JENSEN®

M A R I N E

JMS2012

MARINE AUDIO SYSTEM

Installation and Operation Manual

CONTENTS

"Made for iPod" and "Made for iPhone" mean that an electronic accessory has been designed to connect specifically to iPod or iPhone respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod or iPhone may affect wireless performance.

INTRODUCTION

System Features

Features of the Jensen JMS2012 mobile audio system include:

- Full Dot Matrix LCD
- AM/FM USA/EUR Tuner with 30 Presets (12 AM, 18 FM)
- RBDS (Radio Broadcast Data Service) with PTY Search
- SIRIUS Radio Ready
- Made for iPod® and iPhone® (Cable Sold Separately)
- Weatherband Tuner
- Mute
- Pre-set Equalizer - 5 settings (Flat, Rock, Pop, Classical, Pop, User)
- Electronic Bass, Treble, Balance and Fader Controls
- Output Power 40W x 4
- Low Battery Alarm
- IR Wireless Remote Control Ready (sold separately)
- 2-Channel Pre-amp Line Level Outputs
- 2-Wire Power with Non-Volatile Memory and Clock/Time Support
- Auxiliary Audio Input (Rear RCA)

Harware Contents List

M5 NUT x 1

WIRE HARNESS x 1

MOUNTING
SCREW
COVER x 2

MOUNTING STRAP
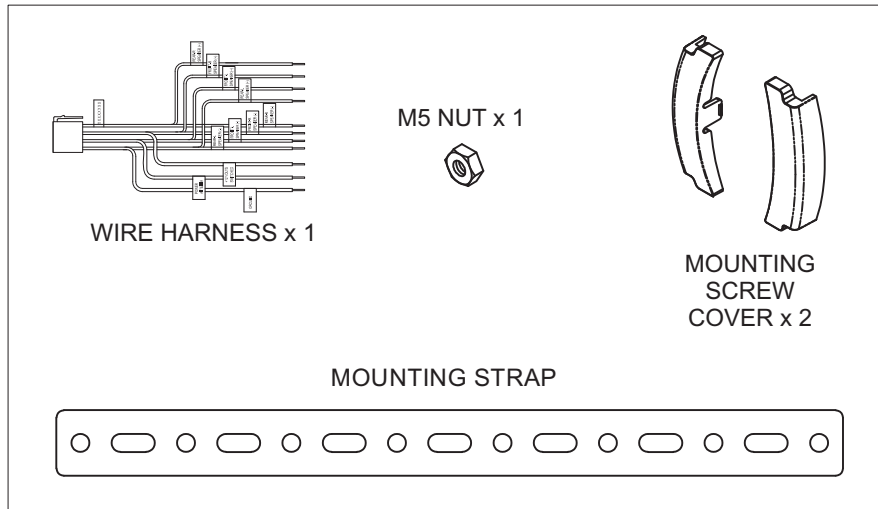
SAFETY INFORMATION

When Boating

Keep the volume level low enough to be aware of your surroundings.

Protect from Water

Do not submerge the product directly in water, as this can cause electrical shorts, fire or other damage.

Protect from High Temperatures

Exposure to direct sunlight for an extended period of time can produce very high temperatures inside your vessel. Give the interior a chance to cool down before starting playback.

Do not mount radio within close proximity of engine compartment.

Use the Proper Power Supply

This product is designed to operate with a 12 volt DC negative ground battery system.

WARNING:

- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT SUBMERGE THIS EQUIPMENT DIRECTLY IN WATER.
- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK AND INTERFERENCE, USE ONLY THE RECOMMENDED ACCESSORIES.

INSTALLATION

Before You Begin

Before you begin, always disconnect the battery negative terminal.

Important Notes

- Before final installation, test the wiring connections to make sure the unit is connected properly and the system works.
- Use only the parts included with the unit to ensure proper installation. The use of unauthorized parts can cause malfunctions.
- Consult with your nearest dealer if installation requires the drilling of holes or other modifications to your vessel.
- Install the unit where it does not interfere with driving and cannot injure passengers if there is a sudden or emergency stop.
- Avoid installing the unit where it will be subject to high temperatures from direct sunlight, hot air, or where it would be subject to excessive dust, or dirt.

