

Delta Speaker
Installation and Operation Manual
V3
April 25, 2017



Delta Speaker Installation Manual

1. Unpack the speaker

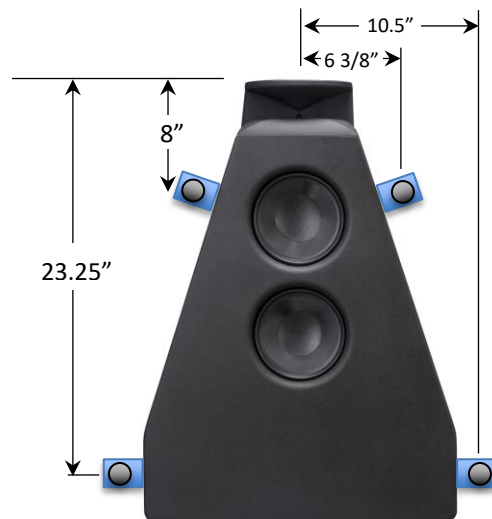
- a. Place shipping box flat, with model and serial number label at the top.
- b. Cut packing tape, open the carton, and remove the accessories that are packed into the top foam protection layer. These include the power cable, the four mounting brackets, and a pack of screws.
- c. Carefully remove the top layer of protection foam.
- d. Carefully remove the speaker from the carton. Do NOT pull it out by the waveguide
- e. Keep the box and packing material in case you need to ship it back for returns, maintenance or upgrades.

2. Prewire. Power, Signal, and Control network should be prewired to each Delta speaker

- a. Power: The Delta is an active speaker with built-in signal processing and amplification. It requires about 600 Watts of available AC power in the range from 100V to 250V. We recommend prewiring one 120V-20A circuit, or a 220 / 240V – 15A for each group of three Delta speakers, with either a quad box near the three speakers, or a duplex near each speaker.
- b. Audio Signal: The Delta takes Analog Balanced audio signal over twisted pair with braided shield XLR cable. It is best to prewire for it. An “RCA” unbalanced signal can also be fed to the Delta, ideally through a balancing transformer as close to the source as possible. Jensen Transformer makes very good balance adapter transform units. Note that even for unbalanced analog audio sources it is best to use a twisted pair with shield cable. See the connection section below for termination recommendations. It is also possible to use Cat5 or Cat 6 cabling to feed a balanced signal to the Delta, using XLR connectors at the speaker end. A few manufacturers, including MuxLab (model 500028) and Audio Control (BLD-10) make unbalanced to Cat5 converters which can be used for unbalanced feeds (see Appendix 2). There may be residual noise interference in environments with a lot of radio frequency noise. Contact Grimani Systems Technical Support for further details.
- c. Control signal: The Delta is controlled and monitored through a USB interface. Using a USB to Cat5 converter, you can prewire with either Cat5, Cat5e, Cat6, Cat6a cabling from a central location to the speaker, and add the converter unit at the speaker location. Terminate the Cat5 cables at a patch panel at the equipment rack or other room location accessible during calibration. In all cases prewire using Keystone punch-down connectors at wall plates or rackmount locations at the rack and speaker locations. Test the connection using a certification meter to assure quality of connection and bandwidth. The last interface should be accomplished with factory terminated and certified patch cables.

3. Mounting Bracket. The Delta is designed to be installed on a wall, using the supplied the four supplied hanging bracket. For placement behind acoustically transparent screens, paint the brackets flat black before installation in order to control light refelctions.

- a. Place the speakers correctly in the room. Set the speaker position on the wall based on several factors: Position spread relative to the listener; position relative the screen edge or center; boundary reflection conditions. Set the height such that the middle of the waveguide is 6 inches above seated ear height, or at the middle of the screen. Grimani Systems Technical Support can assist with determining the best position upon request.
- b. The wall fastener location of the top pair of brackets will be 8 inches (203 mm) below the top of the waveguide, and 6-3/8" inches (162 mm) from the center of the speaker. See diagram below.
- c. The wall fastener location of the bottom pair of brackets will be 23.25 inches (591 mm) below the top of the waveguide, and 10.5 inches (267mm) from the center of the speaker. See diagram below.
- d. Install the four vibration isolation L brackets on the speaker, using the supplied screws (#6 x 1/2"). Do not overtighten the screws in order to avoid stripping them.
- e. Mark four wall hole locations for the mounting bracket, based on a. and b. above. Use the bracket as a template, and make sure that it is vertical by using a bubble level.
- f. Choose appropriate fasteners. The Delta weighs 35 lbs (16kg), so each fastener will need to be rated for 9 pounds (4kg) each. For sheetrock walls, we suggest using EZAnchors and their associated screws. For Concrete walls, we suggest using good quality wall anchors and screws. For plywood surfaces, wood screws in a size 8 (4mm) and above will work well.
- g. Holding the speaker from the wood cabinet (NOT the waveguide), pick it up and hold it in place while driving the four screws through the large bracket hole into the wall. Make sure that the speaker is properly centered.
- h. Speaker aiming: The speaker can be aimed up or down by adding a shim behind the top or bottom brackets.

