GARMIN®

TREAD® AUDIO BOX WITH LED CONTROLLER
INSTALLATION INSTRUCTIONS

Important Safety Information

⚠ WARNING

Failure to follow these warnings and cautions could result in personal injury, damage to the vehicle, or poor product performance.

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

This device must be installed according to these instructions.

Disconnect the vehicle's power supply before beginning to install this product.

Before applying power to this product, make sure it has been correctly grounded, following the instructions in the guide.

Garmin® strongly recommends having an experienced installer with proper knowledge of electrical systems install the device. Incorrectly wiring the power cables can result in damage to the device, the vehicle, or the battery, and can cause bodily injury.

⚠ CAUTION

Always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

NOTICE

When drilling or cutting, always check what is on the opposite side of the surface to avoid damaging the vehicle.

You must read all installation instructions before beginning the installation.

Tools Needed
• Phillips screwdriver
• Electric drill

- Drill bit (the size varies based on the surface material and screws used)
- Crimping pliers
- Wire strippers
- Heat gun

Tread Audio Box Mounting Considerations

⚠ **CAUTION**

In high ambient temperatures and after extended use, the device enclosure may reach temperatures deemed dangerous to touch. Therefore, you must install the device in a location where it is not touched during operation.

NOTICE

The storage and operating temperature ranges for this device are listed in the product specifications (page 13). Extended exposure to temperatures exceeding the specified temperature range, in storage or operating conditions, may cause device failure. Device damage and related consequences caused by extended exposure to these conditions are not covered by the warranty.

- You must mount the device in a location with adequate ventilation where it is not exposed to extreme temperatures.
- You should mount the device so that the cables can be connected easily.
- To achieve IP67 water ingress protection and optimal heat sink cooling, you must mount the device on a vertical surface with the connectors pointing downward.
- You can mount the device on a horizontal surface, but such positioning might not achieve IPX67 water ingress protection.
- To avoid interference with a magnetic compass, you should install the device at least 203 mm (8 in.) away from a compass.

Mounting the Tread Audio Box Black Box Device
Before you mount the device, you must select a mounting location, and determine what screws and other mounting hardware are needed for the surface.
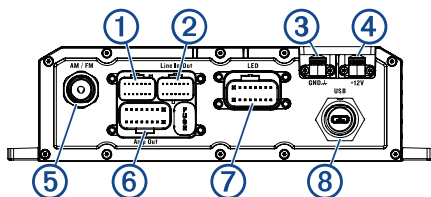
1 Place the black box device in the mounting location, and mark the location of the pilot holes.
2 Drill a pilot hole for one corner of the device.

3 Loosely fasten the device to the mounting surface with one corner, and examine the other three pilot-hole marks.

4 Mark new pilot-hole locations if necessary, and remove the device from the mounting surface.

5 Drill the remaining pilot holes.

6 Secure the device to the mounting location.
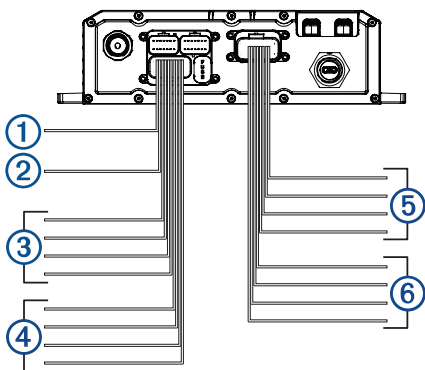
Connections

The stereo must be connected to power, to speakers, and to media input sources to function correctly. You should carefully plan the layout of the stereo, speakers, and your input sources before making any connections.

Port Identification

Item	Description
FUSE	Contains the 15 A fuse for the device.
①	Not used.
②	Connects the device to the auxiliary in and line/subwoofer out wiring harness.
③	Connects the device to the ground terminal wire (GND).
④	Connects the device to the +12V terminal wire.
⑤	Connects the device to the AM/FM antenna.
⑥	Connects the device to the speaker wiring harness.
⑦	Connects the device to the LED wiring harness.
⑧	Connects the device to an optional USB accessory.

