAL
RMT	Required Monthly Test	REQ MONTHLY TEST
RWT	Required Weekly Test	REQ WEEKLY TEST
SMW	Special Marine Warning	SPECIAL MRN WARN
SPS	Special Weather Statement	SPECIAL WEATHER
SPW	Shelter In-place Warning	SHELTER IN-PLACE
SVA	Severe Thunderstorm Watch	THUNDERSTORM
SVR	Severe Thunderstorm Warning	THUNDERSTORM
SVS	Severe Weather Statement	SEVERE WEATHER
TOA	Tornado Watch	TORNADO WATCH
TOE	911 Telephone Outage Emergency	911 OUTAGE
TOR	Tornado Warning	TORNADO WARN
TRA	Tropical Storm Watch	TROPIC STORM
TRW	Tropical Storm Warning	TROPIC STORM
TSA	Tsunami Watch	TSUNAMI WATCH
TSW	Tsunami Warning	TSUNAMI WARNING
VOW	Volcano Warning	VOLCANO WARNING
WFW	Wild Fire Warning	WILD FIRE WARN
WFA	Wild Fire Watch	WILD FIRE WATCH
WSA	Winter Storm Watch	WINTER STORM
WSW	Winter Storm Warning	WINTER STORM
** A	Unrecognized Watch	UNRECOGNIZED

Received Code	Event Code (Scrolling Name)	Display (16 Characters)
** E	Unrecognized Emergency	UNRECOGNIZED
** S	Unrecognized Statement	UNRECOGNIZED
** W	Unrecognized Warning	UNRECOGNIZED
TXB	Transmitter Backup On	No event code shown
TXF	Transmitter Carrier On	No event code shown
TXO	Transmitter Carrier Off	No event code shown
TXP	Transmitter Primary On	No event code shown

Regulations and Safety Warnings

WARNING! Read this information before using the radio.

Maritime radio services operation

Warning! This transmitter will operate on channels/frequencies that have restricted use in the United States. The channel assignments include frequencies assigned for exclusive use of the U.S. Coast Guard, use in Canada, and use in international waters. Operation on these frequencies without proper authorization is strictly forbidden. See pages 43 through 47 for tables of the available channels and their uses. If you are still not certain which channels to use, see the FCC maritime radio page at the FCC website (<http://wireless.fcc.gov/marine/>) or contact the FCC Call Center at 1-888-CALL-FCC. For individuals requiring a license, such as commercial users, you should obtain a license application from your nearest FCC field office (for US users) or Industry Canada (for Canadian users).

Basic radio guidelines

You should familiarize yourself with the rules on marine radios and be aware of which rules apply to your boat. Complete guidelines for all ship and marine radio types can be found at the US Coast Guard website under the topic *Radio Info for Boaters* (<http://www.navcen.uscg.gov/marcomms/boater.htm>). Here are a few guidelines that affect nearly all boaters.

- If you have a VHF radio on your boat, you must maintain a watch on channel 16 (156.800 MHz) whenever the radio is not being used to communicate. If you carry a radio, it must be on and set to channel 16 whenever your boat is underway.

- If you hear a distress call, wait a few minutes to let a shore station or Coast Guard vessel respond. If no other station has responded after 5 minutes, you must respond to the distress call.
- Do not make false mayday or distress calls as a prank or to test your radio. (This is essentially like making a false 9-1-1 call; you may be subject to fines.)

FCC/Industry Canada information

- Certification: FCC Part 80 or RSS-182/188
- Output Power: 5W
- Emission: 16K0F3E, 16K0F2D
- Transmitter Frequency Range: 156.025-157.425 MHz

This device complies with Part 80 of the FCC Rules, as well as Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Unauthorized changes or modifications to this equipment may void compliance with the FCC Rules. Any change or modification must be approved in writing by West Marine. Changes or modifications not approved by West Marine could void the user's authority to operate the equipment.

FCC RF exposure information

In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters. Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of the radio complies with the FCC guidelines and these international standards.

Never allow children to operate the radio without adult supervision and the knowledge of the following guidelines.

WARNING! It is up to the user to properly operate this radio transmitter to insure safe operation. Please adhere to the following:

- Use only the supplied or an approved antenna. Unauthorized antennas, modifications, or attachments could impair call quality, damage the radio, or violate FCC regulations.
- Do not use the radio with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result. Contact your local dealer for a replacement antenna.

- **Body-worn Operation:** This device was tested for typical body-worn operations using the supplied belt-clip. To maintain compliance with FCC RF exposure requirements, body-worn operations are restricted to the supplied belt-clip. For hand-held operation, the radio should be held 1 inch from the user's face. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements and should be avoided. For more information about RF exposure, visit the FCC website at www.fcc.gov.

Lithium ion battery warning

This equipment contains a rechargeable Lithium Ion battery. The rechargeable Lithium Ion battery contained in this equipment may explode if disposed of in a fire.

Do not short-circuit the battery.

Do not charge the rechargeable battery used in this equipment in any charger other than the one specified in the owner's manual. Using another charger may damage the battery or cause the battery to explode.

Li-ion batteries must be recycled or disposed of properly.

Avoid exposing the battery (whether attached to the radio or not) to direct sunlight, heated cars, or temperatures below -4°F (-20°C) or above +140°F (+60°C). Exposing the chemical contained within the battery pack to temperatures above +140°F (+60°C) may cause the battery to rupture, fail, or reduce performance.

In case of exposure to the cell contents, wash the affected area thoroughly, and seek medical attention.

Three Year Limited Warranty Statement

WARRANTOR: WEST MARINE, INC. ("West Marine")

ELEMENTS OF WARRANTY: West Marine warrants, for three years, to the original retail owner, this West Marine Product to be free from defects in materials and crafts-manship with only the limitations or exclusions set out below.

WARRANTY DURATION: This warranty to the original user shall terminate and be of no further effect 36 months after the date of original retail sale. The warranty is invalid if the Product is (A) damaged or not maintained as reasonable or necessary, (B) modified, altered, or used as part of any con-version kits, subassem-

blies, or any configurations not sold by West Marine, (C) improperly installed, (D) serviced or repaired by someone other than an authorized West Marine service center for a defect or malfunction covered by this warranty, (E) used in any conjunction with equipment or parts or as part of any system not manufactured by West Marine, or (F) installed or programmed by anyone other than as detailed by the Operating Guide for this product.

STATEMENT OF REMEDY: In the event that the product does not conform to this warranty at any time while this warranty is in effect, warrantor will repair the defect and return it to you without charge for parts, service, or any other cost (except shipping and handling) incurred by warrantor or its representatives in connection with the performance of this warranty. **THE LIMITED WARRANTY SET FORTH ABOVE IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO THE PRODUCT AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES OF ANY NATURE WHATSOEVER, WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.** Some states do not allow this exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

LEGAL REMEDIES: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty is void outside the United States of America.

PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY: If, after following the instructions in this Operating Guide you are certain that the Product is defective, pack the Product carefully (preferably in its original packaging). Include evidence of original purchase and a note describing the defect that has caused you to return it. The Product should be shipped freight prepaid, by traceable means, or delivered, to warrantor at:

West Marine Electronic Repair Center
2395 Bert Court
Hollister, CA 95023
(831) 761-4205

QUESTIONS?

Contact your local
West Marine store

Call 1-800-BOATING

Visit our website at
www.westmarine.com

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Watsonville, CA

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