DIN Front Mount

1. Check the dashboard opening size by sliding the radio into it. If the opening is not large enough, carefully cut or file as necessary until the radio slides into the opening. Check that there will be sufficient space behind the dashboard for the radio chassis.
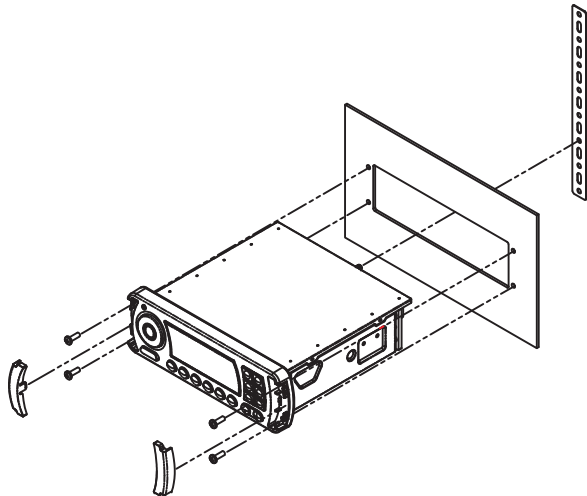
CAUTION: The rear of the radio must be supported with the strap to prevent damage to the radio and supporting structures.

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2. Place the radio in front of the dashboard opening so the wiring can be brought through the opening.
3. Follow the wiring diagram carefully and make certain all connections are secure to ensure proper operation.

4. After completing the wiring connections, turn the unit on to confirm operation (vessel accessory switch must be on). If the unit does not operate, recheck all wiring until the problem is corrected. Once proper operation is achieved, turn the accessory switch off and proceed with final mounting of the chassis.
5. Carefully slide the radio into the opening, making sure it is right-side-up.
6. Secure the radio to the dashboard using appropriate screws.
7. Replace the covers on either side of the radio.
8. Attach one end of the perforated support strap (supplied) to the screw stud on the rear of the chassis using the hex nut and spring washer provided. Fasten the other end of the perforated strap to a secure part of the dashboard either above or below the radio using the screw and plain washer provided. Bend the strap, as necessary, to position it.
9. Test radio operation by referring to the operating instructions for the unit.
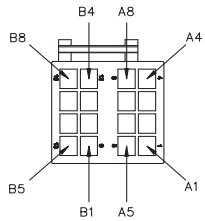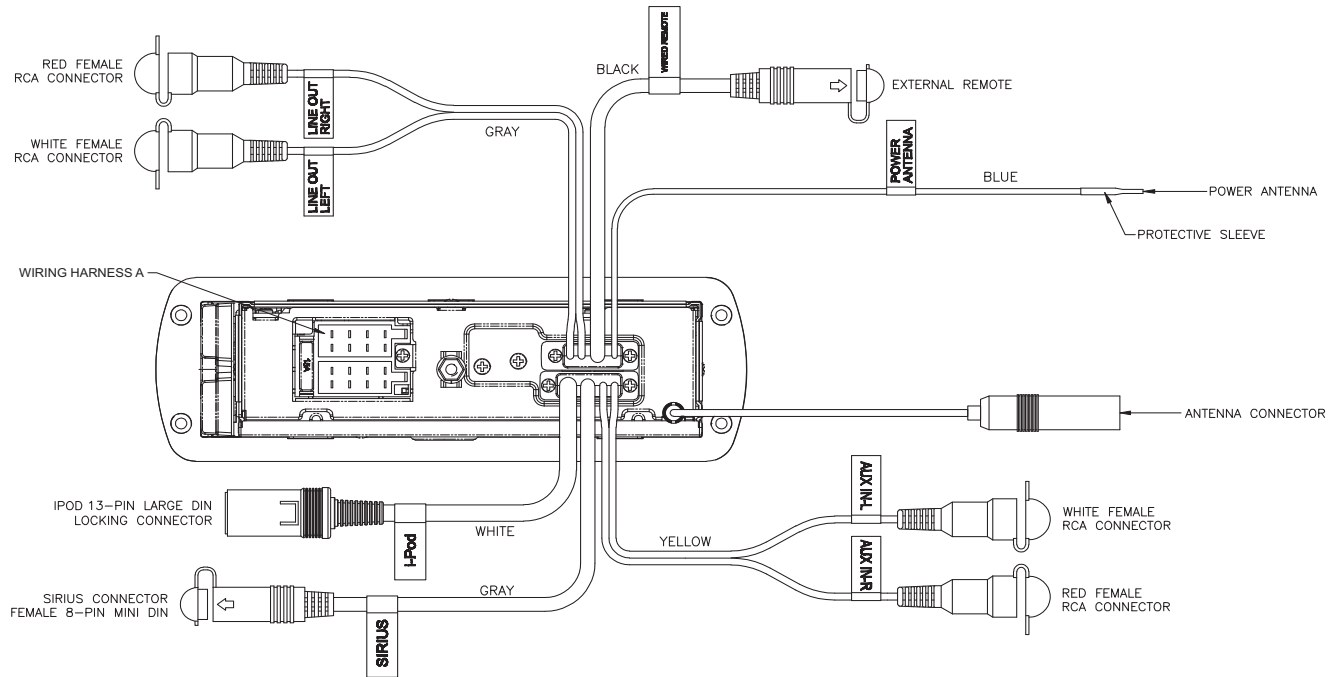
Removing the Unit

To remove the radio after installation, remove the covers, unscrew the installation screws and pull the radio out.

