

# clarion®

**Owners's manual & Installation manual**

## CMS4

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**MARINE DIGITAL MEDIA BLACK BOX RECEIVER  
WITH WATERTIGHT DISPLAY CONTROLLER**

## **CLARION PRODUCT REGISTRATION INFORMATION**

For USA and Canada only

[www.clarion.com](http://www.clarion.com)

Dear Customer:

Congratulations on your purchase of a Clarion mobile electronic product. We are confident that you'll enjoy your Clarion experience.

There are many benefits to registering your Clarion product. We invite you to visit our website at [www.clarion.com](http://www.clarion.com) to register your Clarion product.

We have made product registration simple with our easy to use website. The registration form is short and easy to complete. Once you're registered, we can keep you informed of important product information.

Register at [www.clarion.com](http://www.clarion.com)- it's easy to keep your Clarion product up to date.

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# 1. FEATURES

- SiriusXM-Ready™
- AM/FM/WB Tuner
- Watertight Remote
- Built-in Bluetooth® with aptX
- 70Wx4 Built-In Amplifier
- Made for iPod/iPhone/iPad
- 4 Zones / 4 Sources
- Pandora
- Camera connection

# 2. PRECAUTIONS

## ⚠ WARNING

**For your safety, while boating, keep the volume to a level at which external sounds can be heard.**

1. This unit has precision parts inside. Even in the event that trouble arises, never open the case, disassemble the unit, or lubricate the parts.
2. FCC STATEMENT
- 2.1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
  - (1) This device may not cause harmful interference.
  - (2) This device must accept any interference received, including interference that may cause undesired operation.
- 2.2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### Note:

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

3. IC warning
- 3.1. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
  - (1) This device may not cause interference, and
  - (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- 3.2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

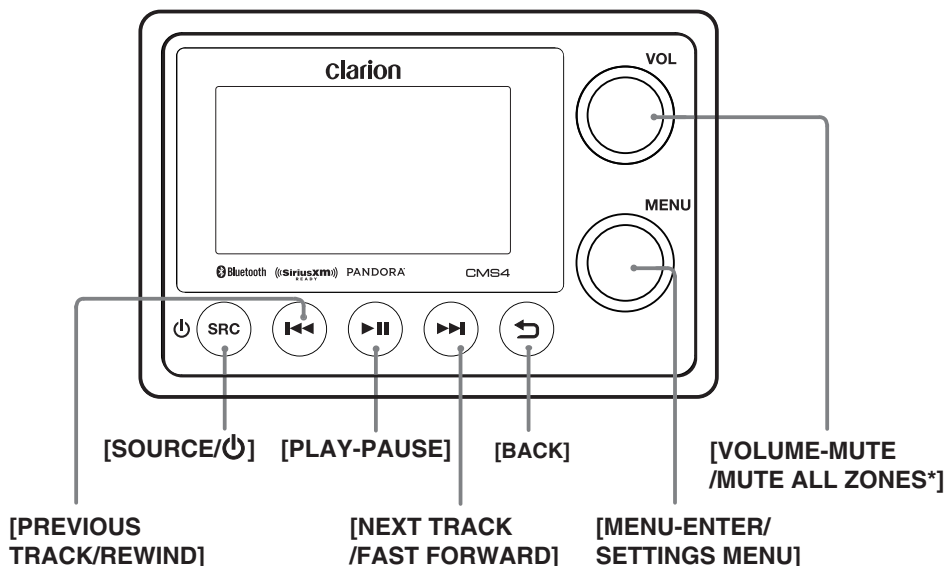
	MODEL	<b>CMS4</b>	Clarion
	12V (-) GROUND	USA: AM530-1710kHz, FM 87.9-107.9MHz EUROPE: AM531-1620kHz, FM87.5-108.0MHz AUSTRALIA: AM531-1620kHz, FM87.5-108.0MHz ASIA: AM531-1620kHz, FM87.5-108.0MHz	
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.			
This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.			
CLARION CORPORATION OF AMERICA 6200 GATEWAY DRIVE, CYPRESS, CA 90630, USA			
MANUFACTURED:	<input type="text"/>	FCC ID: 2AB7S-CMS4 IC: 11888A-CMS4 CAN/CS-3(*)/NIM B-3(*)	 MADE IN CHINA
SERIAL NO.	<input type="text"/>		

# 3. CAUTIONS ON HANDLING

- Exposure to extreme heat and direct sunlight may hinder the performance of your Clarion product. In the event this happens, allow the unit to cool down before use.

## 4. CONTROLS

### ◆ Display Controller



\*Multi-Zone Mode only

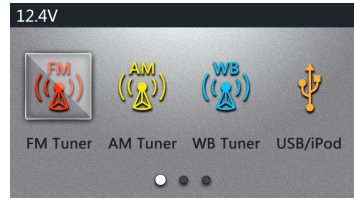
### About the registered marks, etc.

- "Made for iPod" and "Made for iPhone" and "Made for iPad" means that an electronic accessory has been designed to connect specifically to iPod, iPhone, iPad or 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 or iPad may affect wireless performance. iPod and iPhone and iPad are trademarks of Apple Inc., registered in the U.S. and other countries.
- The Bluetooth word mark and Logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Clarion Corporation of America is under license. Other trademarks and trade names are those of their respective owners.
- Sirius, XM and all related marks and logos are trademarks of SiriusXM Radio Inc. All rights reserved.
- Pandora, the Pandora logo and other Pandora marks are trademarks or registered trademarks of Pandora Media Inc, or its subsidiaries worldwide.
- Qualcomm aptX is a product of Qualcomm Technologies International, Ltd. Qualcomm is a trademark of Qualcomm Incorporated, registered in the United States and other countries, used with permission. aptX is a trademark of Qualcomm Technologies International, Ltd., registered in the United States and other countries, used with permission

# Choosing Your Source Unit Configuration

## ◆ Standard Mode

Standard mode is ideal for basic installations that utilize a single audio source with speakers configuration. Utilizing this configuration you can have Front and Rear speakers with the ability to control fade, a secondary set of speakers unaffected by fading and a fixed connection at full output.



## ◆ Multi-Zone Mode

Multi-Zone mode is ideal for installations that require multiple sources to play simultaneously from different speakers. Using this configuration you can control up to 4 independent zones with 4 sources such as FM, BT, USB, SiriusXM. All 4 zones are variable with independent volumes, EQ, gain and other configurable zone settings.



### Note:

When using Multi-Zone with multi-source, radio band sources are limited to a single band (FM/AM/WB) across all zones utilizing radio. Example: If Zone 1 and Zone 2 are set to AM and Zone 3 is set to FM, both Zone 1 and Zone 2 will now become FM and vice versa.

# Name of Buttons and Their Functions

**Note:** Be sure to read this chapter while referring to the front diagram in chapter "4. CONTROLS"

## ⚠ CAUTION

Lower the volume level before powering the source unit off. The source unit stores the last volume setting.

## ⚠ WARNING

**SUBMERGING THE UNIT IN WATER WILL CAUSE DAMAGE OR UNIT MALFUNCTION!**

### [ ⏻ / SRC ] Button

- Press the [ ⏻ / SRC ] button to turn the power on and press and hold it (2 sec.) to bring up the Power off / Display off selection. Select Power Off to completely power down the CMS4 unit. Select Display Off to keep the CMS4 operating with the display backlight off.
- Press and release the [ ⏻ / SRC ] button to switch between available sources: FM, AM, Weather Band, USB/iPod, Aux, Bluetooth, Pandora, SiriusXM and Camera.

**Note:** If the above equipment is not connected, the corresponding mode may not function. When using CMS4 in Multi-Zone mode, only zones currently in control will have their sources changed.

