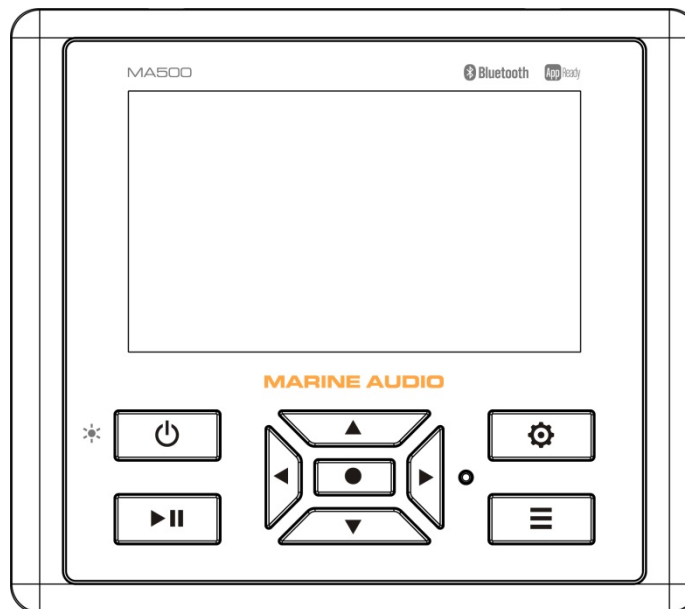




# MA500

*MARINE AUDIO SYSTEM*

## Installation and Operation Manual



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[www.asaelectronics.com](http://www.asaelectronics.com)  
877.305.0445

## WARNINGS AND COMPLIANCE

### Important Safety Instructions

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

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***NOTE: USE THE PROPER POWER SUPPLY! This product is designed to operate with a 12 volt DC negative ground battery system.***

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### FCC Notes

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***WARNING! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.***

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***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.***

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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.

# INTRODUCTION

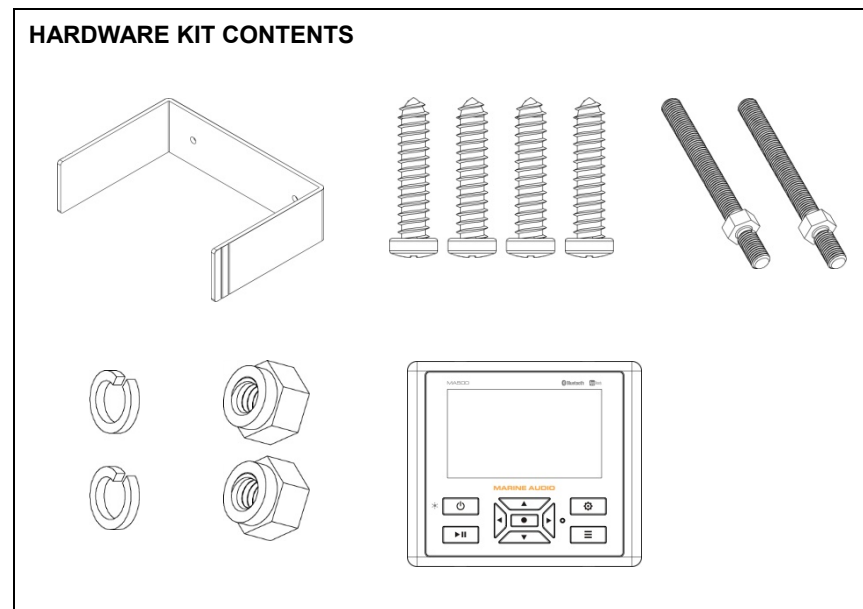
## System Features

Features of the Marine Audio MA500 include:

- White LED Backlit , TFT Display
- IPx6 Waterproof
- Low Battery Alarm
- AM/FM US/EURO Tuner with 30 Presets (12 AM, 18 FM)
- Weatherband with Weather Alert
- Bluetooth (Supports A2DP and AVRCP)
- APP Ready
- USB Playback of MP3/WMA Files
- Mute
- Pre-set Equalizer - 5 settings (User > Flat > Pop > Classical > Rock)
- Electronic Bass, Treble, Balance and Fader Controls
- Output Power 22W x 4
- Wired Remote Control Ready (only supports MARC100)
- 2-Channel Pre-amp Line Level Outputs
- Auxiliary Audio Input (Rear RCA)

## Content List

- Marine Audio MA500 Radio
- Installation Opening Cutout Template
- Hardware Kit
  - Rear Mounting Bracket
  - (4x) M3.6 x 16 Screws
  - (2x) Mounting Bolt
  - (2x) Spring Washer
  - (2x) Hex Nut