Reconnect Battery

When wiring is complete, reconnect the battery negative terminal.

WIRING

RED FEMALE
RCA CONNECTOR

WHITE FEMALE
RCA CONNECTOR

LINE OUT RIGHT

LINE OUT LEFT

GRAY

BLACK

WIRED REMOTE

EXTERNAL REMOTE

POWER ANTENNA

BLUE

POWER ANTENNA

PROTECTIVE SLEEVE

WIRING HARNESS A

ANTENNA CONNECTOR

IPOD 13-PIN LARGE DIN
LOCKING CONNECTOR

I-Pod

WHITE

YELLOW

AUX IN L

AUX IN R

WHITE FEMALE
RCA CONNECTOR

RED FEMALE
RCA CONNECTOR

SIRIUS CONNECTOR
FEMALE 8-PIN MINI DIN

SIRIUS

GRAY

WIRING HARNESS A

GROUND

+12 VOLTS SWITCHED

REAR-R SPEAKER(+)

REAR-R SPEAKER(-)

FRONT-R SPEAKER (+)

FRONT-R SPEAKER (-)

REAR-L SPEAKER (-)

FRONT-L SPEAKER (+)

FRONT-L SPEAKER (-)

REAR-L SPEAKER (+)

B

B

B4 A8

B8   A4

A1

B5

B1 A5

VIEW B-B
WIRE INSERTION VIEW

PIN NO.	WIRE COLOR	FUNCTION
A1	GREEN	LEFT REAR SPEAKER (+)
A2	WHITE	LEFT FRONT SPEAKER (+)
A3	GRAY	RIGHT FRONT SPEAKER (+)
A4	VIOLET	RIGHT REAR SPEAKER (+)
A5	GREEN/BLACK	LEFT REAR SPEAKER (−)
A6	WHITE/BLACK	LEFT FRONT SPEAKER (−)
A7	GRAY/BLACK	RIGHT FRONT SPEAKER (−)
A8	VIOLET/BLACK	RIGHT REAR SPEAKER (−)
B1	EMPTY	NO CONNECTION
B2	EMPTY	NO CONNECTION
B3	EMPTY	NO CONNECTION
B4	EMPTY	NO CONNECTION
B5	BLACK	GROUND
B6	EMPTY	NO CONNECTION
B7	RED	+12V ACC SWITCHED
B8	EMPTY	NO CONNECTION
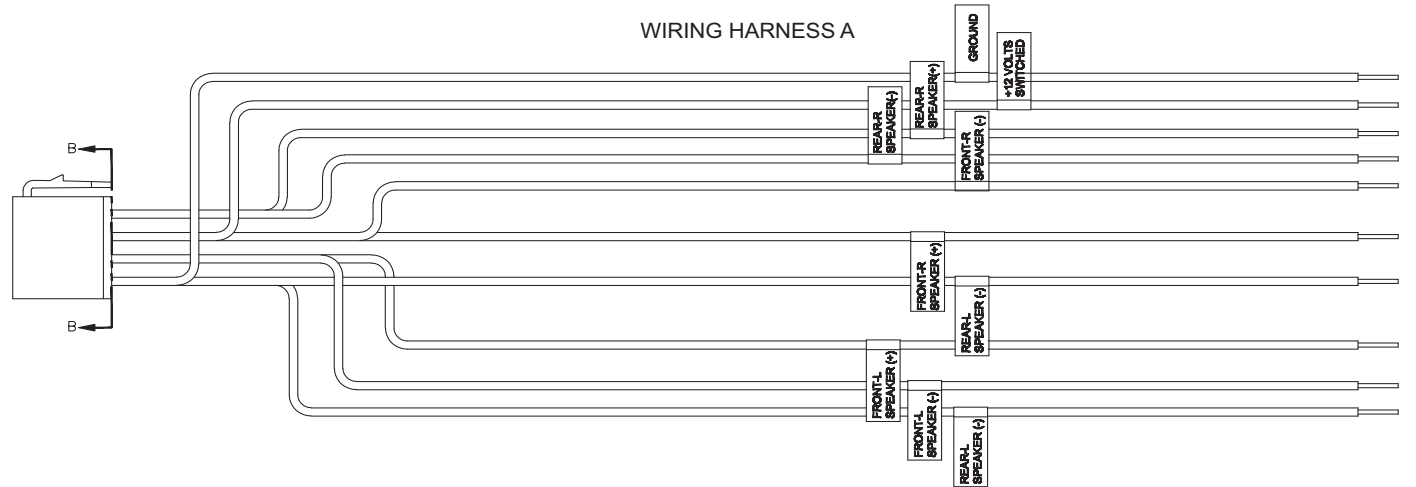
BASIC OPERATION
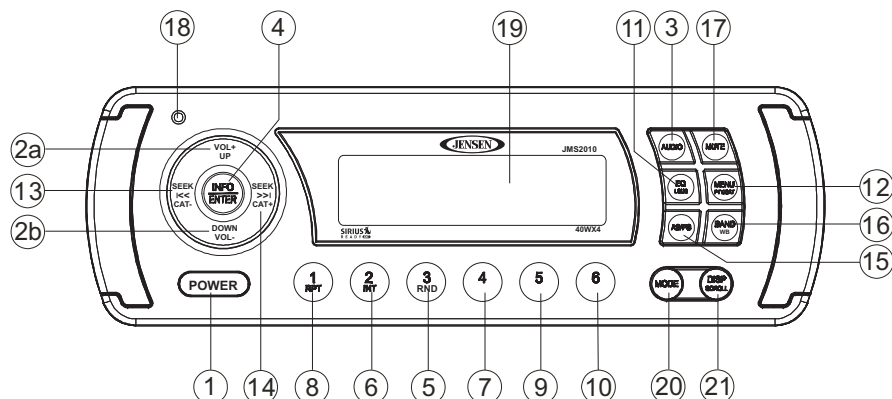
Power On/Off