### [ ⏪ / ⏩ ] Buttons

Pressing these buttons will perform the following operations based on their current mode:

- Menu Screen** - Page Up/Page Down (Browser)
- AM/FM/WB** - Auto Seek Tuner Forwards / Backwards
- SiriusXM** - Skip Forward/Skip Backwards, Fast Forward/Rewind 5/10/30 seconds (Press and hold)
- USB/iPod** - Next Track/Previous Track, Fast Forward/Rewind (Press and hold)
- AUX** - No function in this mode
- Bluetooth** - Next Track/Previous Track, Fast Forward/Rewind (Press and hold)
- Pandora** - Skip Track, Thumbs Up/Thumbs Down (Press and hold)

### [ VOL ] Knob

- Rotate the [ VOL ] knob clock-wise to increase the volume.
- Rotate the [ VOL ] knob counter-clock-wise to decrease the volume.
- Standard mode** - Press the [ VOL ] knob to mute the audio. Press again to restore audio.
- Multi-zone mode** - Press the [ VOL ] knob to mute all zones currently being controlled. Press and hold to mute all zones, regardless if being controlled. Press again to restore audio.

# Name of Buttons and Their Functions

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## [ MENU ] Knob

- **Volume Screen** - When in Standard mode and while the volume level is still shown, rotate the [MENU] knob clock-wise or counter clock-wise to adjust front/rear audio fading. When in Multi-zone mode and while the volume levels are still shown, rotate the [MENU] knob to select individual zone audio controls.
- **MENU Screen** - Rotate clock-wise to select menu item below current selection. Rotate counter clock-wise to select menu item above current selection. Press the [MENU] knob to select current menu item.
- **AM/FM/Weather Band** - Rotate clock-wise/ counter clock-wise to manually seek stations Up/Down. Press to access content menu.
- **USB/iPod** - Press to access content menu.
- **AUX In** - No function
- **SiriusXM** - Rotate clock-wise to select Next channel. Rotate counter clock-wise to select previous channel.
- **SiriusXM Replay** - Press the button and select Jump to Live to exit SiriusXM Replay mode
- **BT Audio** - Press to access content menu.
- **Home Screen** - When in the **Standard** mode home screen, rotate the [MENU] knob to highlight available sources. Press the [MENU] knob to select the source. When in the **Multi-zone** mode home screen, rotate the [MENU] knob to highlight the Source and Control boxes. Press the [MENU] knob to execute the function. When selecting a source, press and hold the [MENU] knob to automatically set all zones to that source.

**Note:** In any source, Press the [MENU] knob to access current source settings. Press and hold the [MENU] knob to access CMS4 device settings.

## [ ↩ ] Back Button

Pressing this button will perform the following operations based on the current screen:

- **Playback Screen** - Launch source selection mode
- **Menu Screen** - Return to previous screen/menu

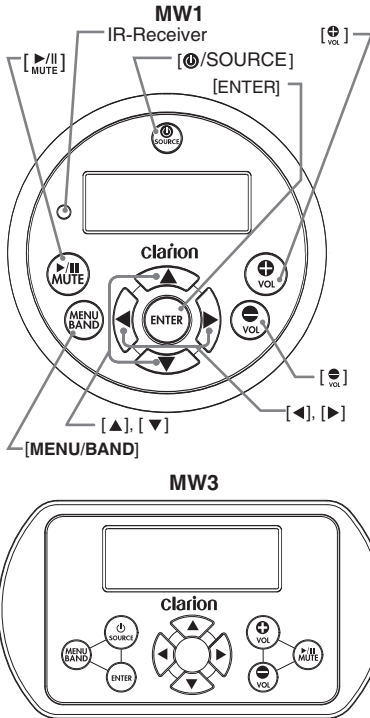
## [ ▶ || ] Play/Pause Button

- Press this button to Play / Pause current track.
- **SiriusXM Instant Replay** - Press to enter Instant Replay mode.

# Optional Wired Remote Control Unit Operations

The following operations are enabled by remote control with the separately sold Wired Remote Control Unit MW1 and MW3 (as below) or MW4.

**Note:** If the remote control is connected with this unit while the power is on, please restart this unit again to confirm the normal display.



**Note:** MW3 button functions are identical to MW1.

## CAUTION

Lower the volume level before powering the source unit off. The source unit stores the last volume setting.

## WARNING

**EXPOSING THE UNIT TO WATER WITH THE FRONT PANEL OPEN WILL CAUSE DAMAGE OR UNIT MALFUNCTION!**

### [POWER/SOURCE] Button

- Press the [POWER/SOURCE] button to turn the power on and press and hold it (2 sec.) to turn the power off.
- Each time the [POWER/SOURCE] button is pressed, the mode switches.

**Note:** If the above equipment is not connected, corresponding mode cannot be selected.

### [ENTER] Button

- TUNER/Weather Band mode** – Confirm (in Preset and Manual store)
- USB mode** – Confirm (in Menu mode)
- Bluetooth** – Confirm (in Menu mode)
- iPod/iPhone mode** – Confirm (in Menu mode)
- Pandora mode** – Confirm (in Menu mode)
- SiriusXM mode** – Confirm ch (in Search mode)

### [VOL+] / [VOL-] Buttons

- Press the [VOL+] button to increase the volume.
- Press the [VOL-] button to decrease the volume.

**Note:** When using **Multi-Zone** mode, the remote can only control volume of the zone it is plugged into.

### [LEFT] / [RIGHT] Buttons

- Tuner/Weather Band mode** – Station Up/Down & Seek Up/Down (Press and hold)
- USB mode** – Previous/Next track & Fast Forward/Reverse (Press and hold)
- Bluetooth** – Previous/Next track & Fast Forward/Reverse (Press and hold)
- iPod/iPhone mode** – Previous/Next track & Fast Forward/Reverse (Press and hold)
- Pandora mode** – Skip track
- SiriusXM mode** – Channel Tune Up/Down, Fast Channel Tune Up/Down (Press and hold), Move cursor (Direct mode) & Enter the Parent Code Window
- SiriusXM Replay mode** – Press and Release the Left or Right Arrow to skip back or forward one song/track.  
Press and Hold will Fast Forward/Fast Rewind through the Replay buffered content.

### [UP] / [DOWN] Buttons

- Tuner/Weather Band mode** – Preset Station Up/Down & Enter into Manual Store (Press and hold)
- USB mode** – Folder Up/Down & Select (in Folder search mode)
- Bluetooth** – Folder Up/Down & Select (in Folder search mode)
- iPod/iPhone mode** – Select (in Menu mode)
- Pandora mode** – Thumbs up / down
- SiriusXM mode** – Preset channel Up/Down, Category Up/Down (in Category mode), Numeric Up/Down (Direct mode), input Parent code interface

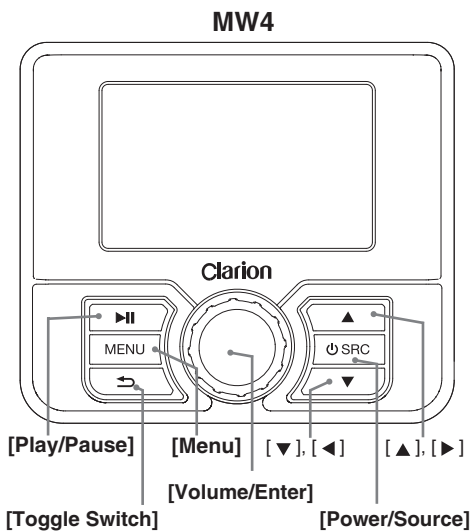
### [MENU/BAND] Buttons

- Press this button to access menu items for necessary functions in every mode.
- In different modes, the menu items are different.