# INSTALLATION

## Before you Begin

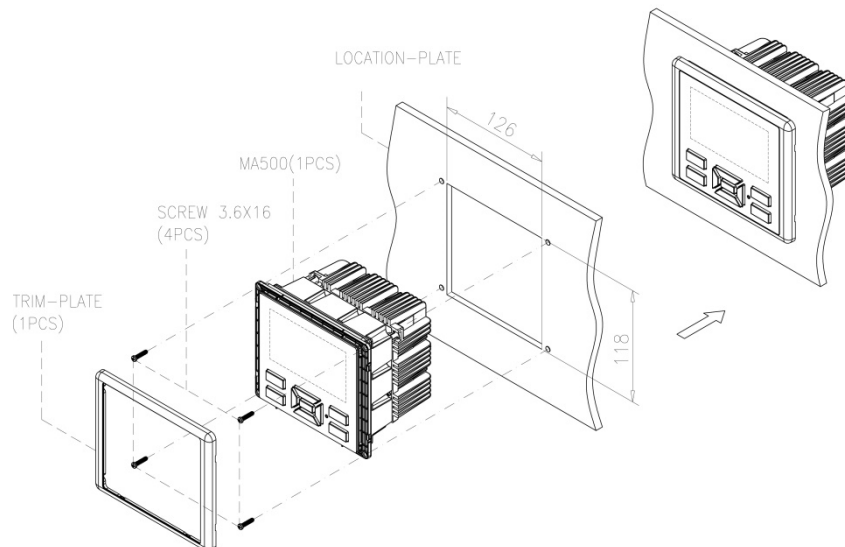
Before you begin, always disconnect the negative battery terminal.

## Important Notes

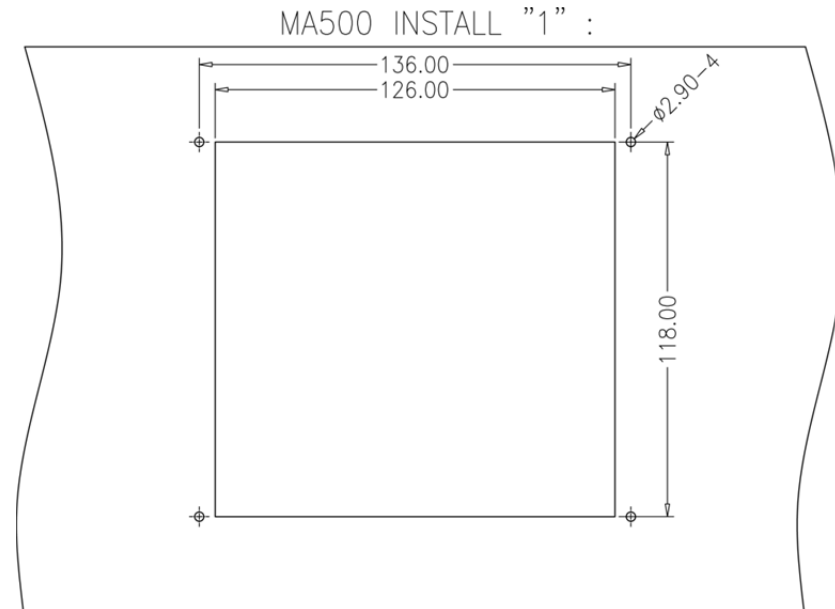
- Before final installation, test the wiring connections to make sure the unit is connected properly and the system works.
- Consult with your nearest dealer if installation requires the drilling of holes or other modifications to your vehicle.
- Install the unit where it does not interfere with driving and cannot injure passengers if there is a sudden or emergency stop.

## Front Mount

1. Refer to the dimensioned diagram on the right to cut the installation opening.
2. 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.
3. Place the radio in front of the dashboard opening so the wiring can be brought through the opening.
4. Follow the wiring diagram carefully and make certain all connections are secure to ensure proper operation.



5. After completing the wiring connections, temporarily reconnect the battery terminal and turn the unit on to confirm operation (vehicle 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.
6. Carefully slide the radio into the opening and make sure it is right-side-up.
7. Secure the radio to the dashboard using M3.6 stainless steel screws (provided).
8. Replace the covers on either side of the radio.
9. Test radio operation by referring to the operating instructions for the unit.



## Removing the Unit

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

## Reconnect Battery

When wiring is complete, reconnect the battery negative terminal.