Press the **POWER** button (1) to turn the unit on and off. The **POWER** button is illuminated whenever the +12 VOLTS SWITCHED lead (red wire) is powered, regardless of whether the unit is on or off.

Volume Control

To increase the volume, press the **VOL+/UP** button (2a). To decrease the volume, press the **DOWN/VOL-** button (2b).

Mute

Press the **MUTE** button (17) on the control panel to mute the audio output. Press **MUTE** again to restore the audio output to the previous level.

Mode

Press the **MODE** button (20) on the control panel to select a different mode of operation, as indicated on the display panel. Available modes include Tuner, SIRIUS, iPod and AUX In (optional Auxiliary Input).

NOTE: SIRIUS and iPod® mode will be skipped if the module/device is not installed.

Reset

The reset button (18) should be activated for the following reasons:

- initial installation of the unit when all wiring is completed
- function buttons do not operate
- error symbol on the display

Use a ball point pen or thin metal object to press the **RESET** button (18). This may be necessary should the unit display an error code.

You can recover factory default settings using the RESET ALL function located on the system menu. With "Confirm" flashing, press the **INFO/ENTER** button (4) to activate.

Audio Menu

Press the **AUDIO** button (3) on the control panel to access the audio menu. You can navigate through the audio menu items by pressing the **AUDIO** button repeatedly. Once the desired menu item appears on the display, adjust that option by pressing the **VOL** +/- buttons (2) within 5 seconds. The unit will automatically exit the audio menu after five seconds of inactivity. The following menu items can be adjusted.

Bass Level

Use the **VOL** buttons to adjust the Bass level range from "-7" to "+7".

Treble Level

Use the **VOL** buttons to adjust the Treble level range from "-7" to "+7".

Balance

Use the **VOL** buttons to adjust the Balance between the left and right speakers from "L12" (full left) to "R12" (full right).

Fader

Use the **VOL** buttons to adjust the Fader between the rear and front speakers from "R12" (full rear) to "F12" (full front).

System Menu

1. *Press and hold* the **MENU/PTY/CAT** button (12) for more than 3 seconds to enter the system menu. The "MENU" icon will appear on the display, along with the first menu item, "KEYBEEP."
2. Press the **VOL +/-** buttons (2) repeatedly to navigate the system menu and select the desired item.
3. Press the **INFO/ENTER** button (4) to adjust the selected menu item.
4. Press the **MENU/PTY/CAT** button to return to the previous operation immediately or wait for 5 seconds to return automatically.

The following items can be adjusted:

- KEYBEEP (OFF, CLK, BEP): Turn the audible beep ON/OFF (heard when functions/buttons are selected). *NOTE: Beep tone off will not affect BAT ALRM audible tone.*
- LCDLITE (1-10): Set LCD brightness.
- TUNING (USA/EUR): Set frequency spacing to either USA or Europe.
- PREONLY (ON/OFF): Tune to preset station when tuning/seeking.
- SIRIUS (Firmware, Set Lock, Clr Skip, Skipped)
- IPOD SW (ON/OFF): Choose "ON" to automatically detect and playback iPod® when connected. Choose "OFF" to use the **MODE** button (20) to select the iPod source.
- AUX IN (ON/OFF)
- BAT ALRM (ON/OFF): Enable battery alarm audible tone.
- BAT OFF (ON/OFF): Monitor voltage on ACC line.
- RESET ALL: Return the EEPROM to factory default set up values and reset the Sirius Tuner Settings. "Confirm" will scroll on the LCD to confirm. Press **INFO/ENTER** (4) to select.