Speaker and LED Wiring Harness Wire and Connector Identification

Wire Group	Wire Function	Wire Color/Number	Notes
①	Ignition	Red	Connects to the vehicle accessory line. If the ignition wire is unused, ground the ignition wire or leave it disconnected.
②	Amplifier on	Blue	Connects to an optional external amplifier to turn it on when the stereo turns on.
Speaker zone 1 ③	Left (+)	White	Connects to the included speaker.

Wire Group	Wire Function	Wire Color/ Number	Notes
	Left (-)	White with a black stripe	Connects to the included speaker.
	Right (+)	Gray	Connects to the included speaker.
	Right (-)	Gray with a black stripe	Connects to the included speaker.
Speaker zone 2 ④	Left (+)	Green	Connects to an optional additional speaker.
	Left (-)	Green with a black stripe	Connects to an optional additional speaker.
	Right (+)	Purple	Connects to an optional additional speaker.
	Right (-)	Purple with a black stripe	Connects to an optional additional speaker.
LED RGB1 ⑤	Power	Black	
	Red LED	Red	
	Green LED	Green	
	Blue LED	Blue	
LED RGB2 ⑥	Power	Black	
	Red LED	Red	
	Green LED	Green	

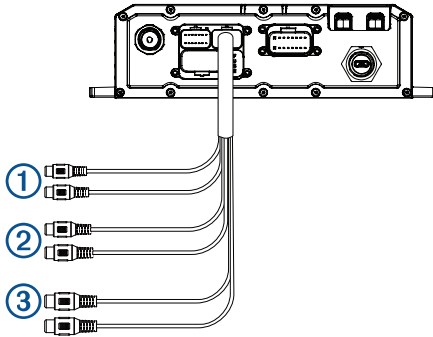| Wire Group	Wire Function	Wire Color/Number	Notes
	Blue LED	Blue	

Addressable LED Wiring Considerations

You can wire addressable LED lights to your Tread Audio Box. For more information, see the manual for your addressable LED lights.

Compatible addressable LED types:
- WS2812B
- WS2813

Addressable LED	LED Wire Color	Wire Function
Addressable LED 1	Red	+5V Power
	White	Ground
	Green with a black stripe	Data
Addressable LED 2	Red	+5V Power
	White	Ground
	Green with a black stripe	Data

RCA Wiring Harness Wire and Connector Identification

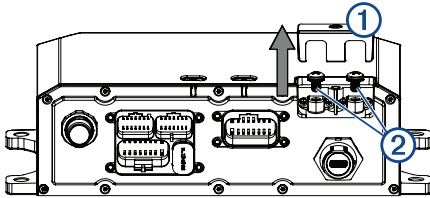| Wire Function	Wire Color/ Number	Notes
Auxiliary in left Auxiliary in right	①	Provides a red and white RCA stereo line input for audio sources, such as a CD or MP3 player.
Line out left Line out right	②	Provides a full-range output to an external amplifier, and is associated with the volume control. If you are connecting to an external amplifier, you should use a ground loop isolator to ensure a clear signal.
Subwoofer out	③	Provides a single mono output to a powered subwoofer or subwoofer amplifier. If you are connecting to an external amplifier, you should use a ground loop isolator to ensure a clear signal.

Connecting the Device to Vehicle Power
You should always confirm all electrical connections are secure and will not come loose while operating the device.
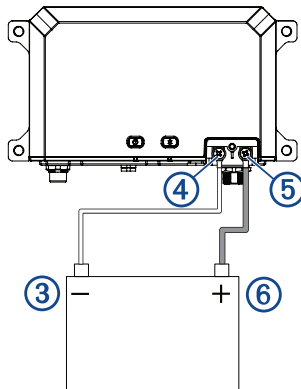
If the ignition wire is not used, do not tie the ignition to the positive terminal on the vehicle battery. Ground the ignition wire or leave it disconnected. Failure to ground or disconnect the ignition wire when the ignition is not used could prevent the device from powering on.