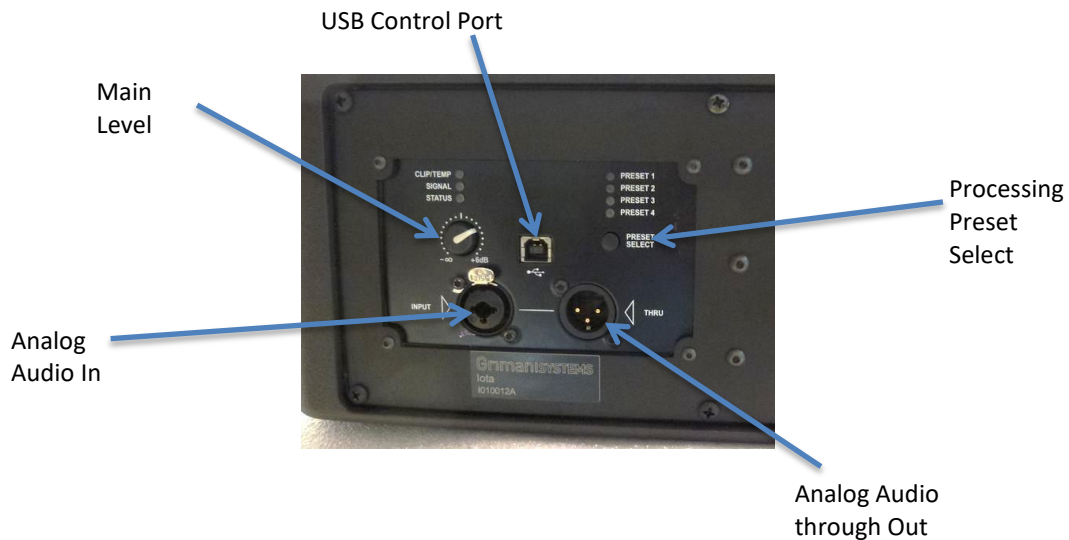


4. Connections

- a. Power: The Delta ships with a 9 foot (2.75m) long locking detachable IEC power cable. The receptacle is on the connector plate at the bottom of the speaker. Plug the cable there, then to the mains outlet. To remove the ICE cable from the speaker, pull back the red locking pin before easing out the plug. After powering up the speaker, it will go through a few seconds of start-up sequence. There is no standby switch.



- b. Audio signal. Plug in the audio feed:

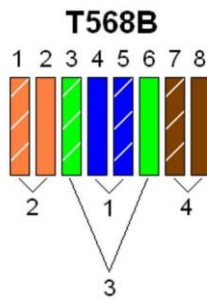


- - For Analog balanced over twisted pair cable with shield, terminate the cable to a male XLR plug, using Pin 2 for +, Pin3 for -, and Pin 1 for ground/shield. Connect the XLR plug into the XLR Analog female input, labeled (INPUT). See Appendix 1.
- For Analog unbalanced sources, it is also best to pre-wire with twisted pair with shield. On the source side, use a balancing transformer (either passive or active). If a balancing transformer isn't available, connect the + signal to the + wire (usually Red) of the pair, and connect the source ground to the - wire (usually Black) of the pair. On the speaker side, terminate the cable with a male XLR plug, with Pin 2 for the + wire, Pin3 for - wire, and Pin 1 for the shield of the wire (See Appendix 1). If you used regular coaxial wire, from the source, terminate the wire to a Male XLR plug with Pin 2 for the + wire, Pin3 and Pin 1 for the shield of the wire. If there is a hum loop, try disconnecting Pin 1 on the XLR plug. If the coaxial wire is already terminated with and RCA connector, you can use a female-to-male XLR converter plug.