LOW BATTERY Operation

If BAT ALRM is set to "ON", a alarm will sound (8 beeps every 30 seconds) when the voltage drops to 10.8V (+/- 0.03V). A visual warning (LOW BATT) will appear every 3 seconds on the LCD display.

Equalizer

Press the **EQ/LOUD** button (11) to turn on the equalization function and select between five pre-defined bass and treble curves: USER > FLAT > ROCK > CLAS (classic) > POP.

NOTE: "USER" setting is only available if the bass and treble settings are manually set by the user.

Loudness

Press and hold the **EQ/LOUD** button (11) to toggle loudness on/off. When listening to music at low volumes, this feature will boost the bass and treble ranges to compensate for the characteristics of human hearing.

Auxiliary Input

To access an auxiliary device:

1.   Connect the portable audio player to the AUX IN connectors on the back of the unit.
2.   Press the **MODE** button (20) to select "Auxiliary" mode.
3.   Press **MODE** again to cancel Auxiliary mode and go to the next mode.

Liquid Crystal Display (LCD)

The current frequency and activated functions are shown on the LCD panel (19).

NOTE: LCD panels may take longer to respond when subjected to cold temperatures for an extended period of time. In addition, the visibility of the numbers on the LCD may decrease slightly. The LCD display will return to normal when the temperature increases to a normal range.

Scroll

When the information is too long to be displayed on the LCD, press the **DISP/SCROLL** button (21) to view the entire title. The information will scroll twice and then return to abbreviated text.

TUNER OPERATION
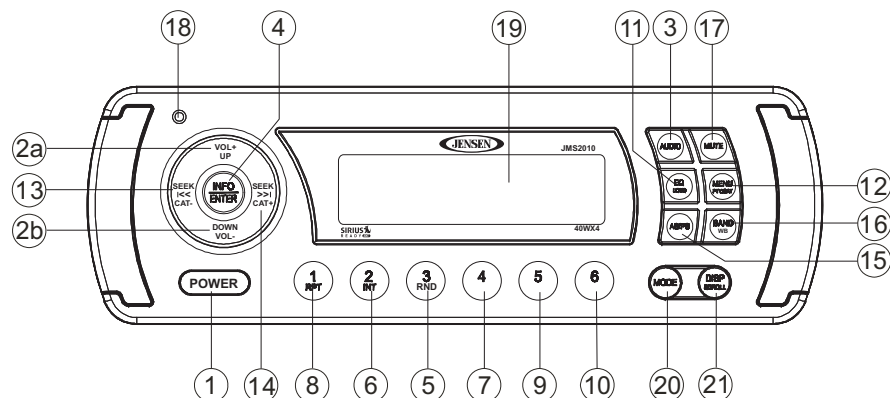
Select a Band

Press the **BAND/WB** button (16) to change between three FM bands and two AM (MW) bands. *Press and hold* the **BAND/WB** button to access the Weatherband (WB).

Manual Tuning

Press the **SEEK |<< / >>|** buttons (13, 14) to seek stations up/down step by step.

Auto Seek Tuning

Press and hold the **SEEK |<< / >>|** buttons (13, 14) to automatically seek the next or previous strong station.

NOTE: Seek tuning is not available for weather band channels. Use the up or down tuning buttons to manually select any of the seven available weather band channels.

Preset Stations

Six numbered preset buttons store and recall stations for each band.

Store a Station

Select a band (if needed), then select a station. *Press and hold* a preset button 1-6 for two seconds. The preset number will appear in the display.

Recall a Station

Select a band (if needed). Press a preset button 1-6 to select the corresponding stored station.

Automatically Store / Preset Scan (AS/PS)

Automatically Store

Press and hold the **AS/PS** button (15) for more than three seconds to automatically select strong stations and store them in the current band. The new stations replace any stations already stored in that band.

Preset Scan

Press **AS/PS** (15) to scan stations stored in the current band. The unit will pause for ten seconds at each preset station. Press **AS/PS** again to stop scanning when the desired station is reached.

RBDS Operation

This unit is equipped to display RBDS (Radio Broadcast Data Service) information when broadcast by the radio station.

NOTE: Radio stations broadcasting RBDS may not be available in your listening area.

Program Type (PTY)

In FM radio mode, press the **MENU/PTY/CAT** button (12) to list the following search options: ANY / News / Information / Sports / Talk / Rock / Classic Rock / Adult Hits / Soft Rock / Top 40 / Country / Oldies / Soft / Nostalgia / Jazz / Classical / Rhythm and Blues / Soft R&B / Language / Religious Music / Religious Talk / Personality / Public / College / Weather / Emergency Test / Emergency.