# Optional Wired Remote Control Unit Operations

## [▶/||] MUTE Buttons

- **Tuner/Weather Band** mode - Mute On / Off
- **USB** mode - Play / Pause
- **iPod/iPhone** mode - Play / Pause
- **Pandora** mode - Play / Pause
- **SiriusXM** mode - Replay Mode
- **BT Audio** mode - Play / Pause



## [⏻/SOURCE] Button

- Press the [⏻/SOURCE] button to turn the power on and press and hold it (2 sec.) to turn the power off.
- Each time the [⏻/SOURCE] button is pressed, the mode switches.

**Note:** If the above equipment is not connected, corresponding mode cannot be selected.

## [⏶] / [⏷] Buttons

- Press the [⏶] button to increase the volume.
- Press the [⏷] button to decrease the volume.
- **TUNER/Weather Band** mode - Confirm (in Preset and Manual store)
- **USB** mode - Confirm (in Menu mode)
- **iPod/iPhone** mode - Confirm (in Menu mode)
- **Pandora** mode - Confirm (in Menu mode)
- **SiriusXM** mode - Confirm ch (in Search mode)

**Note:** When using **Multi-Zone** mode, the remote can only control volume of the zone it is plugged into.

## [◀] / [▶] Buttons

**Note:** To toggle between and [◀] / [▶] and [▲] / [▼] arrow selection, press the [↔] button and check the on screen icon.

- **Tuner/Weather Band** mode - Station Up/Down & Seek Up/Down (Press and hold)
- **USB** mode - Previous/Next track & Fast Forward/Reverse (Press and hold)
- **Bluetooth** - Previous/Next track & Fast Forward/Reverse (Press and hold)
- **iPod/iPhone** mode - Previous/Next track & Fast Forward/Reverse (Press and hold)
- **Pandora** mode - Skip track
- **SiriusXM** mode - Channel Tune Up/Down, Fast Channel Tune Up/Down (Press and hold), Move cursor (Direct mode) & Enter the Parent Code Window
- **SiriusXM Replay** mode - Press and Release the Left or Right Arrow to skip back or forward one song/track. Press and Hold will Fast Forward/Fast Rewind through the Replay buffered content.

## [▲] / [▼] Buttons

**Note:** To toggle between and [◀] / [▶] and [▲] / [▼] arrow selection, press the [↔] button and check the on screen icon.

- **Tuner/Weather Band** mode - Preset Station Up /Down
- **USB** mode - Select (in Folder search mode)
- **Bluetooth** - Select (in Folder search mode)
- **iPod/iPhone** mode - Select (in Menu mode)
- **Pandora** mode - Thumbs up / down
- **SiriusXM** mode - Preset channel Up/Down, Category Up/Down (in Category mode), Numeric Up/Down (Direct mode), input Parent code interface

## [MENU/BAND] Buttons

- Press this button to access menu items for necessary functions in every mode.
- In different modes, the menu items are different. Please see the operation introduction of every mode for more details.

## [▶/||] MUTE Buttons

- **Tuner/Weather Band** mode - Mute On / Off
- **USB** mode - Play / Pause
- **BT Audio** mode - Play / Pause
- **iPod/iPhone** mode - Play / Pause
- **Pandora** mode - Play / Pause
- **SiriusXM** mode - Play/Pause, Enter Replay Mode



# 5. OPERATIONS

## Basic Operation

**Note:** Be sure to read this chapter referring to the chapter "4. CONTROLS"

### ⚠ CAUTION

When the unit is turned on, starting and stopping the engine with its volume raised to the maximum level it may cause hearing damage. Be careful about adjusting the volume.

### ◆ Turning on and off the power


**Note:**

- Start the engine before using this unit.
- Be careful about using this unit for a long time without running the engine. If you drain the vessel battery too far, you may not be able to start the engine and this can reduce the service life of the battery.


1. Start the engine.



Engine ON  
position

2. If the CMS4 does not automatically turn on, Press the [  / SRC ] button to turn the power on. Press and hold it (2 sec.) to bring up the Power Off/Display Off selection. Select Power Off to completely power down the CMS4 unit. Select Display Off to keep the CMS4 operating with the display backlight off.

### ◆ Selecting a mode

1. Press the [  / SRC ] button to change to the next available source.
  - \* If a Bluetooth device is not connected to the CMS4, it is not displayed.

### ◆ Adjusting the volume

1. Rotate [ VOL ] knob clock-wise to increase the volume.
2. Rotate [ VOL ] knob counter clock-wise to decrease the volume.

### ⚠ CAUTION

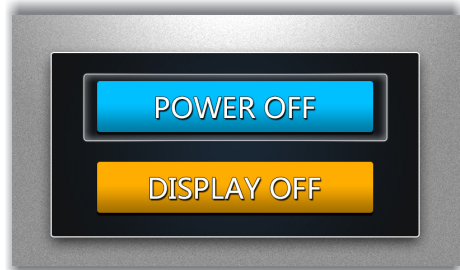
While boating, please be aware of the volume levels in residential, family areas and local volume level ordinances.

### ◆ Mute

Press the [ VOL ] button to turn the Mute On and Off.

### ◆ Power Off / Display Off


This feature will allow the user to Power Off the unit or to turn the Display OFF in the event the display is too bright for current lighting conditions.

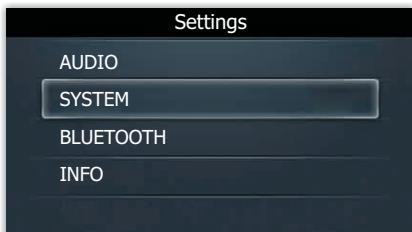


- **Power Off** – Select to turn off the unit
- **Display Off** – Select to turn off the backlight of the display, but the button and knob illumination will remain until a button or knob action occurs.

# Settings

You can customize the various settings of this unit from the Settings screen.

When in Standard mode, press the [  ] button to access the Home screen, rotate the [MENU] knob to select the Settings option, then press the [MENU] knob to access into the Settings Mode. You can rotate the [MENU] knob to select the options, then press the [MENU] knob to confirm.



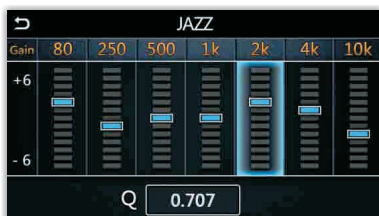
**Note:** Press and hold the [MENU] knob to quickly access the Settings menu. This is the only way to access the Settings menu when using the *Multi-Zone* mode.

## ◆ Audio Settings

Press and hold the [MENU] knob to enter Settings menu. Rotate the [MENU] knob to select items to be adjusted:

### ● Preset EQ

1. Rotate the [MENU] knob to change the EQ: FLAT->JAZZ->POP->CLASSIC->ROCK->NEWS->URBAN->RAVE->MOVIE->TECHNO->USER
2. When USER EQ is selected, press the [MENU] knob to cycle through each of the 7 EQ bands and rotate the [MENU] knob to adjust each band.



### ● Balance

Rotate the [MENU] knob to adjust the Balance between the right and left speakers from R12 (full right) to L12 (full left).

### ● Fader (Standard Mode Only)

Rotate the [MENU] knob to adjust the Fader between the front and rear speakers from R12 (full rear) to F12 (full front).

### ● Crossover

1. Press the [MENU] knob to turn On or Off the Crossover function.
2. Press the [MENU] knob to access the Front HPF menu, and rotate the [MENU] knob to select the below items to adjust:
  - SLOPE** - Press the [MENU] knob to change the value: 12dB / 24dB
  - FREQUENCY** - Press the [MENU] knob to change the value: 60Hz/80Hz /120Hz/ALL
  - LEVEL** - Press the [MENU] knob to highlight and rotate it to adjust the level between 0 ~ 20.

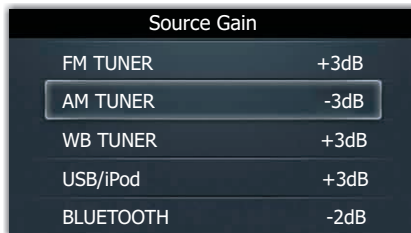
### ● Loudness

Press the [MENU] knob to set Loudness to ON or OFF.

