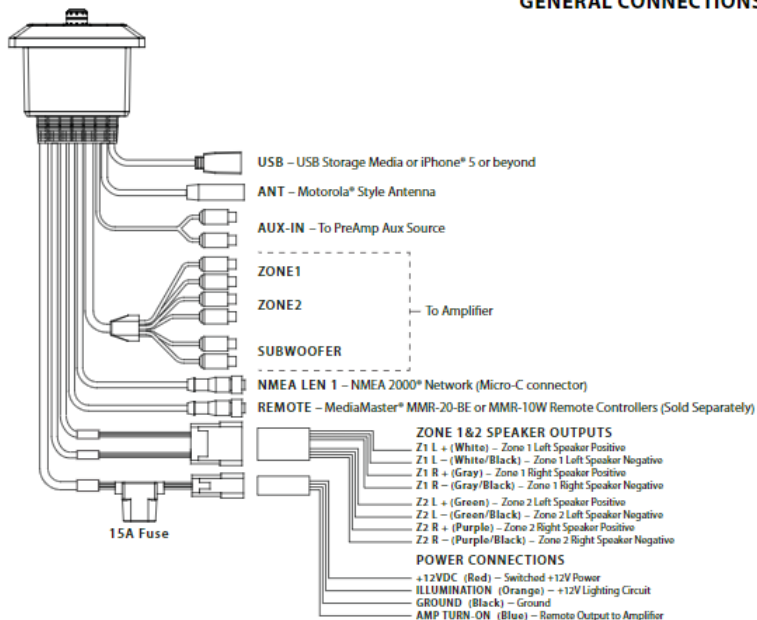


GENERAL CONNECTIONS



WIRING HARNESS CONNECTIONS

Harnesses exiting the rear of the unit are used to connect to speakers, aftermarket amplifiers/equipment and media devices. Depending on your specific equipment, you may or may not use all of the connections. Make sure to plan the layout of your system prior to routing wires and making connections. Refer to the table at right for details.

! IMPORTANT









Disconnect the NEGATIVE battery post connection and secure the disconnected cable to prevent accidental reconnection. This is an essential safety precaution during installation!

WIRING & CONNECTIONS

Label	Wire Color	Connection
+12VDC	Red	Connect to a switched positive (+12V) source. This can be an ignition controlled, accessory circuit or a vessel battery equipped with a main disconnect switch. For added control functionality, we also recommend installing a dedicated toggle switch (not included) at this wire lead's +12V connection point. Always install an appropriate fuse within 18 inches (45 cm) of the +12V connection. If this is the only device using the connection point, use a 15 amp fuse.
GROUND	Black	Connect to a clean metal chassis ground, if available. If no metal chassis ground is available, it may be necessary to connect this to the NEGATIVE battery post. All ground connections (source unit and amplifiers) should be made at the same location to minimize noise.
ILLUMINATION	Orange	Connect to a +12V lighting circuit to automatically switch the illumination to night mode when the lights are activated.
AMP TURN-ON	Blue	This wire provides a positive (+12V) turn-on voltage to activate aftermarket amplifiers and equipment.
Z1 L+	White	(+) Positive Left Speaker / Zone 1
Z1 L-	White/Black	(-) Negative Left Speaker / Zone 1
Z1 R+	Gray	(+) Positive Right Speaker / Zone 1
Z1 R-	Gray/Black	(-) Negative Right Speaker / Zone 1
Z2 L+	Green	(+) Positive Left Speaker / Zone 2
Z2 L-	Green/Black	(-) Negative Left Speaker / Zone 2
Z2 R+	Purple	(+) Positive Right Speaker / Zone 2
Z2 R-	Purple/Black	(-) Negative Right Speaker / Zone 2
See Audio Zone Setup on pages 15-16 for configurable settings		
Label	Description	Connection
ZONE1	Black RCA	Left Channel Signal Output / Zone 1
	Red RCA	Right Channel Signal Output / Zone 1
ZONE2	Black RCA	Left Channel Signal Output / Zone 2
	Red RCA	Right Channel Signal Output / Zone 2
SUBWOOFER	Black RCA	Left Channel Signal Output / Subwoofer
	Red RCA	Right Channel Signal Output / Subwoofer
AUX-IN	Black RCA	Left Channel Signal Input / Auxiliary
	Red RCA	Right Channel Signal Input / Auxiliary
2V or 1V RMS Input Sensitivity		
ANT	Antenna	Connect to Motorola style antenna
USB	USB Connector	Connect to USB storage device or iPhone® (see pages 12-13 for info)
REMOTE	5-pin Threaded Connector	Connect to MMR-20-BE (wired) or MMR-10W (wireless) remote controllers (each sold separately)
NMEA LEN 1	5-pin Micro-C Connector	Connect to MMR-40 Network Controller or NMEA 2000® network (requires NMEA 2000® cables, connectors, etc. (sold separately)

GENERAL CONTROL FUNCTIONS

Below is a list of general commands, including many common operations. The functionality of each control will vary depending on the current source and menu selected.