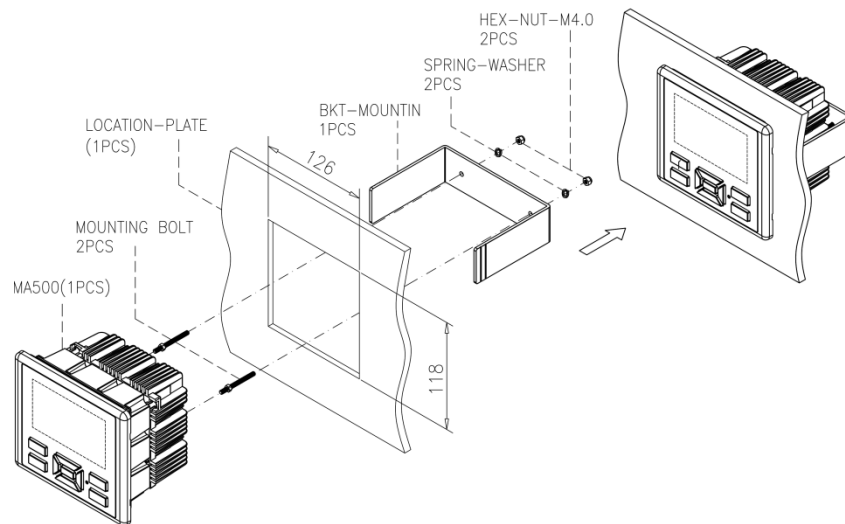
## Bracket Mount

The U bracket is a special mounting base/bracket for easy installation on most flat surfaces. Please use the included mounting bolts to attach the radio to the bracket, as shown in the diagram below.

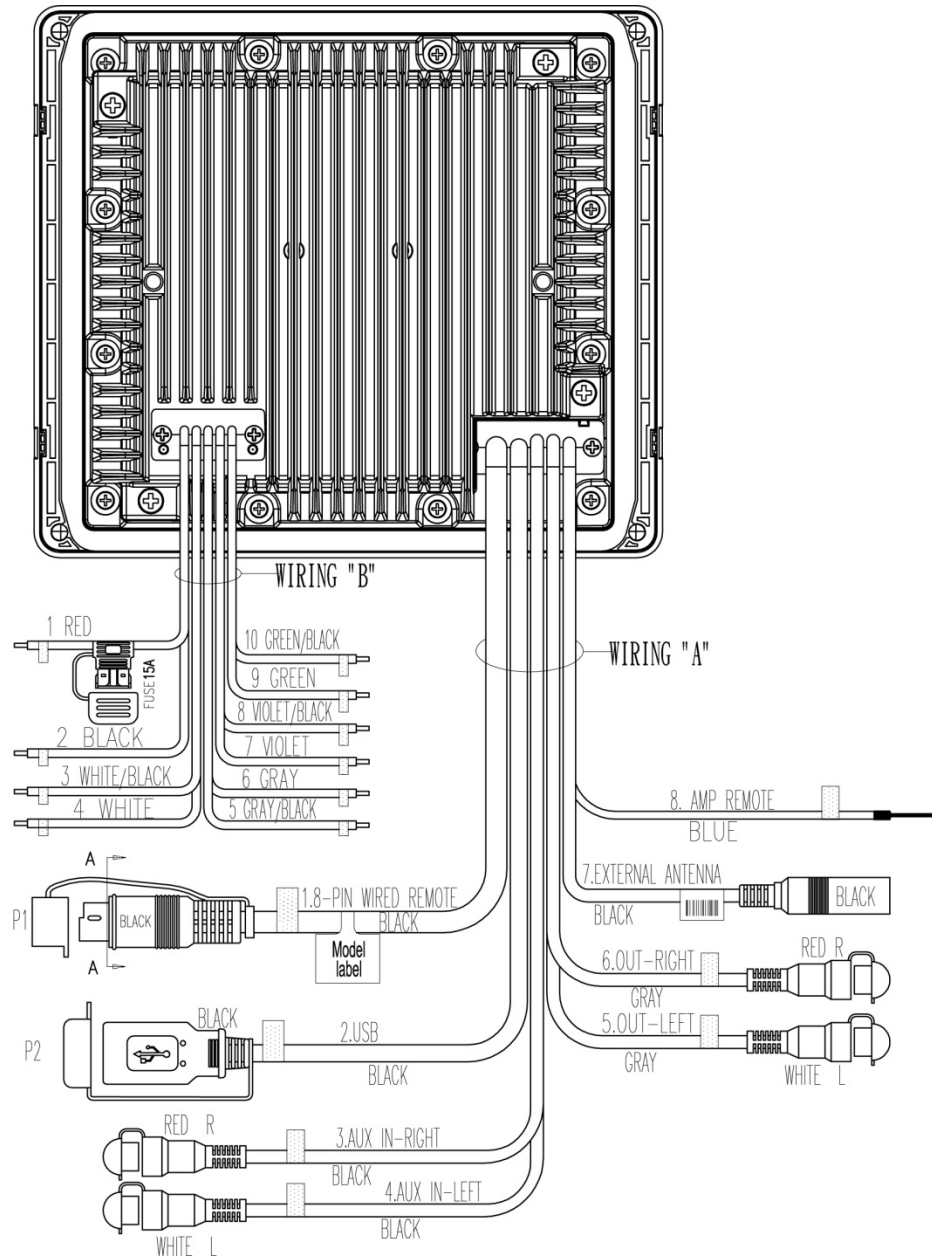
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**NOTE: Use only the M4 x 45mm length screws, included.**