### ● Source Gain

Press the [MENU] knob to access the Source Gain menu, and rotate the [MENU] knob to select the items, then press the [MENU] knob to change the value:

FM TUNER->AM TUNER->WB TUNER->USB/iPod  
->BLUETOOTH->PANDORA->SIRIUSXM->AUX



## ◆ System Settings

Press and hold the [MENU] knob to enter Settings menu. Rotate the [MENU] knob to select items to be adjusted:

### ● Dimmer

Press the [MENU] knob to adjust the LCD display backlight level between High or Low.

### ● Theme

This option allows the user to select theme for the LCD display. Auto is the default setting and is triggered through the dimmer wire on the CMS4 black box unit. Press the [MENU] knob to toggle between Day, Night or Auto.

### ● Screen Saver

Press the [MENU] knob to toggle the screen saver mode: Clock/Slide Show/Off. Screen saver will be enabled after [30/60/90/120] seconds of no device operation

# Settings

## ● LED Color

This unit is equipped with user configurable color LED. Once in the LED COLOR menu, rotate the [MENU] knob to select the LED Color. Press the [MENU] knob to complete the LED COLOR selection.

## ● Beep

Press the [MENU] knob to select between ON and OFF.

## ● Time

Press the [MENU] knob to enter clock setting mode. Use the [MENU] knob to set the clock, then press the [↵] button to confirm.

## ● Time Format

Press the [MENU] knob to choose a time format: 12H or 24H.

## ● Camera Audio

Press the [MENU] knob to enter Camera Audio menu, rotate the [MENU] knob to select:

**YES** - The Aux audio is played while the Camera image is shown the display controller's screen. This will cause the Aux source to become unavailable as an audio playback source.

**NO** - The auxiliary audio input is not utilized while displaying the camera image on the display controller's screen.

## ● Tuner Region

Press the [MENU] knob to enter the Tuner Region menu, rotate the [MENU] knob to select the region: "EUROPE", "NORTH AMERICA", "ASIA" or "AUSTRALIA"

## ● Audio Mode

Press the [MENU] knob to enter the Audio Mode screen, rotate the [MENU] knob to select Standard or Multi-Zone mode.

## ● Factory Reset

Select between SiriusXM or System restore then press the [MENU] knob to execute.

## ◆ Bluetooth Settings

Press the [MENU] knob to enter the Bluetooth Settings menu. Use the [MENU] knob to select the items:

### ● Auto Connect

Press the [MENU] knob to change the Bluetooth auto connect On or Off:

**ON** - If the paired device is within range, the system reconnects automatically.

**OFF** - Bluetooth devices will need to be reconnected manually.

### ● Device Name

Press the [MENU] knob to view the name of the CMS4 device as it appears to other Bluetooth devices.

## ◆ Info Settings

Press the [MENU] knob to view the system version information.

# Radio (AM/FM/Weather Band) Operation



## ◆ World Tuner

This unit is initially set to USA frequency intervals of 10 kHz for AM and 200 kHz for FM. When using it outside the USA, the frequency reception range can be switched to the intervals below.

		U.S.A standard	Europe standard	Aisa standard	Australia standard
AM	Frequency spacing	10kHz	9kHz	9kHz	9kHz
	Frequency range	530-1710 kHz	531-1602 kHz	531-1620 kHz	531-1620 kHz
FM	Frequency spacing	200kHz	50kHz	50kHz	100kHz
	Frequency range	87.9-107.9 MHz	87.5-108 MHz	87.5-108 MHz	87.5-108 MHz

## ◆ Auto Seek

Press the [ ◀◀ / ▶▶ ] buttons to automatically search for the next radio station.

## ◆ Manual Seek

Rotate the [MENU] knob to manually change intervals step by step.

## ◆ Tuner Settings

Press the [MENU] knob to access the Tuner settings menu. Use the [MENU] knob to select the below functions:

### ● Presets

Rotate the [MENU] knob to select which preset station to listen to, then press [MENU] knob to confirm.

### ● Save As Preset

Use the [MENU] knob to select the preset position to save the current frequency.

### ● Auto Store

Only stations with sufficient signal strength will be detected and stored as a preset. Press the [MENU] knob to automatically select ten strong stations and store them into ten presets. The new stations replace presets.

### ● Local On/Off

To receive more radio stations or only stations with strong signal, you can adjust the tuner sensitivity.

Press the [MENU] knob to turn On or Off the Local Seek Mode.

**ON** - Only stations with a strong signal can be played back.

**OFF** - Stations with strong and weak signals can be played back.

### ● RDS On/Off

Press the [MENU] knob to turn On or Off the RDS Mode.

### ● PTY

Use the [MENU] knob to select the desired PTY mode.

# SiriusXM® Satellite Radio Operations

Only SiriusXM® brings you more of what you love to listen to, all in one place. Get over 140 channels, including commercial-free music plus the best sports, news, talk, comedy and entertainment. Welcome to the world of satellite radio. A SiriusXM Vehicle Tuner and Subscription are required. For more information, visit [www.siriusxm.com](http://www.siriusxm.com)

## ◆ Displaying the Radio ID



Before you listen to satellite radio, you must subscribe to the service using the SiriusXM Radio ID number.

1. Press the [  / SRC ] button to enter SiriusXM mode.
2. Press the [  ] or [  ] buttons select channel "0". The unit displays the Radio ID.

### Note:



1. The Radio ID is located on the bottom of the SiriusXM Connect Vehicle Tuner.
2. Please note that the SiriusXM Radio ID does not include the letters I, O, S or F.
3. In the USA, to activate the SiriusXM Connect Vehicle Tuner go online to [www.siriusxm.com/activatenow](http://www.siriusxm.com/activatenow) or call 1-866-635-2349.
4. In Canada, to activate the SiriusXM Connect Vehicle Tuner go online to [www.siriusxm.ca/activatexm](http://www.siriusxm.ca/activatexm) or call 1-877-438-9677.

## ◆ Channel Tune






1. Press the [  ] button or rotate the [MENU] knob clockwise to advance to the next channel.
2. Press the [  ] button or rotate the [MENU] knob counter-clockwise to go to the previous channel.

## ◆ SiriusXM Replay™ function


The Replay feature allows you to pause, rewind, and replay live SiriusXM Satellite Radio.

1. While listening to a SiriusXM channel, press the [  ] button to enter Replay mode. The display will show "PAUSE" when entering this mode.
2. Press the [  ] button to resume playback of the stored audio from the point at which it was paused. During playback, the SiriusXM Tuner will continue to store the channel audio until you exit the Replay mode.

### During REPLAY playback

- Fast rewind: Press and hold [  ].
  - Fast forward: Press and hold [  ].
  - Playing current segment over 3s, press the [  ] button to return to the current segment location; if play time is within 3s, press the [  ] button to jump to the last segment.
  - To advance to the beginning of the next segment: press the [  ] button.
3. Press the [MENU] knob to access SiriusXM Settings.
  4. Rotate the [MENU] knob to select "JUMP TO LIVE" to exit Replay mode.

### Note:

- If you continue to press the [  ] button until the end, the Replay mode is canceled, and the unit will change to live SiriusXM radio mode.
- If you change channels or change mode or Power Off -> On while in Replay mode, the unit will exit Replay mode to live Satellite mode and clear the Replay memory.

## ◆ SiriusXM Settings

Press the [MENU] knob under SiriusXM mode to access SiriusXM settings, rotate the [MENU] knob to select below functions:

### • Jump To Live

Press the [MENU] knob to go to Live signal.

**Note:** Press the [  ] button to exit.

### • Preset



1. Press the [MENU] knob to access the SiriusXM Preset list.
2. Rotate the [MENU] knob to select the desired Preset you wish to access.
3. Press the [MENU] knob to confirm you want to tune to that channel.