You can also use Cat5 cable with a balancing converter unit such as the MuxLabs 500028, as shown in Appendix 2, or the Audio Control BLD-10.

c. Control signal:

- The Delta is controlled and monitored through a USB interface (see 2.c above.). Assuming that you prewired to a wall-mounted or rack-mounted keystone punch-down RJ45 receptacle, connect a premade factory-terminated and certified patch cable, to the Cat5 to USB adapter, and plug this to the speaker. Tie back the USB cable with a zip tie in order to prevent it from falling off. If you didn't prewire to a punch-down receptacle, carefully terminate the network cable with a male RJ45, using EIA T568B standard, and ensure proper connection and strain relief. Test the connection with a certification tester to ensure proper connectivity.



- d. The Delta has an analog audio through output on a male XLR in order to feed another speaker

5. Settings

- a. AC Voltage is automatically set for a range from 100V AC to 250V AC. There is nothing to set.
- b. EQ preset. The Delta ships with a response curve that is voiced for the most typically neutral voicing in-room. This is mostly flat anechoic response for both the axial and sound power frequency response. This is stored into Presets 1 through 4. After installation, you can equalize and voice each speaker to match the room, and store one or more EQ curves in one of the four presets. You can switch between the presets by pressing the preset button on the connector plate at the bottom of the speaker.
- c. Input Volume. Set the volume knob to middle detent gain (0dB).
- d. DSP programming. The Delta speaker includes a DSP engine with 5 bands of response tailoring, plus several other signal processing functions. These are programmed through a computer application, and requires advanced control by a factor trained professional. Contact Grimani Systems for DSP programming and system calibration services.

6. Remote Monitoring

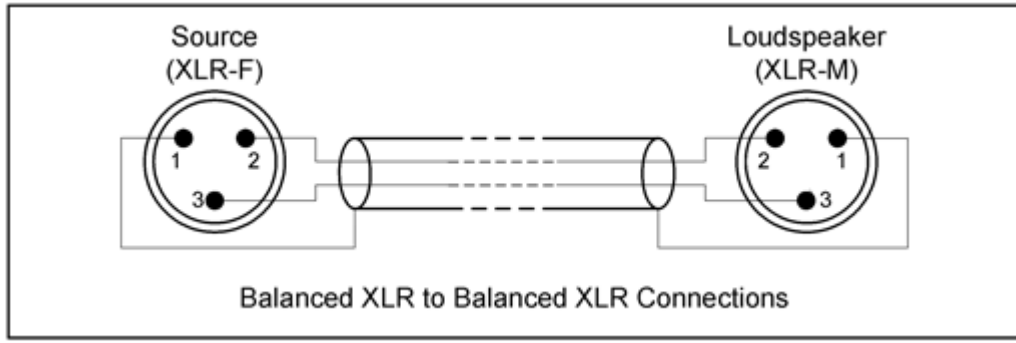
The Delta speaker can be tested and verified from a remote location. You will need to dedicate a small Windows computer to be left enabled on an internet connection. It will need to run the Grimani Systems Armonia control application as well as a remote desktop application. Both of these can be set up by a Grimani Systems factory technician.

7. Limited Warranty

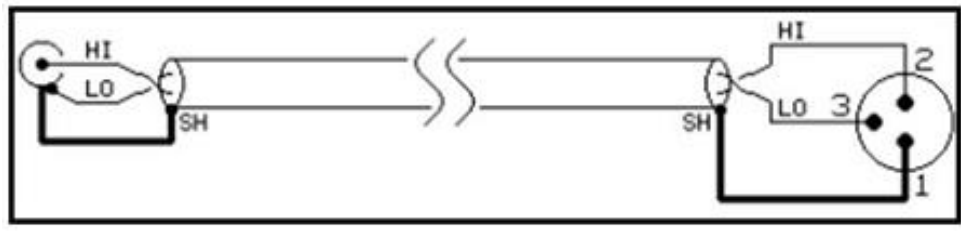
The Delta is warranted to be free of manufacturing defects for a period of two years from the date of purchase. This limited warranty does not apply to failures due to misuse, excessive sound pressure, damage from handling and carriage, or any other defects that are outside the control of Grimani Systems, LLC. Any warranty claim will need to be made directly with Grimani Systems, or through one of its authorized dealers. An RMA number will need to be issued before any return is authorized.

Appendix 1

Balanced Analog Wire connection



Unbalanced to Balanced Analog Wire connection



Appendix 2

MuxLab 500028 Wiring Diagram

For use in driving unbalanced signals to XLR inputs of speakers

One Balun can be used to drive two speakers