1 Remove the terminal cover ① using a Phillips screwdriver.

2 Remove the screws from the **GND** terminal and the **+12V** terminal ②.

3 Connect the large ring end of the included ground wire ③ to the negative terminal on the vehicle battery.

4 Connect the small ring end of the ground wire to the **GND** terminal ④ on the device.

5 Tighten the screw on the GND terminal.

You should confirm the screws cannot be loosened by hand.

6 Connect the small ring end of the included 12V cable to the **+12V** terminal ⑤ on the device.

7 Tighten the screw on the +12V terminal.

You should confirm the screws cannot be loosened by hand.

> **NOTICE**
> Do not overtighten the screw on the +12V terminal to prevent damage to the terminal.

8 Connect the large ring end of the 12V cable ⑥ to the positive terminal on the vehicle battery.

9 Replace and tighten the terminal cover on the device.
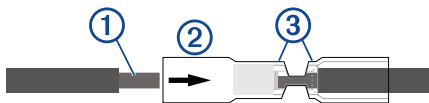
Using the Heat-Shrink Crimp Connectors

You should use the included heat-shrink crimp connectors to make a water-tight connection between the bare wires.

> **⚠ WARNING**
> Only use the heat gun to apply heat to the heat-shrink crimp connectors in a well-ventilated area. Do not use the heat gun near clothing or bare skin. Doing so can result in property damage or serious injury.

1 Using wire strippers, strip 6 mm ($^1/_4$ in.) off the end of each bare wire.

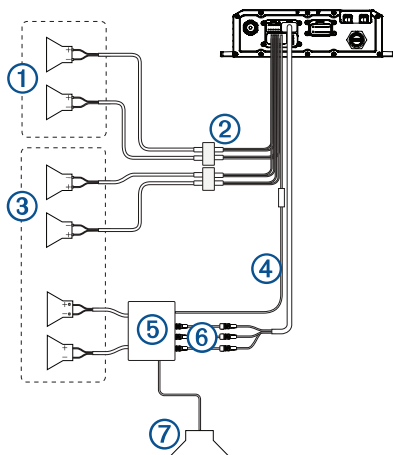**2** If necessary, twist the strands of each wire ① clockwise to bundle them together.

3 Insert one bare wire into one end of the heat-shrink crimp connector ②.

The bare wires are not secure until they are crimped and sealed.

4 Insert the corresponding bare wire into the other end of the heat-shrink crimp connector.

5 Using pliers, crimp both sides of the center of the connector ③ to secure the connection.

6 Using a heat gun, apply heat to the heat-shrink crimp connector until the connector is sealed to the wires.

Do not apply heat to the wires directly.

Complete System Wiring

This diagram illustrates a system installation with an external amplifier and subwoofer connected to the stereo using a line out.

NOTE: You can also connect speakers to the speaker wires for the internal stereo amplifier while using an external amplifier connected to the line out. Adjusting the volume affects speakers connected to the internal amplifier and speakers connected to the line out. This may result in uneven volume levels.

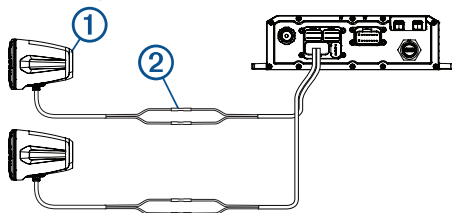| Item	Description
①	Zone 2 speakers
②	Water-tight connection
③	Zone 1 speakers
④	Amplifier-on signal wire
⑤	Powered amplifier
⑥	Line out and subwoofer out
⑦	Subwoofer

Speaker Zones

You can group speakers in one area into speaker zones. This enables you to control the audio level of the each zone individually.

Zones 1 and 2 are powered by the on-board amplifier. To use the RCA line output, you must connect an external amplifier.

You can set the balance, volume limit, tone, and name for each zone.