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# WIRING



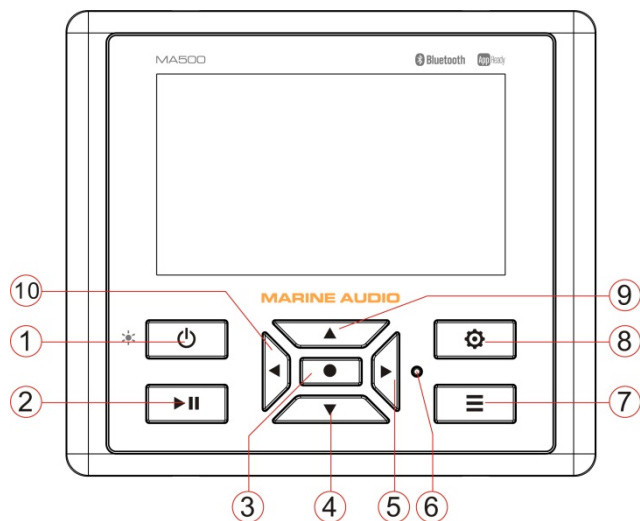
WIRING "A" DIAGRAM

NO.	WIRE COLOR	DESCRIPTION
1	BLACK	WIRED REMOTE
2	BLACK	USB PIGTAIL
3	BLACK	AUX IN-RIGHT
4	BLACK	AUX IN-LEFT
5	GRAY	LINE OUT-LEFT
6	GRAY	LINE OUT-RIGHT
7	BLACK	EXTERNAL ANTENNA
8	BLUE	AMP REMOTE

WIRING "B" DIAGRAM

NO.	WIRE COLOR	DESCRIPTION
1	RED	+12V DC SWITCHED
2	BLACK	GROUND
3	WHITE/BLACK	FRONT LEFT SPEAKER (-)
4	WHITE	FRONT LEFT SPEAKER (+)
5	GRAY/BLACK	FRONT RIGHT SPEAKER (-)
6	GRAY	FRONT RIGHT SPEAKER (+)
7	VIOLET	REAR RIGHT SPEAKER (+)
8	VIOLET/BLACK	REAR RIGHT SPEAKER (-)
9	GREEN	REAR LEFT SPEAKER (+)
10	GREEN/BLACK	REAR LEFT SPEAKER (-)

## BASIC OPERATION



### Power On/Off

Press the **Power** button (1) to turn the unit on or off.

### Volume Control

To increase the volume, press the ▲ button (9). To decrease the volume, press the ▼ button (4).

### Play/ Pause/ Mute

In AM, FM, Weather or Auxiliary mode, press the ►|| button (2) on the control panel to mute the audio output.

In USB or Bluetooth mode, press the ►|| button on the control panel to pause the audio output.

### MENU

Press the **Menu** button (7) on the control panel to enter the Source Menu. Then press ◀▶▲▼ buttons (10, 5, 4, 9) to select a different mode of operation, as indicated on the display panel.

Available modes include AM, FM, Weather, Bluetooth, USB (rear USB connector) and Auxiliary.

### Reset

The reset button (6) 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 similar object to press the **RESET** button (6). This may be necessary should the unit display an error code.

You can recover factory default settings using the function located in the system menu. Press the **Enter** button (3) to activate and press again to confirm.

### Audio Menu

Press the **Settings** button (8) on the control panel to access the Audio Settings. You can navigate through the Audio Settings items by pressing the ▲▼ buttons (9, 4). The unit will automatically exit the Audio Settings after five seconds of inactivity. The following menu items can be adjusted.

#### Loudness

Press the **Enter** button (3) to toggle loudness on/ off. When listening to music at low volumes, this feature will boost the bass and treble ranges.

#### Bass

Use the ◀▶ buttons (10, 5) to adjust the bass level range from “-7” to “+7”.

#### Treble

Use the ◀▶ buttons to adjust the treble level range from “-7” to “+7”.

#### Balance

Use the ◀▶ buttons to adjust the balance between the left and right speakers from “-12” to “+12”.

#### Fade

Use the ◀▶ buttons to adjust the fader between the rear and front speaker from “-12” to “+12”.

#### EQ

Use the ◀▶ buttons to select between four pre-defined bass and treble curves: Flat > Pop > Classic > Rock.

### System Menu

1. Press and hold the **Settings** button (8) for more than 2 seconds to enter the system menu.
2. Press the ▲▼ buttons (9, 4) repeatedly to navigate the system menu and select the desired item.
3. Press the **Enter** or ◀▶ buttons to adjust the selected menu item.
4. Press the **Settings** button (8) to return to the previous operation.

The following items can be adjusted:

- Bluetooth: Press the **Enter** button to see the Bluetooth options below.
  - Pair Device: Press the **Enter** button to pair a device.
  - Paired Device: View, lock and delete from a list of previously paired mobile device models.
- Illumination: Press the **Enter** button to see the Illumination options below.
  - Dimmer: Press the **Enter** button to turn the dimmer on/ off. When dimmer is **off**, the screen and buttons will be at full brightness. When dimmer is **on**, the screen and buttons will be at the set brightness settings.