To search for stations in a PTY category:

1. Press the **MENU/PTY/CAT** button (12) to view the current PTY category.
2. Use the **SEEK |<</>>|** buttons (13, 14) to move through the list of available categories and select the program type you wish to search.
3. After selecting the desired PTY, press the **INFO/ENTER** button (4) to search the band for broadcasts of this type. "PTY SEARCH" appears on the LCD during the search process. If no station is found you will be returned to the previously tuned station.

NOTE: Performing a PTY search on "ANY" will Seek Tune and stop on any station broadcasting RBDS, regardless of the program type.

Weather Band Operation

What is the NOAA Weather Radio/Weatheradio Canada?

This is a nationwide system that broadcasts local weather emergency information 24 hours a day. The U.S. network has more than 530 stations covering the 50 states as well as the adjacent costal waters, Puerto Rico, the U.S. Virgin Islands and the U.S. Pacific Territories. Each local area has its own transmitting station and there are a total of seven broadcasting frequencies used. A similar system is available in Canada under the Weatheradio Canada service administered by Environment Canada.

Tuning to Weatherband

Press and hold the **BAND/WB** button (16) to access the Weatherband. The indication "WB" will appear on the display panel, along with the current number and channel indication: "WB-1", "WB-2", "WB-3", "WB-4", "WB-5", "WB-6" or "WB-7". The seven frequencies are shown in the following table:

Table 1: WB Frequencies

Frequency (MHz)	Preset
162.400	2
162.425	4
162.450	5
162.475	3
162.500	6
162.525	-
162.550	1

The above table also shows which preset button will access the frequency. Note that one frequency cannot be accessed using a preset button. The frequency can only be reached using the tuning controls.

Use the **SEEK |<< / >>|** buttons (13, 14) or the preset buttons to tune to each of the seven channels until you find the weatherband station broadcasting in your area.

How many stations can I expect to receive?

Since the broadcasts are local weather and information, the transmission power is usually very low (much less than standard AM or FM stations) so you will usually receive only one station, unless you are on the edge of two or more broadcast signals. The most you will receive will be two or three, and that is rare.

Is it possible I won't receive any stations?

Depending on where you are located, there is a possibility you will receive only a very weak signal or none at all. Also, similar to AM and FM signals, weatherband signals are subject to surrounding conditions, weather, obstructions of the signal by hills or mountains, etc.

SIRIUS RADIO OPERATION

NOTE: SIRIUS is available in the US for subscribers with addresses in the continental US and is available in Canada for subscribers with a Canadian address. Required subscription plus compatible SIRIUS tuner and antenna are required and sold separately. To subscribe to SIRIUS Satellite Radio on the internet, visit sirius.com, or call 888-539-7474. Have your SIRIUS ID ready (SIRIUS ID is located on the back of the SIRIUS tuner or by tuning to Channel 0). SIRIUS programming is subject to change. Visit sirius.com for the most complete and up-to-date channel lineup and product information. "SIRIUS" and the SIRIUS dog logo and related marks are trademarks of Sirius Satellite Radio Inc. All rights reserved.
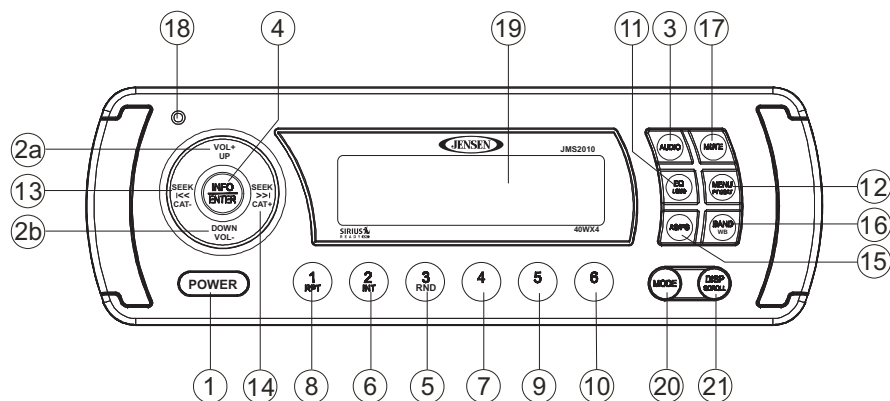
Switching to SIRIUS Mode

Press the **MODE** button (20) to change the mode to Sirius radio mode.

Accessing your SIRIUS ID

1. In Sirius mode, *press and hold* the **INFO/ENTER** button (4) to select DIRECT mode.
2. Press the **INFO/ENTER** button for each digit to enter "000" in the Channel field.
3. Entry of the last digit will display the Sirius ID number for your tuner.
4. The Sirius ID number will scroll twice and then freeze with the first 11 digits on the display. Press the **DISP/SCROLL** button (21) to display the remaining digit.

Selecting a Band

In Sirius mode, press the **BAND** button (16) to access the Sirius user-preset channel groups in the following order: SAT 1, SAT 2, SAT 3.