Single-Zone System Wiring Example

①	Speakers
②	Water-tight connection

Wireless Remote Mounting Considerations

NOTICE

Selecting the correct mounting location is critical to optimize the performance of the wireless remote.

- You must mount the wireless remote in a location that is within 10 m (33 ft.) of the stereo.
- You must mount the wireless remote in a location where it is not submerged.
- You should select a flat mounting surface for the best results.
- Move away from sources that can interfere with the wireless remote's operation. Sources of interference may include strong electromagnetic fields, some 2.4 GHz wireless sensors, high-voltage power lines, electric motors, and wireless LAN access points.
- You should install the wireless remote in a location where you can allow the adhesive to dry at room temperature for 72 hours.

Mounting the Wireless Remote

1 Select an appropriate location for the remote control (page 11).

2 Thoroughly clean and dry the mounting surface using a mixture of water and isopropyl alcohol.

The mounting surface must be free of dirt, debris, wax, or coatings.

3 Test the range at the selected location by holding the wireless remote at the location, pressing a few buttons, and confirming the correct operation.

4 Place the wireless remote on the mount, and rotate the remote until you hear a click.

5 Remove the backing from the adhesive.

6 Carefully orient the wireless remote in the mount with the Fusion® logo at the bottom.

7 Press the wireless remote in the mount firmly onto the mounting surface, maintaining pressure for at least 60 seconds.

Pairing with a Garmin Navigation Device

You can pair your Tread Audio Box device with a compatible Garmin navigation device.

1 Turn on power to your Tread Audio Box device, and place your compatible Garmin navigation device within 1 m (3.3 ft.) of it.

2 On your compatible navigation device, open the Tread Audio app.

3 Follow the on-screen instructions to complete the pairing and setup process.

Pairing with Your Smartphone

You can pair your Tread Audio Box device with your smartphone and the Tread app to enable music and LED controls.

1 From the app store on your smartphone, install the Tread app.

2 Turn on your Tread Audio Box device, and place your smartphone within 1 m (3.3 ft.) of your device.

3 On your smartphone, open the Tread app.

4 Follow the on-screen instructions to complete the pairing and setup process.

More Information

Garmin Support Center

Go to support.garmin.com for help and information, such as product manuals, frequently asked questions, videos, and customer support.

Getting the Owner's Manual

The owner's manual includes instructions for using device features and accessing regulatory information.

Go to **garmin.com/manuals/treadaudio**.

Device Information

Specifications

General	
Weight	997 g (2.2 lbs.)
Water resistance	IEC 60529 IPX7 (water), IEC 60529 IPX6 (dust)[1]
Operating temperature range	From -20 to 70°C (from -4 to 158°F)
Storage temperature range	From -40 to 85°C (from -40 to 185°F)
Input voltage	From 8 to 14.4 Vdc
Current (max.)	40 A
Current (muted)	less than 650 mA
ANT® wireless range	Up to 3 m (10 ft.)
Compass-safe distance	203 mm (8 in.)
Fuse	15 A mini-blade type
Bluetooth® wireless range	Up to 10 m (30 ft.)
Wireless frequencies/ protocols	Bluetooth 2.4 Ghz @ 10 dBm maximum ANT 2.4 GHz @ 7 dBm maximum

---

[1] The device withstands incidental exposure to water of up to 1 m for up to 30 min, and is protected against powerful jets of water. For more information, go to www.garmin.com /waterrating.

On-board, Class D Amplifier	
Output power per channel	4 x 100 W RMS at 14.4 Vdc input, 4 ohm, 10% THD[1]
Line output level (max.)	6.5 V (peak to peak)
Aux input level (typical)	1 V (RMS)

Tuner	
FM radio frequency range	87.5 to 107.9 MHz
FM frequency step	200 kHz
AM radio frequency range	530 to 1710 kHz
AM frequency step	10 kHz

---

[1] The stereo may limit the output power to prevent the amplifier from overheating, and to maintain the audio dynamics.