- Display (1/10 – 10/10): Adjust TFT display brightness. The default display brightness is 5.
- Buttons (1/10 – 10/10): Adjust the buttons backlight brightness. The default buttons backlight brightness is 5.
- Contrast (1/10 – 10/10): The default Contrast level is 5.
- Startup Volume (0/40 – 40/40): Press the **Enter** button (3) to enter the Startup volume menu and press the ◀▶ button (10, 5) to adjust the Startup Volume. The startup volume functions as a maximum turn on volume. If you power down the unit at a volume level higher than this setting, when the unit is powered back on, it will revert to the Startup Volume level. The default Startup Volume is 20.
- Command Tones: Press the **Enter** button to enter the Command Tones menu. Press the **Enter** button again to toggle Command Tones on/ off.
- Low Battery Alert Configure: Press the **Enter** button to see the Low Battery Alert options below.
  - Status (On/ off): Monitor voltage on ACC line and send alert when voltage is low.
  - Auto Off (On/ off): Automatically turn off power to radio when battery voltage is low.
- Weather Alert Configure: Press the **Enter** button to see weather alert options.
  - Status (On/Off): Determines if the weather band alert feature is activated. Press the **Enter** button to turn the weather alert on/ off.
  - Level (0/40 – 40/40): Set default volume for weather alert broadcasts. The default volume level is 20.
- Tuning Region (USA/ Europe): Set frequency spacing for various regions.
- Firmware: Press the **Enter** button to view software version information such as MCU, Decode and Bluetooth.
- System Reset: Press the **Enter** button to enter the System Reset menu. Press the **Enter** button again to select "Initiate". Then select "Confirm" and press the **Enter** button to reset the unit into factory default settings.

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**NOTE: Pair Device and Paired Device options are only available while the Bluetooth feature is ON and the radio is in Bluetooth mode.**

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**NOTE: A locked Bluetooth device will not be overwritten from the list.**

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## Battery Alarm Operation

If Battery Alarm is set to "On", an alarm will sound (8 beeps every 30 sec) when the voltage drops to 10.5V (+/- 0.3V). A visual warning (Low Battery) will appear flashing (8 flashes every 30 sec) in the TFT display.

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**NOTE: "Off" is the default setting for Battery Alarm. If the audio is muted or the volume is set to 0, the audible beep will not be heard.**

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## Auxiliary Input

To access an auxiliary device:

1. Connect the portable audio player to the AUX IN cables routed from the rear of the radio.
2. Press the **Menu** button (7) to enter the Source Menu. Then press ◀▶▶▼ buttons (10, 5, 4, 9) to select "Auxiliary".
3. Press **Enter** button (3) to enter Auxiliary playback mode.

## Quick Exit Hot Key

In the following modes and conditions, press the **Menu** button (7) to quickly exit the current operation without waiting for the system default time out:

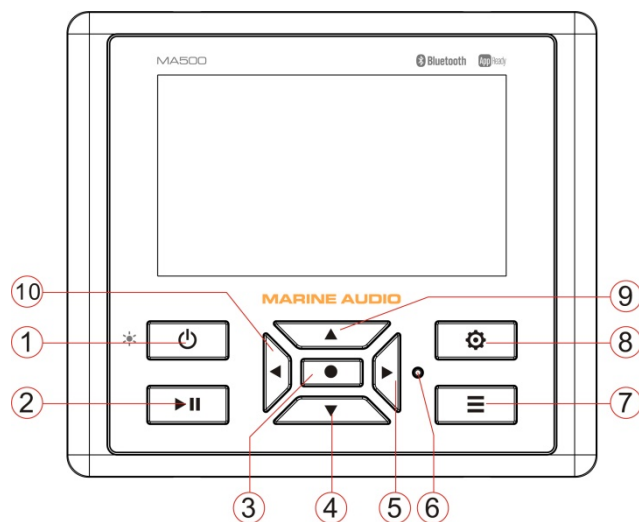
- System menu operation
- Searching mode
- Audio menu operation

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**NOTE: TFT 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 TFT may decrease slightly. The TFT display will return to normal when the temperature increases to a normal range.**

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## TUNER OPERATION



### Select a Band

1. Press the **Menu** button (7) to enter the Source Menu. Then press ◀▶▲▼ buttons (10, 5, 4, 9) to select AM/ FM and press **Enter** button (3) to enter AM or FM mode.
2. Press **Enter** button (3) to confirm entering AM or FM playback mode. TFT will display the current frequency.

### Manual Tuning

Press and hold the ◀▶ buttons (10, 5) to seek stations up/down step by step.

### Auto Seek Tuning

Press the ◀▶ buttons (13, 14) to automatically seek the next or previous strong station.

### Preset Stations

In AM or FM mode, *press and hold* the **Menu** button and then press the ▲▼ buttons (9, 4) to select the following menu options. Then press **Enter** button to enter the menu option

#### **Recall Presets**

Press the ▲▼ buttons to navigate the preset memory location. Press the **Enter** button to confirm playing that frequency.

#### **Save Presets**

Press the ▲▼ button to select the desired location to store the current station in the desired location. Then press the **Enter** button to confirm and save.