### • Save As Preset

1. Press the [MENU] knob to access the SiriusXM Save As Preset list.
2. Rotate the [MENU] knob to select the desired Preset number you want to store the preset in.
3. Press the [MENU] knob to store the current channel into preset.

### • Channel Browse

Text information, such as the channel name, artist name, song title and content is available with each SiriusXM channel. The unit can display this text information as explained below:

1. Press the [MENU] knob to activate the Channel Browse mode.
2. Press the [  ] or [  ] button to view:  
**Channel->Artist->Song->Info**

# SiriusXM Satellite Radio Operations

## • Category

This function is useful when searching for a desired channel in the current category or when browsing for a new category.

1. Press the [MENU] knob to access the SiriusXM Category browser mode.
2. Press the [MENU] knob to select radio category.
3. When the desired channel is selected, press the [MENU] knob to continue receiving that channel.

**Note:** If the current station does not have an associated category, it can be found in "all Channels".

## • Direct Tuning

1. Press the [MENU] knob to access the SiriusXM Direct Tuning mode.
2. Press the [MENU] knob to change the digit location or rotate the [MENU] knob to change the number.
3. Press the [MENU] knob to confirm channel number selection.

## • Parental Controls

Parental Control allows you to prevent unauthorized access to selected channels. When enabled, the Parental Control feature requires you to enter a passcode to unlock any locked channels.

1. Press the [MENU] knob to access the SiriusXM Parental Controls mode.
2. Press the [MENU] knob to turn On or Off the Parental Controls.
3. Rotate the [MENU] knob to enter a passcode. The default passcode is "1111".

## Lock/Unlock Channels

1. Press the [MENU] knob to access the SiriusXM Parental Controls mode.
2. Rotate the [MENU] knob to select "LOCK CHANNELS", press the [MENU] knob to access the enter code prompt.
3. Rotate the [MENU] knob to enter the passcode and to access the Lock channel mode.
4. Rotate the [MENU] knob to select Lock/Unlock channel, then press the [MENU] knob to confirm.

## Change Code

1. Press the [MENU] knob to access the SiriusXM Parental Controls mode.
2. Rotate the [MENU] knob to select "CHANGE MY CODE", press the [MENU] knob to access the change code menu.
3. Enter Old/New passcode, press the [MENU] knob to change the digit location and rotate the [MENU] knob to change the number.
4. To confirm the New passcode, enter it a second time.

**Note:** If the passcodes do not match, the radio will display "CODE DID NOT MATCH PLEASE ENTER AGAIN " for 3 seconds and then it will return to the Old Code screen.

## ◆ SiriusXM Factory Reset

1. Press and hold the [MENU] knob to enter Settings menu.
2. Rotate the [MENU] knob to select "SYSTEM", press the [MENU] knob to access.
3. Rotate the [MENU] knob to select "FACTORY RESET", press the [MENU] knob to access.
4. Rotate the [MENU] knob to select "SiriusXM", press the [MENU] knob to confirm.

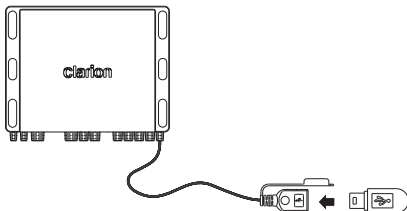
**Note:** When restoring SiriusXM to factory defaults, the following settings will be reset or affected:

- Last channel tuned is reset.
- Presets will be restored to factory default settings.
- Parental Control feature will be disabled.
- Mature Channel Tuning will be accessible.
- Parental control passcode will be restored to the factory default setting.
- The display status will go back to the default state.

# USB Mode Operation

## ◆ Connect

1. Insert a USB drive into the USB pigtail.
2. To remove the USB device, you should first select another source or turn off the power, in order to avoid damaging the USB device. Then remove the USB device.



## ◆ Selecting a Track

1. Press the [▶▶] button to go to the next track.  
Press the [◀◀] button to go to previous track.
2. Press and hold the [▶▶] button to fast forward through the track.  
Press and hold the [◀◀] button to rewind through the track.

## ◆ Play / Pause

Press the [▶||] button to pause the track is currently playing.  
Press the [▶||] button to resume playing the track that has been paused.

## ◆ USB Settings

Press the [MENU] knob to access the USB settings menu. Rotate the [MENU] knob to select the following functions:

### ● Browse

Use the [MENU] knob to browse folders or files to play back. Press the [↶] button to navigate back through the menu.

*Note: Pressing the [◀/▶] buttons will allow you to quickly skip through pages of folders when browsing.*

### ● Repeat

This function allows you to Repeat All track (Default), Repeat the currently playing track, or to Repeat the tracks in the current folder.

Press the [MENU] knob to select Repeat options: "ALL" or "TRACK" or "FOLDER".

### ● Shuffle

This function allows you to play tracks in a random order.

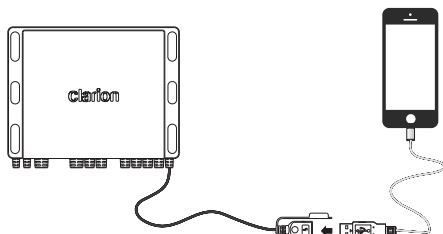
Press the [MENU] knob to turn On or Off the shuffle function.

*Note: Enabling shuffle mode will change Repeat to the default mode of ALL tracks.*

# iPod/iPhone/iPad Mode Operation

## ◆ Connect

Connect an iPod/iPhone/iPad to the USB pigtail using a USB cable. When connecting a device, the unit will read the files automatically. The track information displays on the screen once playback starts.



## ◆ Compatible Apple Devices

You can connect the following devices:

- iPod touch (5G)
- iPod touch (6G)
- iPhone 5
- iPhone 5C
- iPhone 5S
- Minimum iOS 8.0 or higher
- iPhone 6
- iPhone 6 Plus
- iPhone 6S
- iPhone 6S Plus
- iPhone SE

## ◆ Selecting a Track

1. Press the [▶▶] button to advance to the next track.  
Press the [◀◀] button to go to previous track.
2. Press and hold the [▶▶] button to fast forward through the track.  
Press and hold the [◀◀] button to rewind through the track.

## ◆ Play / Pause

Press the [▶||] button to pause the track that is currently playing.

Press the [▶||] button to resume playing the track that has been paused.

## ◆ iPod Settings

Press the [MENU] knob to access the iPod settings menu, rotate the [MENU] knob to select the following functions:

### ● Browse

1. Press the [MENU] knob to access the iPod Browse mode.
2. Use the [MENU] knob to select a category: PLAYLIST → ARTISTS → ALBUMS → GENRES → SONGS → COMPOSERS → AUDIOBOOKS → PODCASTS
3. Use the [MENU] knob to navigate the menus and select options.
4. Press the [↶] button to navigate back through the menu.

*Note: Pressing the [◀◀/▶▶] buttons allow you to quickly skip through pages of folders when browsing.*

### ● Repeat

This function allows you to Repeat All tracks, Repeat the currently playing track, or to turn the Repeat feature OFF.

Press the [MENU] knob to select Repeat options: "OFF" or "ONE" or "ALL".

### ● Shuffle

This function allows you to play tracks in a random order.

Press the [MENU] knob to turn On or Off the shuffle function.

*Note: Press the [↶] button to exit .*



# Bluetooth Operation

## ◆ Pairing a Bluetooth Device

1. From your Bluetooth enabled device, turn Bluetooth ON and search for Bluetooth devices.
2. When a list of available Bluetooth devices appear, select "CMS4".
3. "Connected OK" will appear on the CMS4 display.
4. You can now start streaming audio from your Bluetooth enabled device.

