

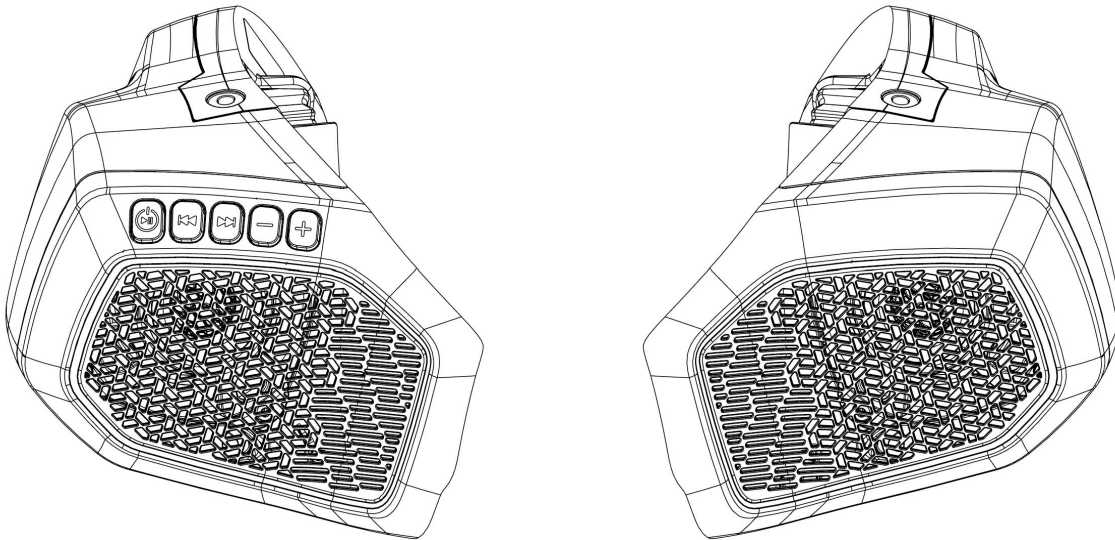
Bluetooth Audio System User's Manual

REVISION HISTORY

Rev	Section	Description	Date	By
01	All	Initial Release	May 12, 2026	Erik Larsen
02	All	Updated to reflect full system	May 22, 2026	Chris Glassman

Scope

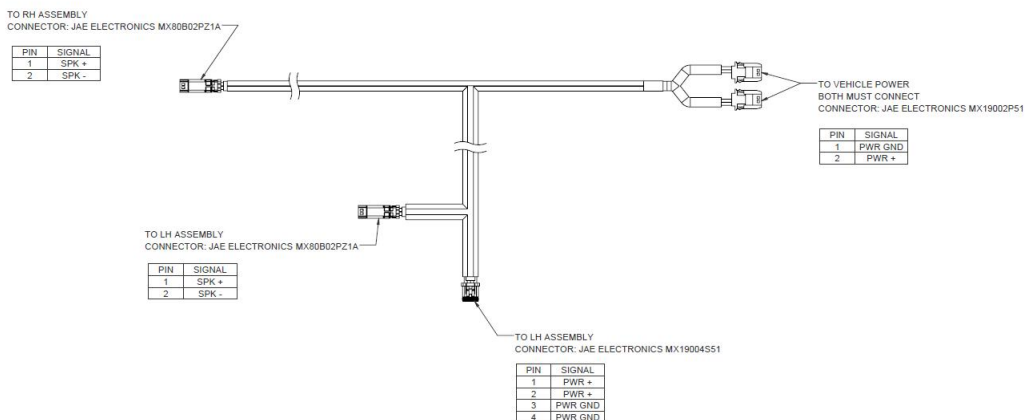
This document outlines the function of the Bluetooth Audio System. Only a qualified engineer or technician should follow the instructions provided in this document. This document is not intended to be used by the end user of this product.