#### **Scan Presets**

Press the **Enter** button to scan stations stored in all bands. The unit will play for ten seconds at each preset station. Press **Enter** button again to stop scanning when the desired station is reached.

After each preset station is scanned through, the unit will automatically play the first preset station.

#### **Autosave Presets**

Press the **Enter** button to automatically search and store the stations, from the strongest signal to the weakest signal. When the storing is completed, the unit will play the first preset station.

Press **Enter** button to select the station manually..

## WEATHER BAND OPERATION

### Accessing the Weather Band

1. Press the **Menu** button (7) to enter the Source Menu. Then press ◀▶▲▼ buttons (10, 5, 4, 9) to select "Weather".
2. Press **Enter** button (3) to enter Weather Band mode. TFT displays the current frequency.
3. Press ◀▶ buttons (10, 5) to tune to the previous or next frequency. *Press and hold* ◀▶ buttons to fast forward or fast reverse.

### Recall Presets

*Press and hold* the **Menu** button and then press the ▲▼ buttons (9, 4) to select the preset stations. Then press **Enter** button to play that preset station.

#### ***What is the NOAA Weather Radio?***

NOAA 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 coastal 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: 162.400MHz (CH2), 162.425MHz (CH4), 162.450MHz (CH5), 162.475MHz (CH3), 162.500MHz (CH6), 162.525MHz (CH7) and 162.550MHz (CH1).

#### ***How many stations can I expect to receive?***

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

#### ***Is it possible I won't receive any stations?***

Depending on location, it's possible to receive a very weak signal or none at all. Also, similar to AM and FM signals, weather band signals are subject to surrounding conditions, weather, obstructions of the signal by hills or mountains, etc. If no NOAA signals are found, the tuner will scan all seven NOAA frequencies every 30 seconds.

#### ***NOAA Weather Alert***

The Weather Alert function adds an additional level of user safety by automatically switching from the current function mode to weather band mode for a minimum of 60 seconds if a NOAA warning tone (1050 Hz) is received. If no additional warning tone is received for 60 seconds, the unit will switch back to the last known function mode.

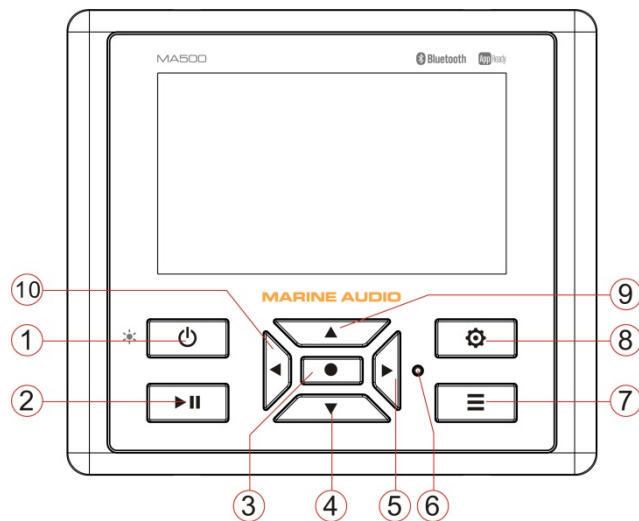
See "System Menu" on page 7 to know how to turn on or off the Weather Band Alert.

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***NOTE: If the unit is programmed for European operation, the WB function will be disabled.***

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## MP3/USB OPERATION



### MP3 Specifications

- A directory that does not include an MP3 file is skipped.
- Maximum number of folders: 512 (including skipped directories)
- Maximum number of folder levels: 12
- Maximum number of MP3 files: 999
- Maximum number of characters for MP3 file name and folder name: 32
- Sampling frequency: 16KHz, 22.05KHz, 24KHz, 32KHz, 44.1KHz, 48KHz.
- Bit rates: maximum 384 Kbps.
- Maximum number of Characters of ID3 Tag:
- ID3 Tag version 1.0: 32
- ID3 Tag version 2.x: 32

**NOTE: USB flash drives with a capacity of up to 64 GB are supported.**

### Inserting and Removing a USB Device

#### Inserting a USB Device

Insert the USB device into the USB connector routed from the rear of the radio and display will show the "Loading..." message. The unit will read the files on the USB device automatically.

#### Removing a USB Device

Press the **Menu** button (7) to select another mode and then remove the USB device from the USB connector.

**NOTE: After loading a USB device, files and folders are accessed in the order in which they were written to the device. Therefore, the playing order may not be the same as the order in which they are expected to be played.**

### Accessing USB Mode

1. Press the **Menu** button (7) to enter the Source Menu. Then press ◀▶▲▼ buttons (10, 5, 4, 9) to select "USB".
2. Press **Enter** button (3) to enter USB playback mode. If there is album art image for the MP3 song, it will be displayed on the left of TFT. Otherwise, a USB icon will be displayed.