**Note:** If the mobile phone doesn't support the **SSP** (Simple Secure Pairing) Profile, please enter the pass code of "0000".

## ◆ What is audio streaming?

Audio streaming is a technique for transferring audio data such that it can be processed as a steady and continuous stream. Users can stream music from their external audio player to their audio system wirelessly and listen to the tracks through the vehicle's speakers.

### ⚠ CAUTION

Please avoid operating your connected mobile phone while audio streaming as this may cause noise or choppiness during playback. Audio streaming may or may not resume after telephone interrupt as this is dependent on the mobile phone.

## ◆ Play / Pause

Press the [▶||] button to pause the track currently playing.

Press the [▶||] button to resume playing the track that has been paused.

## ◆ Selecting a Track

1. Press the [▶▶] button to go to the next song.  
Press the [◀◀] button to go to previous track.
2. Press and hold the [▶▶] button to fast forward through the track.  
Press and hold the [◀◀] button to rewind through the track.

## ◆ Bluetooth Settings

Press the [MENU] knob to access the Bluetooth settings menu, rotate the [MENU] knob to select the following functions:

### ● Browse

1. Press the [MENU] knob to access the BT Audio Browse mode.
2. Rotate the [MENU] knob to make folder or song selections. Press the [MENU] knob to enter the folder list.
3. Rotate the [MENU] knob to select the desired song and press the [MENU] knob to start playing.

**Note:** Pressing the [◀◀/▶▶] buttons will allow you to quickly skip through pages of folders when browsing.

### ● Repeat

This function allows you to Repeat All tracks, Repeat the currently playing track, or to turn the Repeat feature OFF.

Press the [MENU] knob to select the Repeat options: "OFF" or "ONE" or "ALL".

### ● Shuffle

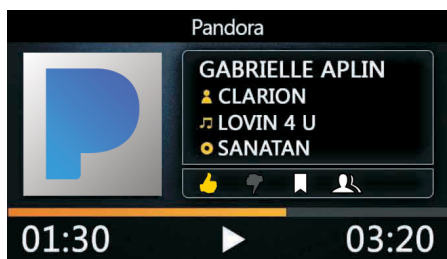
This function allows you to play tracks in a random order.

Press the [MENU] knob to turn On or Off the shuffle function.

### **Note:**

- Not all Bluetooth enabled devices will support the fast forward and rewind function.
- Playing order will depend on BT Audio player. When the [◀◀] button is pressed, some Bluetooth devices will restart the current track depending on how long the track has been playing. During music streaming playback, "BT Audio" will be shown on the display. When BT Audio device is disconnected, "BT Disconnect" will be shown on the display. Some Bluetooth audio players may not have play/pause synchronized with this unit. Please make sure both device and main unit are in the same play/pause status in BT Audio mode.

# Pandora Operation



You can stream Pandora internet radio by connecting an iOS (via USB or Bluetooth) or Android (Bluetooth only) device that has the Pandora mobile application already installed. To start streaming, connect the devices with Pandora already launched.

Press the [**Ⓛ**/SRC] button to select the Pandora source.

## ◆ Thumbs Up/Thumbs Down

1. Press and hold the [**▶▶**] button for thumbs up. Giving a track the thumbs up will tell Pandora to play more tracks like that one.
2. Press and hold the [**◀◀**] button for thumbs down. Giving a track the thumbs down will skip to the next track, and Pandora will remember not to play that track on the station again.

### Note:

- You can personalize your stations by “thumbs up” or “thumbs down”.
- If you give a track the thumbs down after the skip limit has been exceeded, your feedback will be saved but the current track will continue to play.
- Pressing and holding [**▶▶**] on a track that already has a thumbs up will remove the thumbs up marking.

## ◆ Skip

Press the [**▶▶**] button for the next tracks in station.

**Note:** Pandora limits the number of skips allowed on their service. If you attempt to skip tracks beyond the limit, “**SKIP LIMIT**” is displayed.

## ◆ Pandora Settings

Press the [**MENU**] knob to access the Pandora setting menu, rotate the [**MENU**] knob to select the following functions:

### ● Stations

1. Press the [**MENU**] knob to access the Stations setting mode.
2. Rotate the [**MENU**] knob to select the Stations options.
3. Press the [**MENU**] knob to confirm the selection.

### ● Bookmark

1. Press the [**MENU**] knob to access the Bookmark setting mode.
2. Rotate the [**MENU**] knob to select the Track or Artist.
3. Press the [**MENU**] knob to start the bookmark.

### ● Stations Manage

1. Press the [**MENU**] knob to access the Stations Manage Settings menu.
2. Rotate the [**MENU**] knob to select the Stations Manage Settings options.

**Create From Artist:** Allows you to create a station from the artist that you are currently listening to.

**Create From Track:** Works similarly by creating a station from the current track being played.

**Create From Genre:** This will give you music genres to select from to create your station.

**Delete:** Will delete the now playing station.

3. Press the [**MENU**] knob to confirm.

**Note:** If the name of the station you wish to create form a track title or an artist name is the same as the station name currently playing, “**NOW PLAY**” appears on the display and the station will not be created.

# AUX Operation

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The AUX RCA input is provided to allow audio playback from external devices. Press the [⏮/SRC] button and select “AUX”.

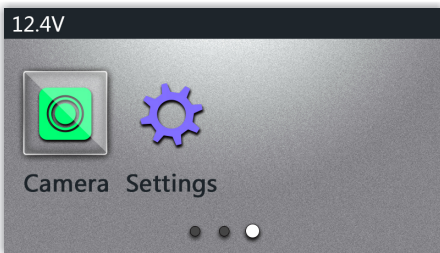


# Camera Operation

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The CMS4 features an optional Camera input function allowing the user to see the camera input through the CMS4 display as well as hear camera audio.

Press the [↩] button and select “Camera” to switch to the camera input display. The Camera view can also be triggered by applying a +12V connection to the Camera Trigger wire of the CMS4. See wiring details for further information.



**Note:** To configure the camera audio settings, please see the **Camera Audio** section in **Settings** on Page 9 of this manual.

# 6. TROUBLESHOOTING

## GENERAL

Problem	Cause	Measure
The unit will not power on	The vehicle's accessory switch is not on	If the power supply is properly connected to the vehicle's accessory terminal, switch the ignition key to "ACC"
No sound	Volume is set too low	Increase the volume to audible level
	Wiring is not properly connected	Correct wiring connections
The remote is not responding	The built-in internal processor is not operating properly	Hold the Power / SRC button and select Power Off. Press the Power / SRC button to power back on and check if the remote is functioning properly.
Auto seek function can not find any stations	The antenna cable is not connected	Insert the antenna cable securely
	The signals are too weak	Select a station manually

## USB

Problem	Cause	Measure
USB device cannot be inserted.	The USB device has been inserted with wrong direction.	Reversing the connection direction of the USB device, try it again.
	The USB connector is broken.	Replace with a new USB device.
USB device is not recognized.	The USB device is damaged.	Disconnect the USB device and reconnect. If the device is still not recognized, try replacing with a different USB device.
	Connectors are loose.	
No sound heard with the display "No File" shown.	No MP3/WMA file is stored in the USB device.	Store these files properly in the USB device.
Sound skips or is noisy.	MP3/WMA files are not encoded properly.	Use MP3/WMA files encoded properly.

## Bluetooth

Problem	Cause	Measure
Cannot pair the Bluetooth enabled device with the audio system.	The device does not support the profiles required for the system.	Use another device to connect.
	The Bluetooth function of the device is not enabled.	Refer to the user manual of the device for how to enable the function.
The audio quality is poor after connection with a Bluetooth-enabled device.	The Bluetooth reception is poor.	Move the device closer to the audio system or remove any obstacle between the device and the system.