System Specifications

- The Bluetooth Audio System is powered by the vehicle 12V power system.
- The system connects to a user's phone that is capable of Bluetooth 5.0
- The audio amplifier provides a maximum of 50W RMS x 2 channels
- Speakers consist of a 5" low-frequency driver and a tweeter per channel

Connectors



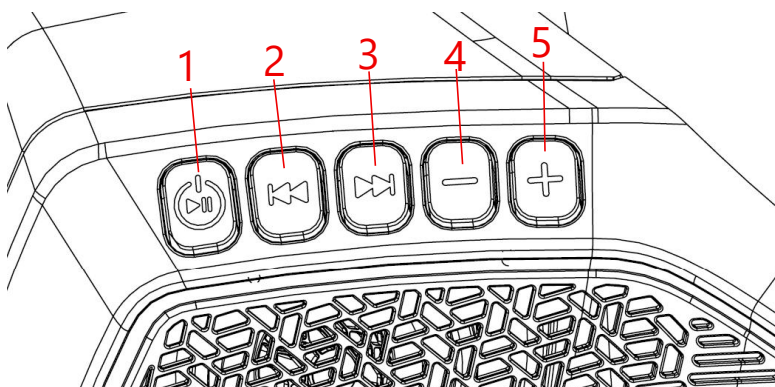
Electrical Specifications

- Audio input: Bluetooth only
- Bluetooth revision: 5.0
- Audio channels: 2
- Amplifier output power: 50W RMS maximum
- DC operating range: 7-17VDC
- Current draw: 10A peak

Bluetooth Audio System User Interface

The Bluetooth Audio System user interface includes:

1. 5 Buttons
2. 5 LEDs (one for each button)





Buttons will be used to control the Bluetooth Amplifier

LEDs will provide information about the status/state of the Bluetooth Amplifier

Button Positions				
1	2	3	4	5
Power/Play/Pause	Previous Track	Next Track	Volume Down	Volume Up

Key Press Functions

Keypad Layout and Functions			
Button Position	Functions		
	Short Press	Long Press	Combined Press
1	Play/Pause	2 seconds: Power ON 4 seconds: Power OFF	N/A
2	Skip Back	Fast Rewind	N/A
3	Skip Forward	Fast Forward	
4	Volume Down	2 seconds: 20% Volume	
5	Volume Up	2 seconds: 100% Volume	1 Second: Enter or Exit Pairing (pairing toggle) 6 seconds: Clear Paired Devices

User Interface Definition

Power ON	Power ON when vehicle power is supplied
	Power ON when button #1 is pressed down for 2 seconds
	Automatically sets the volume to 30% upon power ON
Power OFF	Power OFF when 14.4V is removed

	Enter standby mode when button #1 is pressed down for 4 seconds
	Automatically enter standby mode after 5 minutes if no devices are connected
Pairing	Enter pairing mode upon first power ON when there are no known paired devices
	Reconnect to the last connected device upon power ON
	Enter pairing mode if no device successfully connects within 30 seconds
	Exit pairing mode if no device connects within 2 minutes
Keypad Backlight	Backlight is ON when the unit is powered ON or in standby mode
	Backlight flashes rapidly (3 Hz) in pairing mode
Audible Tone	Audible tone shall confirm unit powering ON
	Double tone (low then high frequency (300/400Hz 150ms)) indicates successfully paired/connected device
	Double tone (constant frequency (500Hz 100ms) indicates 100% volume level reached. Audio playback is reduced to 85% volume when tone is playing
	Quadruple tone (high to low frequency (500/400/300/200Hz 50ms)) indicates paired devices have been deleted

Note:

This device complies with Part 15 of the FCC Rules [and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS standard(s)].

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 of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

CAN ICES-003 (B) / NMB-003 (B)

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 of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

"This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body."

"ce matériel est conforme aux limites d'exposition aux rayonnements rf de ic énoncés dans un autre environnement. ce matériel doit être installé et exploité à une distance minimale de 20 cm entre le radiateur et votre corps."

Warning

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Resolution 680 statement, below, must be placed in an easily visible place in the product, or in the user manual:

- Regulamento Anatel sobre equipamentos de Radiocomunicação de Radiação Restrita (Resolução nº 680): "Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados – Para maiores informações, consulte o site da Anatel – <https://www.gov.br/anatel/pt-br/>"