### Controlling Playback

#### Pause/Play

During playback, press the ▶|| button (2) to suspend playback. The upper left corner on TFT will display a pause sign. Press the ▶|| button again to resume play.

#### Track Select

Press the ◀▶ buttons (10, 5) for less than one second to advance to the next file, or *press and hold* to fast forward or fast reverse. Playback begins when the button is released.

In the current mode, *press and hold* the **Menu** button and then use the ▲▼ buttons (9, 4) to select menu options below:

#### Browse

Press the **Enter** button to enter the folder directory. Use the ▲▼ buttons to navigate the folder list. Press the **Enter** button to select a folder. Use the ▲▼ buttons to navigate the file list. Press the **Enter** button again to move to the previous folder and begin playback of the first song in the folder.

#### Random

Press the **Enter** button to enter Status. Press the **Enter** button again to turn on or off random playback function.

#### Repeat

Press the **Enter** button to enter menu options:

- All: Press the **Enter** button again to repeat all songs. Press the **Enter** button a third time to resume normal playback.
- One: Press the **Enter** button again to repeat the current songs. Press the **Enter** button a third time to resume normal playback.

***Intro Scan***

Press the **Enter** button and select "All" to play the first 10 seconds of each file in the current device.

When the desired file is reached, press the **Enter** button again to end the scan and play the selected file.

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***NOTE: The USB connector of this unit supports the charging of Apple devices such as iPod, iPhone and iPad but does not support playback function.***

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## BLUETOOTH OPERATION

The MA500 includes built-in Bluetooth technology that allows you to wirelessly connect Bluetooth devices to this head unit for streaming audio playback.

### About Bluetooth Technology

Bluetooth is a short-range wireless radio technology. Operating in the 2.4 GHz frequency range, it transmits voice and data at speeds up to 2.1 Mbit/s over a range of *up to* 10 meters.

### Accessing Bluetooth Mode

**NOTE: Please note that some Bluetooth menu options are only available while the unit is in Bluetooth mode.**

1. Press the **Menu** button (7) to enter the Source Menu. Then press ◀▶▲▼ buttons (10, 5, 4, 9) to select "Bluetooth".
2. Press **Enter** button (3) to enter Bluetooth playback mode.
3. The TFT will display "No Device Connected" if the unit is not connected with a mobile device through Bluetooth. Press **Enter** button to connect the unit with the last connected Bluetooth device.



Press and hold the **Enter** button to enter Bluetooth quick pair. The TFT display will show a 120-second countdown.

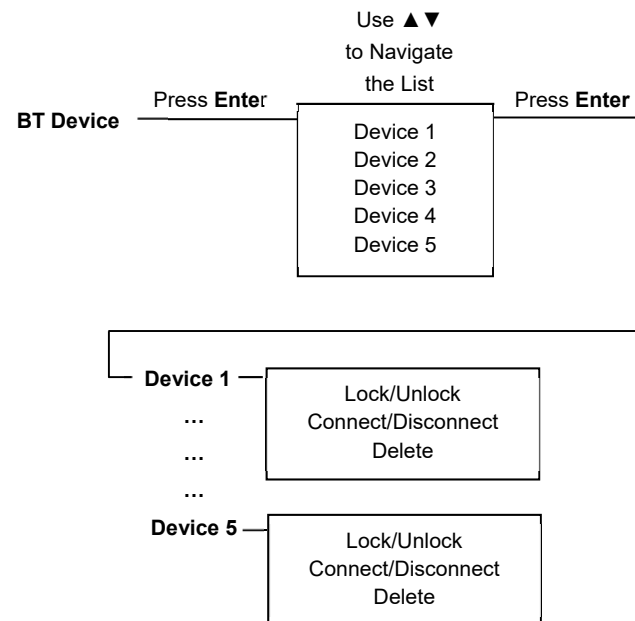
On your Bluetooth device, select **MA500** once it becomes available to pair and connect your device

### Pairing a Bluetooth Device

Press and hold the **Setting** button (8) to enter System Settings and then use the ▲▼ buttons (9, 4) to select "Bluetooth". Press the **Enter** button (3) to enter the selection.

1. Select "Pair Device". Press the **Enter** button to enter BT pairing. The TFT display will show a 120-second countdown. On your personal Bluetooth device, enter the Bluetooth settings list. Make sure your device has Bluetooth turned on and is searching for new devices. Select MA500 once it becomes available to pair and connect your device.
2. Select "Paired Device". Press the **Enter** button to view a list of previously paired mobile devices models. You cannot delete a device that is actively connected. Press the **Enter** button to select the device. Press the ▲▼ buttons (9, 4) to choose Lock/Unlock, Disconnect or Delete for this device.
  - **LOCK/UNLOCK:** The MA500 can store up to 5 devices for Bluetooth connection. The devices are stored in FIFO (First in First Out) order. To prevent a device from being bumped from the list when more than 5 devices are used, you must lock the device. To lock/Unlock a device, press the **Enter** button to choose Locked or

- Unlocked.
- **DISCONNECT:** To disconnect a paired device, press the **Enter** button to temporarily remove the Bluetooth link. The link can be re-established through your phone menu by selecting the MA500 for connection.
- **DELETE:** To delete a device from the list, press the **Enter** button. NOTE: Device must be disconnected to be deleted.