# 6. TROUBLESHOOTING

## SiriusXM Advisory Messages

Message	Description
Check Tuner	The radio is having difficulty communicating with the SiriusXM Connect Vehicle Tuner. The tuner may be disconnected or damaged. Verify that the SiriusXM Connect Vehicle Tuner cable is securely connected to the radio.
Check Antenna	The radio has detected a fault with the SiriusXM antenna. The antenna cable may be either disconnected or damaged. Verify that the antenna cable is connected to the SiriusXM Connect Vehicle Tuner. Inspect the antenna cable for damage and kinks. Replace the antenna if the cable is damaged. SiriusXM products are available at your local car audio retailer or online at <a href="http://www.shop.siriusxm.com">www.shop.siriusxm.com</a> .
No Signal	The SiriusXM Connect Vehicle Tuner is having difficulty receiving the SiriusXM satellite signal. Verify that your vehicle is outdoors with a clear view of the sky. Verify that the SiriusXM magnetic mount antenna is mounted on a metal surface on the outside the vehicle. Move the SiriusXM antenna away from any obstructions. Inspect the antenna cable for damage and kinks. Consult the SiriusXM Connect Vehicle tuner installation manual for more information on antenna installation. Replace the antenna if the cable is damaged. SiriusXM products are available at your local car audio retailer or online at <a href="http://www.shop.siriusxm.com">www.shop.siriusxm.com</a> .
Channel Not Subscribed	The channel that you have requested is not included in your SiriusXM subscription package or the channel that you were listening to is no longer included in your SiriusXM subscription package. Visit <a href="http://www.siriusxm.com">www.siriusxm.com</a> or call 866-635-2349 if you have questions about your subscription package or would like to subscribe to this channel.
Channel Not Available	The channel that you have requested is not a valid SiriusXM channel or the channel that you were listening to is no longer available. You may also see this message briefly when first connecting a new SiriusXM Connect Vehicle tuner. Visit <a href="http://www.siriusxm.com">www.siriusxm.com</a> for more information about the SiriusXM channel lineup.
Channel Locked	The channel that you have requested is Locked by the radio Parental Control feature. See the section on Parental Control, page 12 for more information on the Parental Control feature and how to access locked channels.
Subscription Updated	An update to your SiriusXM subscription has been received by the SiriusXM tuner. Press any button to continue. Visit <a href="http://www.siriusxm.com">www.siriusxm.com</a> or call 866-635-2349 if you have questions about your subscription.

# 7. SPECIFICATIONS

## FM Tuner

Frequency Range:	USA	87.9 - 107.9MHz
	Europe	87.5 - 108.0MHz
	Asia	87.5 - 108.0MHz
	Australia	87.5 - 108.0MHz
Usable Sensitivity:	4 $\mu$ V (S/N=30dB)	
Image Rejection:	>45dB	
Stereo Separation:	>25dB	

## AM Tuner

Frequency Range:	USA	530 - 1710KHz
	Europe	531 - 1602KHz
	Asia	531 - 1629KHz
	Australia	531- 1629KHz
Usable Sensitivity:	40dB (S/N=20dB)	

## Weather Band Selection

CH.1	162.400MHz	CH.2	162.425MHz
CH.3	162.450MHz	CH.4	162.475MHz
CH.5	162.500MHz	CH.6	162.525MHz
CH.7	162.550MHz		

## Audio

Maximum Power Output: 70W x 4 @ 2 ohm

## USB

USB:	2.0 Full Speed
USB Port:	2.1A
USB Voltage:	5.0V
Maximum MP3/WMA Songs:	65535
Maximum MP3/WMA Folder:	255
Maximum Songs per Folder:	65535
Maximum USB Memory Size:	32G
Supported Format:	FAT16/FAT32

## Bluetooth

Specification:	Bluetooth Version. 3.0+EDR (Enhanced Data Rate)
Supported Profiles:	A2DP (Advanced Audio Distribution Profile) aptX (CD Quality audio bandwidth matching and reproduction) AVRCP 1.4 (Audio/Video Remote Control Profile) SPP (Serial Port Profile) SSP (Simple Secure Pairing)
Send/Receive Sensitivity:	Class 2

## General

<b>Power Supply Voltage:</b>	14.4V DC (10.8 to 15.6V allowable)
<b>Grounding System:</b>	Negative Ground
<b>Power When Off:</b>	3.6mA

**Note:** Specifications and design are subject to change without notice for further improvement.

Power Output:  
18W x 4 RMS (4  $\Omega$  @ 14.4V  
 $\leq$  1% THD+N)  
Signal to Noise Ratio:  
72dB (reference: LPF 1W into 4  $\Omega$ )



# INSTALLATION AND WIRE CONNECTION

## 1. BEFORE STARTING

1. This set is exclusively for use in vessels with a negative ground 12 V power supply.
2. Read these instructions carefully.
3. Be sure to disconnect the battery “-” terminal before starting. This is to prevent short circuits during installation. (Figure 1)

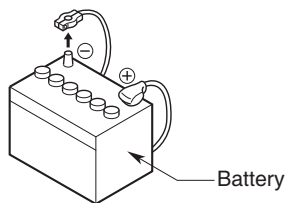


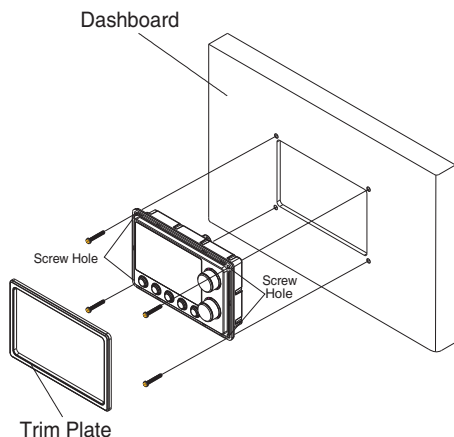
Figure 1

## 2. INSTALLATION CAUTIONS

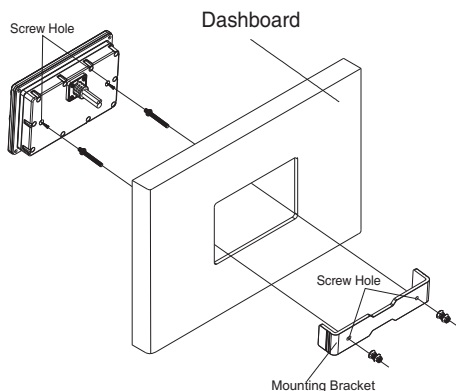
1. In order to avoid any interference, do not install the tuner module or control unit in the proximity of the engine compartment.
2. The use of unauthorized parts can cause permanent damage to the unit.
3. Always check your wire connections to ensure proper installation before turning on the unit.
4. Consult with your nearest dealer for proper installation or if common parts need to be used. Seek assistance if modifications or drilling holes to your vessel is needed.
5. Do not install the unit where it will be subjected to excessive moisture, dust, dirt, foreign particles or vibration. Areas of high temperature from the engine, direct sunlight, heater or hot air should also be avoided.
6. Do not install the unit in a location where it will interfere with the vessel operation, or it will injure the passengers if there is a sudden or emergency stop.

## 3. OPTIONAL MARINE WIRED REMOTE INSTALLATION

The control unit should be mounted to a dry, clean and flat surface. Ensure the rear gasket is fully sealed to the mounting surface without distorting the unit.