Category Tuning

1. Press the **MENU/PTY/CAT** button (12) to enter category mode.
2. Press the **SEEK/CAT - /+** buttons (13, 14) to change the category.
3. Press the **VOL+/-** buttons (2) to view channels within the selected category.
4. Press the **INFO/ENTER** button (4) to select the desired channel in that category.

Channel Up/Down Tuning

Press the **SEEK/CAT - /+** buttons (13, 14) to search for a channel. *Press and hold* the **SEEK/CAT -/+** buttons to fast search.

Storing Preset Channels

The preset buttons 1-6 can be used to store 6 channels, allowing convenient access to your favorite channels.

Programming Channels
1. Select the channel you want to store in memory.
2. *Press and hold* a preset button (5-10) until the corresponding preset button number appears.
3. Repeat steps 1 and 2 to program additional channels.

Quick Tuning

Press one of the six preset buttons (5-10) to select a preset channel directly.

Channel Direct Access Searching

1. *Press and hold* the **INFO/ENTER** button (4) to access Direct Tune mode. "CHANNEL : _ _ _" appears on the display for a few seconds.
2. Use the **VOL +/-** buttons (2) to select a number for each position.
3. Press the **INFO/ENTER** button after each entry to confirm the first two digits.
4. Press the **INFO/ENTER** button after the third digit to tune to the selected channel.

Alternate Display Information

Press **DISP/SCROLL** button (21) to change the display information in the following order: CATEGORY > SONG TITLE > ARTIST NAME > CHANNEL NAME > CATEGORY.

Satellite Signal Strength

The display will indicate reception strength as shown below.

Signal Strength	Strength Display
No Signal	x ▽
Weak	▽.
Good	▽.∎
Excellent	▽.∎∎

iPod® OPERATION

This unit is equipped with an iPod® ready function that will allow you to control your iPod (if compatible) using the control panel buttons. This unit is made for the following iPod models:

- iPod touch (2nd generation)
- iPod touch (1st generation)
- iPod classic
- iPod nano (6th generation)
- iPod nano (5th generation)
- iPod nano (4th generation)
- iPod nano (3rd generation)
- iPod nano (2nd generation)
- iPod nano (1st generation)
- iPod with video
- iPhone
- iPhone 3G
- iPhone 3GS

NOTE: Earlier model iPod's are not supported because they do not implement the required control protocol. Also, the iPod Shuffle is not supported because it does not utilize the 30-pin Apple iPod Connector. These unsupported iPod models may be connected to the radio using one of the Auxiliary Inputs.

Accessing iPod Mode

To enter iPod mode from any other source, press the **MODE** button (20) until "iPod" appears on the lower left corner of the display. If the user connects an iPod containing no songs, the radio will display a message stating "No Songs" when it enters iPod mode.

Turning the iPod On/Off

The iPod power turns on automatically when an iPod is connected to the 30-pin iPod cable, as long as the vehicle ignition is turned on. You can turn the iPod off by disconnecting it from the cable or by turning the ignition off. When the ignition is turned off, the iPod will pause and then enter sleep mode after 2 minutes. While the iPod is connected, the power cannot be turned on or off from the iPod itself.

NOTE: The iPod will continuously recharge when connected to the unit, as long as the vehicle ignition is turned on.
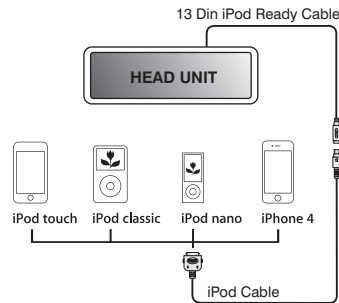
NOTE: iPod and iPod Cable sold separately.

Controlling Playback

Pausing Playback

During playback, press the **MUTE** button (17) to pause the iPod player. "Pause" will appear on the LCD. Press **MUTE** again to resume playback.

Repeat Play

During playback, press the **1/RPT** button (8) to repeat the current song. "RPT" will appear on the LCD. Press **1/RPT** again to stop repeat playback.

Intro Play

During playback, press the **2/INT** button (6) to play the first ten seconds of each song. "INT" will appear on the LCD. Press **2/INT** again to stop intro playback.
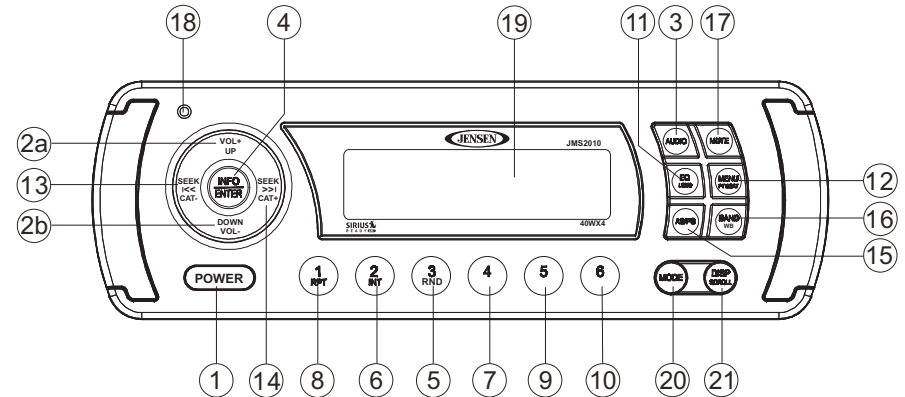
Random Play