### Bluetooth Audio (A2DP)

The A2DP music is available for Bluetooth enabled phones when the phone is connected. If there is album art image for the MP3 song, it will be displayed on the left of TFT. Otherwise, a Bluetooth icon will be displayed. NOTE: Only IAP2 Apple devices are supported.

### Controlling Playback

#### Pause/Play

During playback, press the ▶|| button (2) to suspend playback. The upper left corner on TFT displays a pause sign. Press the ▶|| button again to resume play.

#### Track Select

Press the ◀▶ buttons (10, 5) for less than one second to advance to the next file, or *press and hold* to fast forward or fast reverse. Playback begins when the button is released.

In the current mode, *press and hold* the **Menu** button and then use the ▲▼ buttons (9, 4) to select Bluetooth Menu options below:

#### **Browse**

Press the **Enter** button (3) to enter the folder directory. Use the ▲▼ buttons to navigate the folder list. Press the **Enter** button to select a folder. Use the ▲▼ buttons to navigate the file list. Press the **Enter** button again to move to the previous folder and begin playback of the first song in the folder.

#### **Random**

Press the **Enter** button to enter Status. Press the **Enter** button again to turn on or off random playback function.

#### **Repeat**

Press the **Enter** button to enter menu options:

- All: Press the **Enter** button again to repeat all songs. Press the **Enter** button a third time to resume normal playback.
- One: Press the **Enter** button again to repeat the current songs. Press the **Enter** button a third time to resume normal playback.

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***NOTE: If a Bluetooth device is disconnected due to the power being turned off or if the device is disconnected inadvertently, the unit will automatically search for the matching Bluetooth device when the power is restored.***

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## APP OPERATION

MARINE AUDIO® Specialty Controller is the ultimate wireless remote control for your MARINE AUDIO stereo system. Store away your old remotes and enjoy the convenience of all the primary functions of your MARINE AUDIO stereo right from your phone or tablet by transforming your mobile device into a functional stereo remote control!

### Features

This app controls all of the primary functions of your stereo features including:

- Power on/off
- Volume and mute
- AM/FM radio tuner: access station, recall, store presets
- Bluetooth® streaming audio
- File structure visibility, track selection, track audible scan up and down via USB
- Auxiliary audio input control
- Audio menu controls- bass, treble, balance, fader, equalizer and volume
- Visual display feedback so you can see artist title and album on your mobile screen

### Connecting and using MARINE AUDIO app

After downloading and installing **MARINE AUDIO app** on your device, pair your device to the MA500 as stated above for Bluetooth pairing. Once your device is paired you can open the app and use with your MA500 radio.

When Marine Audio is installed on Android operating system, close the app before Bluetooth pairing, otherwise there may be errors on Bluetooth connection.

## 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 CB/A radio or 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 distance. 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 accessory switch is not on	If the power supply is properly connected to the vessel's accessory terminal, switch the ignition key to "ACC".
	Fuse is blown	Replace the fuse.
No sound	Volume too low	Adjust volume to audible level.
	Wiring is not properly connected	Check wiring connections.
The operation keys do not work	The built-in microprocessor is not operating properly due to noise	Press the reset button (6).
Cannot tune to radio station, auto-seek does not work	Antenna cable is not connected	Insert the antenna cable firmly.
	Signals are too weak.	Select a station manually.
Cannot connect or pair a Bluetooth Device	Another Bluetooth device is already connected to the radio	While in Bluetooth mode, press the <b>Enter</b> button to disconnect an already connected device. Then pair/ connect your device.



## SPECIFICATIONS

### **FM Radio**

Frequency Coverage (USA) . . . . .	87.5 to 107.9 MHz
Frequency Coverage (Europe) . . . . .	87.5 to 108 MHz
Sensitivity (S/N=30dB) . . . . .	4 $\mu$ V
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) . . . . .	30 dB

### **General**

Frequency band(s) (for Bluetooth) . . . . .	2.4~2.4835GHz
Maximum radio-frequency power transmitted (for Bluetooth) . . . . .	4 dBm
Operating Voltage . . . . .	DC 12 Volts
Grounding System . . . . .	Negative Ground
Speaker Impedance . . . . .	4 - 8 $\Omega$ (ohms) per channel
Tone Controls:	
Bass (at 100 Hz) . . . . .	$\pm$ 12 dB
Treble (at 10 kHz) . . . . .	$\pm$ 12 dB
Power Output . . . . .	22 W x 4
Fuse Rating . . . . .	15 Ampere (max.)
Chassis Dimensions . . . . .	125 (L) x 117 (W) x 94 (H)
Front Panel Dimensions . . . . .	148 (L) x 130 (W) x 11.4 (H)



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