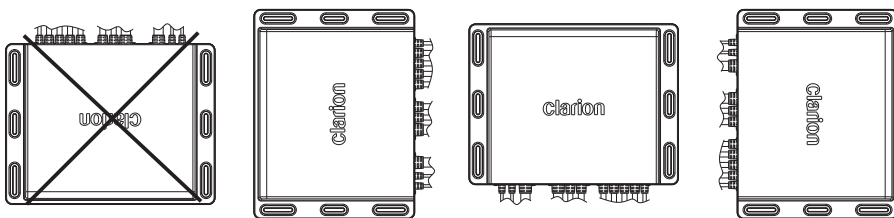
Method 1



Method 2

## 4. BLACK BOX INSTALLATION

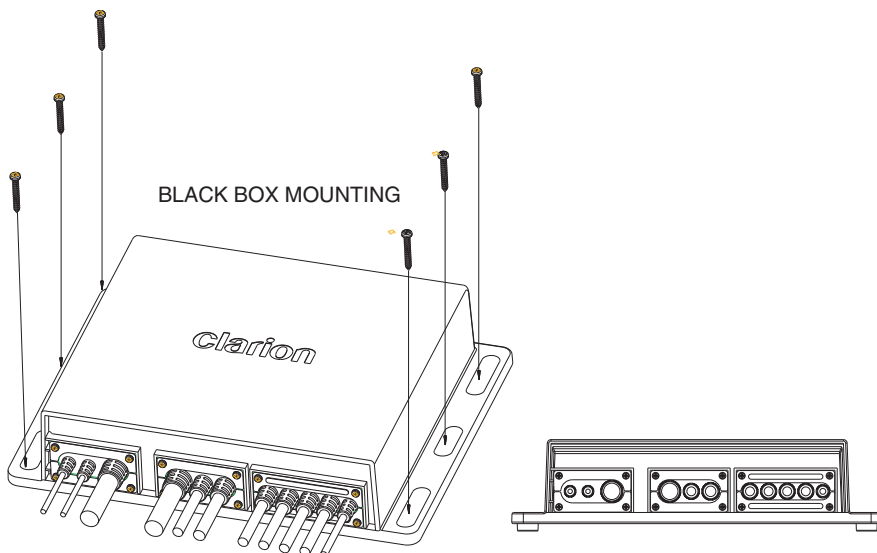
1. Select an area with sufficient ventilation for the mounting of the black box in order to prevent the module from overheating. You may mount the black box in a horizontal or vertical position. If the black box is mounted in a vertical position, do not mount the module with the harness exit points directly facing up to prevent water collecting in these areas.



2. Please refer to the diagram below for the mounting screw hole positions. Always use the shortest length of screw possible.
3. During installation, use the 6 rubber mounting stoppers (included in the package) for the bottom of the module. This provides clearance from surface moisture and provides sufficient ventilation for the heat sink.
4. Extension wires/cables may be needed to route the harness and cable throughout the vessel.

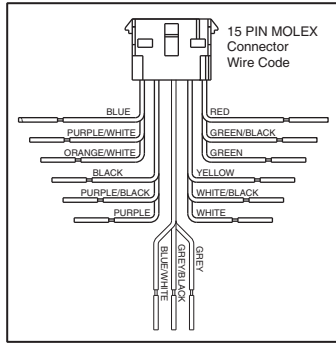
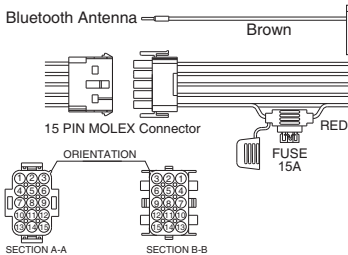
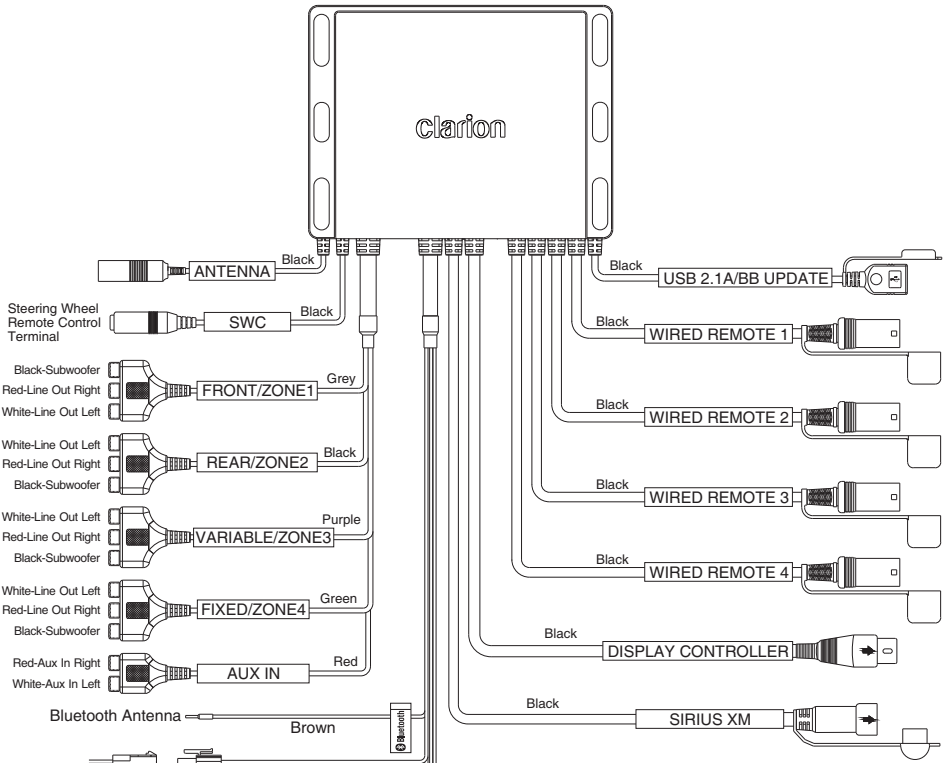
**Note:** Retain some slack in the harness/ cables to prevent damage to the wires. It is recommended relieve stress in all cables and harnesses.

5. Always read through the wiring diagram in this manual first, and follow all the wiring diagrams carefully. The connections should be secured and insulated with crimp connectors or electrical tape to ensure proper connections.
6. Once the wiring connections are completed, connect the negative terminal on the battery, turn the vessel accessory ON and power on the unit to check if it is operating correctly. If abnormalities occur, disconnect the battery negative terminal, recheck all wiring and try again. Please refer to the troubleshooting section for assistance.

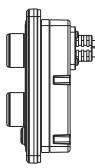
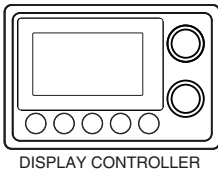
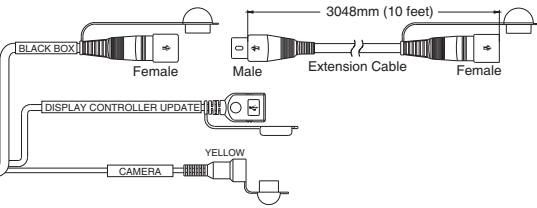




# 5. WIRE CONNECTION



PIN NO.	WIRE COLOR	WIRE DEFINITION	AWG
1	GREEN	SPEAKER REAR LEFT (+)	20
2	GREEN/BLACK	SPEAKER REAR LEFT (-)	20
3	RED	ACCESSORY/IGNITION SWITCHED (+12V)	20
4	WHITE	SPEAKER FRONT LEFT (+)	20
5	WHITE/BLACK	SPEAKER FRONT LEFT (-)	20
6	YELLOW	BATTERY (+12V)	16
7	GREY	SPEAKER FRONT RIGHT (+)	20
8	GREY/BLACK	SPEAKER FRONT RIGHT (-)	20
9	BLUE/WHITE	AMPLIFIER REMOTE TURN ON (+)	20
10	PURPLE	SPEAKER REAR RIGHT (+)	20
11	PURPLE/BLACK	SPEAKER REAR RIGHT (-)	20
12	BLACK	GROUND (-)	16
13	ORANGE/WHITE	(+12V)/DIMMER	20
14	PURPLE/WHITE	CAMERA TRIGGER (+)	20
15	BLUE	POWER ANTENNA	20



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