During playback, press the **3/RND** button (5) to play all songs in the current category in random order. Random play will begin once the current song has finished playing. "RND" will appear on the LCD. Press **3/RND** again to stop random playback.

Selecting Tracks

During playback, press the **SEEK |<< / >>|** buttons (13, 14) to play the previous or next track in the current category. Press the **SEEK |<<** button (13) once to play the song from the start position or press **SEEK |<<** twice to play the previous track. Pressing the **SEEK |<<** button (13) during the first 2 seconds of a track will play the previous track. After 2 seconds, this action returns to the beginning of the current track.

Press and hold the **SEEK |<< / >>|** buttons (13, 14) to fast reverse/forward the song.

Playlist Search

Press the **MENU/PTY/CAT** button (12) to access Playlist selection mode. Press the **VOL +/-** buttons (2) to choose file search by Playlist, Artist, Album, Genre, Song, Audiobook or Podcast. Press the **INFO/ENTER** button (4) to select the search mode. Use the **VOL +/-** buttons to search the available files on the iPod. Press the **INFO/ENTER** button to play the selected song or file.

Alternate Display Mode

Press the **DISP/SCROLL** button (21) to change the display information in the following order: ALBUM > SONG TITLE > ARTIST > FILE X of Y > ALBUM.

CARE AND MAINTENANCE

- Keep the product dry. If it does get wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.
- Keep the product away from dust and dirt, which can cause premature wear of parts.
- Handle the product gently and carefully. Dropping it can damage circuit boards and cases, and can cause the product to work improperly.
- Wipe the product with a dampened cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the product.
- Use and store the product only in normal temperature environments. High temperature can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts.

Ignition

The most common source of noise in reception is the ignition system. This is a result of the radio being placed close to the ignition system (engine). This type of noise can be easily detected because it will vary in intensity of pitch with the speed of the engine.

Usually, the ignition noise can be suppressed considerably by using a radio suppression type high voltage ignition wire and suppressor resistor in the ignition system. (Most vessels employ this wire and resistor, but it may be necessary to check them for correct operation.) Another method of suppression is the use of additional noise suppressors. These can be obtained from most electronic supply shops.

Interference

Radio reception in a moving environment is very different from reception in a stationary environment (home). It is very important to understand the difference.

AM reception will deteriorate when passing under a bridge or when passing under high voltage lines. Although AM is subject to environmental noise, it has the ability to be received at great distances. This is because broadcasting signals follow the curvature of the earth and are reflected back by the upper atmosphere.

TROUBLESHOOTING

Symptom	Cause	Solution
No power	The vessel's power is not on	If the power supply is properly connected to the vessel's accessory terminal, switch the ignition key to "ACC".
	The fuse is blown	Replace the fuse.
No sound	Volume too low or Mute is on	Adjust volume to audible level.
	Fader is set incorrectly	Press **AUDIO** button to access menu and adjust FADER setting.
	Wiring is not properly connected	Check wiring connections.
Unit unresponsive	The built-in microcomputer is not operating properly	Set RESUME in menu.
Cannot tune to radio station, auto-seek does not work	The antenna cable is not connected.	Insert the antenna cable firmly.
	The signals are too weak.	Select a station manually.

SPECIFICATIONS

FM Radio

Frequency Range (USA) . . . . 87.5 to 107.9 MHz
Frequency Range (Europe) . . . . 87.5 to 108 MHz
Sensitivity (S/N=30dB) 2µV
Image Rejection . . . . >45 dB
Stereo Separation . . . . >25 dB

AM/MW

Frequency Range (USA) . . . . 530-1710 kHz
Frequency Range (Europe) . . . . 522-1620 kHz
Sensitivity (S/N=20dB) . . . . 20 dB

General

Operating Voltage . . . . .DC 12 Volts
Grounding System . . . . Negative Ground
Speaker Impedance . . . . .4-8 ohms per channel
Tone Controls:
   Bass (at 100 Hz) . . . . : ±10 dB
   Treble (at 10 kHz) . . . . : ±10 dB
Power Output . . . . 40W x 4
Current Drain . . . . .15 Ampere (max.)
Dimensions . . . . 178 x 20.5 x 68.5mm