	Source/ Power	Use this button to turn ON or OFF and to access the source selection menu. <ul style="list-style-type: none"> • Press to turn the unit ON • Press to display the SOURCE: Select menu • Press and hold to turn the unit OFF 		
VOL/SEL (Knob)	Volume/ Select	Use this knob as a Main Volume Control and for menu navigation/selection. <ul style="list-style-type: none"> • Rotate to adjust volume • Rotate to scroll thru menu options • Press to choose/enter (menu options) • Rotate/press to access/adjust the Audio Zone Level menu screen (see pages 15-16 for more info) 		
	Back/ Menu	Use this button to go back/return and to access the menu options. <ul style="list-style-type: none"> • Press to go back or return to the Now Playing Screen (AM/FM/AUX) • Press to access main menu options (USB/Bluetooth*) 		
	Favorites	Use this button to save, view or edit preset channels (up to 18). <ul style="list-style-type: none"> • Press and hold to store a channel (AM/FM) as a preset (star will turn solid) • Press to view your list of stored presets and the Favorites: Edit menu. 		
	Settings	Use this button to access the main system setting menus and audio settings. <ul style="list-style-type: none"> • Press and hold to access the System Settings: Main Menu • Press to access the Tone, Balance & Crossover menu 		
	Forward	Use this button to make a forward selection. Press to: <ul style="list-style-type: none"> • Tune in the next frequency (AM/FM) • Select the next track (USB/Bluetooth*) Press and hold to: <ul style="list-style-type: none"> • Seek to the next channel (FM) or Skip forward ten frequency steps (AM) • Fast-forward (USB) 		
	Backward	Use this button to make a backward selection. Press to: <ul style="list-style-type: none"> • Tune in the previous frequency (AM/FM) • Select the previous track (USB/Bluetooth*) Press and hold to: <ul style="list-style-type: none"> • Seek to the previous channel (FM) or Skip backward ten frequency steps (AM) • Fast-rewind (USB) 		
	Mute/ Pause/ Resume/	<ul style="list-style-type: none"> • Press to mute audio (AM/FM/AUX) • Press to pause or resume the current selection (USB/Bluetooth*) 	<ul style="list-style-type: none"> • When the Audio Zone Level screen is displayed, press to mute all audio (AM/FM/AUX/USB/Bluetooth*) 	<ul style="list-style-type: none"> • Press and hold to access the USB: Play options menu (USB)
	Day/ Night	<ul style="list-style-type: none"> • Press to switch between Day/Night display settings 	<ul style="list-style-type: none"> • Press and hold to access the System Settings: Display menu 	

GENERAL CONTROLS



Turning the Unit ON / OFF

1. Press **SOURCE** to turn the unit ON.
2. Press and hold **SOURCE** to turn the unit OFF.

Selecting a Source

1. Press **SOURCE** to access the **SOURCE: Select** menu.
2. Rotate the **VOL/SEL** knob to highlight a desired source; press to select.

Adjusting Volume

The **VOL/SEL** knob is designed to be used as a main volume controller, allowing easy adjustment of the audio levels, for all zones simultaneously or for each zone independently. Refer to **Audio Zone Setup** on pages 15-16 for more info.



1. Rotate the **VOL/SEL** knob clockwise/counter-clockwise to increase/decrease volume (this also displays the **Audio Zone Level** screen).

Muting or Pausing Audio

1. Press **▶ ||** to mute/unmute audio (AM/FM) or pause/resume the current selection (USB/Bluetooth®).

Tuner Operation

Tuning selections (AM/FM) can be made with the following controls:

	Forward	Press to: <ul style="list-style-type: none">• Tune in the next frequency (AM/FM) Press and hold to: <ul style="list-style-type: none">• Seek to the next channel (FM)• Skip forward ten frequency steps (AM)
	Backward	Press to: <ul style="list-style-type: none">• Tune in the previous frequency (AM/FM) Press and hold to: <ul style="list-style-type: none">• Seek to the previous channel (FM)• Skip backward ten frequency steps (AM)

Favorites

18 of your preferred AM/FM stations may be stored as presets for quick tuning access.

