

## **Troubleshooting - EL Series Speakers**

### **EL-FL652OEMAMP 6.5" Spk,w/o grille,w/ LED,OEM,Amp 2+6P**

GARMIN PN: 010-02080-92

AVALON PN: 128908ARGB

### **EL-X651SPG Acc. EL-X651SPG, Fusion, 6.5" Sports Grille Grey**

GARMIN PN: 010-12789-10

AVALON PN: 128909

## **How To Test Fusion Speakers with a Digital Multimeter**

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When troubleshooting a speaker or subwoofer, resistance may need to be tested to check for shorts or connection issues with the speaker. This will require a multimeter.

1. Turn off to the Fusion system including power the stereo and any external amplifiers
2. Disconnect the speaker or subwoofer from the stereo or external amplifier
3. Set the digital multimeter to measure resistance, or  $\Omega$  Ohms
4. Touch the negative and positive probes directly to the speaker or subwoofer terminals
5. Allow the multimeter to read and settle on a steady reading

The result should be within range of the speaker or subwoofer specified resistance. For  $4\Omega$  speakers this would range between approximately  $3.4\Omega$  -  $4\Omega$ , for  $2\Omega$  speakers this would range between approximately  $1.7\Omega$  -  $2\Omega$ . If the reading is drastically outside of these ranges, or the digital multimeter reads an Open Line, that would indicate either a short (reading too low) or broken connection (reading too high) within the speaker or subwoofer. In either of these cases the speaker or subwoofer will need to be replaced.

## **No Audio from a Speaker or Subwoofer**

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When audio stops playing on a stereo system with an external amplifier, first check if the amplifier is going into critical fault (or protection) mode. On Fusion amplifiers, this is indicated by a red status light on the amplifier and the steps in [Fusion Amplifier Displaying a Red LED](#) should be followed.

If a speaker or subwoofer is producing no / very quiet or distorted audio, switch the channel that the speaker is connected to.

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**Example:** A pair of speakers on channel 1 works but a pair on channel 2 does not.

**Test:** Attach the pair of speakers on channel 2 to channel 1 and the pair from channel 1 to channel 2 to determine if the poor audio follows the speakers or the channel.

- If the poor audio follows the channel the speakers are connected to, the amplifier / stereo is next to test. If the poor audio follows the speakers then the speakers are faulty

If an amplifier is playing no / very quiet or distorted audio through one channel but is playing audio through another channel, switch where the zone line out from the stereo is connected.

**Example:** Zone 1 from the stereo is connected to channel 1 on the amplifier and zone 2 is connected to channel 2, and channel 2 is not playing audio but channel 1 is

**Test:** Switch zone 1 from the stereo to channel 2 and zone 2 to channel 1.

- If channel 1 plays no audio after switching, the line out from the stereo is next to test. If channel 2 continues to play no audio, it is a faulty channel on the amplifier

If the amplifier is determined to be the problem:

- Check that it is connected to the battery using a 4 gauge wire (if 10 feet or less from the battery) or 2 gauge wire (if 20 feet or less from the battery). It should be no more than 20 feet from the battery or lower than 2 gauge wire
- Check that it is getting at least 12 volts from the battery

If a stereo is playing no audio from a line out, switch the RCA cable extension connections.

**Example:** Zone 1 from the stereo is outputting audio but zone 2 is not

**Test:** Unplug the RCA extension from zone 2 and plug it into zone 1, and unplug the RCA extension from zone 1 and plug it into zone 2.

- If zone 1 stops playing audio but zone 2 starts, the RCA extension is faulty and should be replaced. If zone 2 continues to play no audio, the zone on the stereo is faulty

If the stereo is determined to be the problem:

- Check that the stereo's software is up to date according to [Updating a Fusion Stereo](#)
  - Check that the wires are seated firmly in the wiring harness of the stereo so that the pins are making contact with the pins on the back of the stereo
  - Check that the stereo is getting adequate power. At least 12 volts at the wiring harness going to the power wire and, if applicable, the ignition wire
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Once the problem is determined, obtain the exact model number, serial number, and a proof of purchase for the hardware in question and [contact Product Support](#) to discuss options.


## Troubleshooting the Fusion-Link App

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If the Fusion-Link app crashes on startup or during use, some steps can be taken to prevent it:

- Uninstall and reinstall the app to make sure it is up to date
- Check that the software on the smart device being used is up to date
- Update the Fusion stereo
  - See **Related Content** for more information
- Connect the smart device to the Fusion stereo before opening the Fusion-Link app
- If the internal memory of the smart device is nearly full, clear additional memory by transferring photos, music, or other data to another storage device

If the app still does not perform as expected, perform these steps if able and [contact Product Support](#):

1. Make note of exactly what is happening and when
2. Get a screenshot or take a picture of the stereo software by selecting **Settings > About**
3. In the Fusion-Link app select  **Settings > About** and take a screenshot
4. On the smart device being used select **Settings > General** (on Apple devices) **> About** and take screenshots

As problems with the Fusion-Link app are very uncommon, Product Support may ask for this information for testing purposes.

## Distorted or Crackling Sound from Speakers

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Burnt voice coils are the most common cause of crackling or distorted speaker sound. This is usually caused by exceeding a speaker's peak power rating. Check that the power output on any connected amplifier's channels are not too high for the peak power or, for best sound quality, the RMS of the speaker being used and that the gain on the amplifier is not set too high. Burnt voice coils can often be smelled, and can also be checked for by applying gentle pressure to the speaker cone to feel if the coil is rubbing or binding.

Check that all wires are secured and tightly connected. Improperly secured wires are prone to movement, causing shorts which can be the cause speaker distortion.

Speakers must be mounted on a flat surface. Mounting speakers to an uneven surface can cause the frames to bend or twist, resulting in restricted movement of the cone. This can cause permanent damage to the speaker.

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Lastly, if the speaker was held in place while the holes for the mounting bracket were drilled out, it is very likely that debris from the drilling has fallen into the speaker itself. This can get into the voice coil and cause permanent damage to the speaker.

## **Fusion Stereo Not Recognizing Smart Device Connected via USB**

If a Fusion stereo is not recognizing a smart device connected via USB for playing music, using the Fusion-Link app, or updating software:

- Check that the smart device is turned on
    - If the battery is drained on the smart device, it must charge enough to turn on before it will connect
  - Try a different USB cable to connect the devices
    - Some USB cables are sold only as charging cables and will not allow the smart device and stereo to transmit data
  - If possible, check that the stereo software is up to date
  - Check that software on the smart device is up to date
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