Storing a Favorite

1. While listening to a desired channel (AM/FM), press and hold ★ until the star icon turns solid.

Tuning to a Favorite

1. Press ★ to viewed stored presets.
2. Rotate the **VOL/SEL** knob to highlight a desired preset; press to select.

Moving or Deleting a Favorite

1. Press ★ to viewed stored presets.
2. Rotate the **VOL/SEL** knob clockwise to the **Favorites: Edit** menu and highlight a desired function; press to select.
3. Use the **VOL/SEL** knob to select the preset to be moved or deleted.

Bluetooth® Audio

You may wirelessly stream audio from a Bluetooth® compatible device from up to 35 ft. away (11 m). Up to 8 devices can be paired to the MM50, but only one streaming device can connect at one time.

Pairing a new device:

1. Press **SOURCE** on the MM50 to access the **SOURCE: Select** menu.
2. Rotate the **VOL/SEL** knob to highlight **Bluetooth®** and press to access the **Bluetooth: Main Menu**.
3. Rotate the **VOL/SEL** knob to highlight **Pair New Device** and press to select/enter **Bluetooth: Pairing Mode**.
3. Enable Bluetooth® on your streaming device and scan for nearby devices; select **JLA MM50** (or your custom name) from your list of available devices to connect.

Once connected, you may control your audio selections with the MM50 using the controls below or directly from your device:

▶▶	Forward	• Press to select the next track
◀◀	Backward	• Press to select the previous track
▶	Mute/Pause/ Resume	• Press to pause or resume playing the current selection • When the Audio Zone Levels screen is displayed, press to mute audio

Pairing additional devices:

1. Press **SOURCE** on the MM50 to access the **SOURCE: Select** menu.
2. Rotate the **VOL/SEL** knob to highlight **Bluetooth®** and press to access the **Bluetooth: Connect Paired Device** menu.
3. Rotate the **VOL/SEL** knob to highlight **Connect New Device**; press to enter **Pairing Mode**.
4. Enable Bluetooth® on your streaming device and scan for nearby devices; select **JLA MM50** (or your custom name) from your list of available devices to connect.





Managing Bluetooth® Devices:

You may manage paired devices or add new devices from the **Bluetooth: Main Menu**. To access the **Bluetooth: Main Menu**, press **≡** while in Bluetooth® mode; then use the **VOL/SEL** knob to make your selections.

Connecting USB Devices

The USB port may be used to connect USB storage class devices (thumb drive, digital audio player, etc.). This USB connection also provides a 1A output for device charging. If this output is exceeded, an error message will display and the output will be disabled. Devices may be plugged directly into the USB port or use the JL Audio Combo 3.5 mm Audio Jack and 9 Wire USB Port for Panel-Mounting (XMD-USB/3.5MM-PNL). An appropriate USB cable for your device is required to make this input connection.

Once connected, press the **SOURCE** button and select **USB** from the **SOURCE: Select** menu to access the connected device with the following controls:

	Forward	<ul style="list-style-type: none">• Press to select the next track• Press and hold to fast-forward
	Backward	<ul style="list-style-type: none">• Press to select the previous track• Press and hold to fast-rewind
	Mute/Pause/Resume	<ul style="list-style-type: none">• Press to pause or resume playing the current selection• Press and hold to access Shuffle and Repeat options from the USB: Play Options menu• When the Audio Zone Levels screen is displayed, press to mute audio. You may also press and hold VOL/SEL to mute audio.
	Back/Menu	<ul style="list-style-type: none">• Press to access the USB: Main Menu options• Press to go back or return to the Now Playing Screen





! IMPORTANT

- Properly secure the connected device before driving to prevent damage from dropping or sudden acceleration/braking.
- Control, functionality and display may vary depending on the type of device connected.
- Connections to computers or portable hard drives are not supported.
- Connections via USB hubs are not supported.

Connecting an iPhone®

An iPhone® may be connected to the USB port using an appropriate Lightning to USB cable (not included).

Once connected, press the **SOURCE** button and select **USB** from the **SOURCE: Select** menu to access the connected device with the following controls:

	Forward	<ul style="list-style-type: none">• Press to select the next track• Press and hold to fast-forward
	Backward	<ul style="list-style-type: none">• Press to select the previous track• Press and hold to fast-rewind
	Mute/Pause/ Resume	<ul style="list-style-type: none">• Press to pause or resume playing the current selection• Press and hold to access Shuffle and Repeat options from the USB: Play Options menu• When the Audio Zone Levels screen is displayed, press to mute audio. You may also press and hold VOL/SEL to mute audio.
VOL/SEL (Knob)	Volume/ Select	<ul style="list-style-type: none">• When the Audio Zone Levels screen is displayed, press and hold to mute audio
	Back/Menu	<ul style="list-style-type: none">• Press to access the USB: Main Menu options• Press to go back or return to the Now Playing Screen


Apple compatibility: iPhone® 5 or beyond (functionality contingent upon compatible iOS release)

! IMPORTANT

- Properly secure the connected device before driving to prevent damage from dropping or sudden acceleration/braking.
- Control, functionality and display may vary depending on the model and version of iPhone® connected.
- When connected via the USB port, make sure to unpair or disable the Bluetooth® connection to avoid possible playback conflicts.
- If you experience abnormal performance during operation, disconnect the iPhone® and check its condition. Restart your iPhone® if performance does not improve.
- “Made for iPhone” means that an electronic accessory has been designed to connect specifically to an iPhone® 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 an iPhone® may affect wireless performance.
- iPhone®, Lightning and all related marks and logos are trademarks of Apple Inc., registered in the U.S. and other countries.

System Settings Main Menu


This menu allows access the main operational settings and features of your MM50. Refer to the table below for available settings and functionality.

1. Press and hold  to access the **System Settings: Main Menu**.
2. Turn the **VOL/SEL** knob to highlight one of the menu settings listed in the table below; press to select.
3. Use the **VOL/SEL** knob to make selections.

Setting	Function
Name this Device	Create a custom name to be displayed on connected Bluetooth® devices and NMEA 2000® networks
Audio Zone Setup	Configure settings for each set of audio zone outputs (see pages 15-16 for more info).
AUX Input Sensitivity	Configure the AUX input sensitivity: 2V or 1V RMS (default)
Diagnostic	Displays serial number, hardware and software version info
Display	Configures display and brightness settings
Low Voltage Alert	Notifies of low supply voltage conditions (see below for more info)
Scrolling Text	Enables continuous scrolling of available RDS/track text info
Tuner Region	Configures AM/FM tuner range/scale for a specific region

Low Voltage Alert

This built-in alert notifies when the +12VDC supply voltage drops below 10 volts. If triggered, the unit will enter Safe Mode and mute the audio output. A warning will also display on-screen with instructions to turn the unit off until normal operating voltage is restored.

1. Press and hold  to access the **System Settings: Main Menu**.
2. Turn the **VOL/SEL** knob to **Low Voltage Alert** and press to enter.
3. Turn the **VOL/SEL** knob to select **ON** or **OFF** and press to enter.


Audio Zone Setup

The MM50 includes two sets of line-level RCA outputs for its main audio zones, plus a dedicated set of subwoofer zone outputs, to send audio signals to aftermarket amplifiers/equipment. A built-in four channel amplifier is also onboard and delivers 100 watts of audio output power (4 x 25W RMS) from the main zones.

Both Zone 1 and 2 audio output types (speaker and line-level) deliver high-quality, full-range audio, while the subwoofer outputs are equipped with a 500 Hz low-pass filter.

The functionality of each zone is configurable via the **Audio Zone Setup** menu, allowing you to customize the listening experience for your vessel and audio system.

Access the **Audio Zone Setup** menu to configure the functionality of each zone.

1. Press and hold  to access the **System Settings: Main Menu**.
2. Press the **VOL/SEL** knob to select **Audio Zone Setup**.
3. Use the **VOL/SEL** knob to make selections.

Refer to the table below and the following page for each zone's available settings and functionality.

Zone	Menu	Setting 1	Setting 2
Z1: (ZONE 1) Z2: (ZONE 2) (configures line-level RCA and speaker-level outputs)	Level Control Mode	Variable (default)	
		Fixed	4V RMS Max (default) 2V RMS Max 1V RMS Max
		Off	
	Max Volume Limit	Set Volume Limit	
	Rename Zone	Bow, Bridge, Cabin, Cockpit, Galley, Helm, Stateroom 1, Stateroom 2, Tower, Transom	
		Custom Name	Alphanumeric Input
		Factory Default	
	Tone Control Mode (ZONE 2 only)	Same as Z1	
Independent Tone Control			
SUB	Level Control Mode	Linked with Z1	
		Linked with Z2	
		Off	
	Tone Control Mode	Linked with Z1	
		Linked with Z2	