

**Alpha Speaker**  
**Installation and Operation Manual**  
V2  
April 26, 2017



## Alpha Speaker Installation Manual

### 1. **Unpack the speaker**

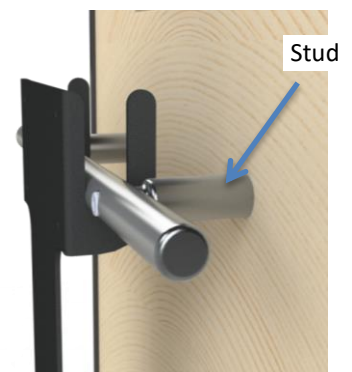
- a. Place shipping box upright, with UP arrow pointing up.
- b. Cut packing tape and slide the top half of the shipping carton up over the speaker.
- c. Carefully lay the bottom carton and speaker on the floor, and remove the speaker from the bottom carton.
- d. Look for mounting bracket and cable bag in the bottom carton.
- 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 Network should be prewired to each Alpha speaker**

- a. **Power:** The Alpha is an active speaker with built-in signal processing and amplification. It requires about 1500 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 Alpha speakers, with either a quad box near the three speakers, or a duplex near each speaker.
- b. **Audio Signal:** The Alpha can take three types of audio signals. AES/IP over Cat5 cable; AES over 110 Ohm twisted pair with shield XLR cable; Analog Balanced over twisted pair with shield XLR cable. Choose which type of signal interface you plan to use, and prewire for it. If in doubt, wire a Cat5 or Cat 6 cable to punchdown “Keystone” connectors, and an audio twisted pair with braided shield both to locations near the speaker. 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.
- c. **Network signal:** The Alpha is controlled and monitored through IP networking. You can prewire with either Cat5, Cat5e, Cat6, Cat6a standards. In all cases prewire using “Keystone” punchdown connectors at wall plates or rackmount locations near the source and the speaker, using EIA T568B standard. 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, such as the ones supplied with the speakers. Note that if you are choosing to feed the speakers with AES/IP over Cat5, through the Grimani Systems DAI1 interface unit, you will use only one connection for digital audio and network.

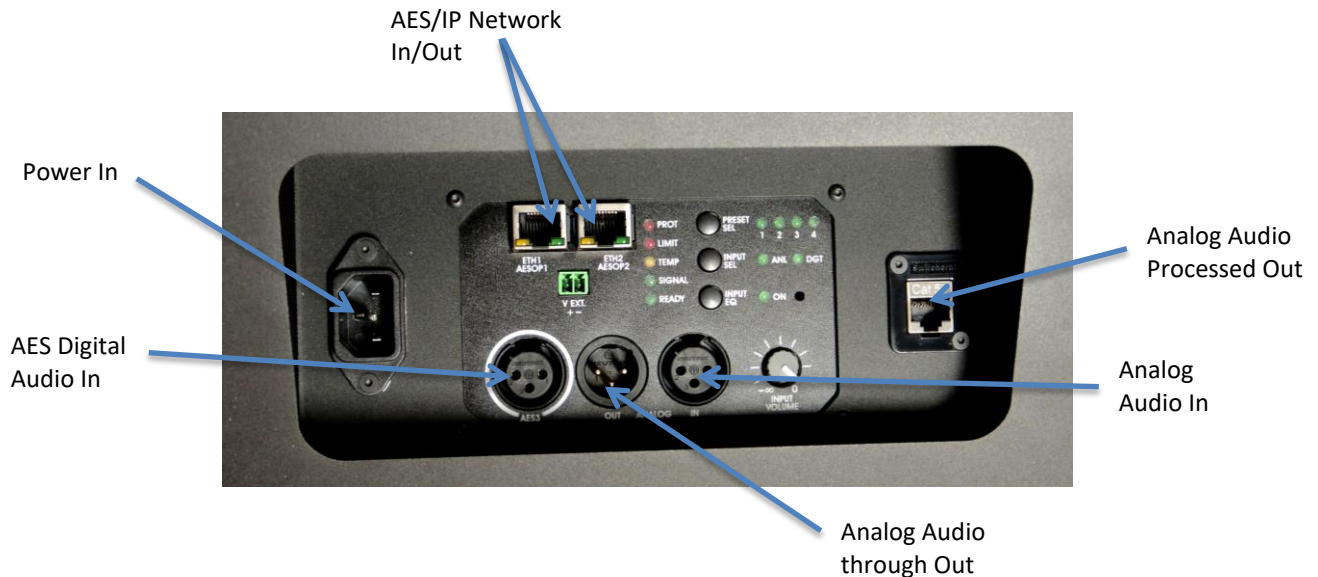
### 3. **Mounting Bracket.** The Alpha is designed to be installed on a wall, using the supplied hanging bracket.

- 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 top of the bracket plate will be 20 5/8” inches (524mm) below the top of the waveguide.



- c. Mark four hole locations for the mounting bracket, based on a. and b. above. Use the bracket as a template, and make sure that it is straight and plumb by using a bubble level.
- d. Choose appropriate fasteners. The Alpha weighs 65 lbs (32kg), and each fastener will need to be rated for 30 pounds (15kg) each, to account for vibration. 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 10 (6mm) and above will work well.
- e. Holding the speaker from the top bar and the top lip of the woofer tunnel, pick it up and carefully place the two bars into the slots of the hanging bracket. Make sure that the speaker is centered and that the fingers of the hanging brackets are straight.
- f. Speaker aiming: The speaker can be aimed up or down by selecting the right length of stud between the hanging bars and the speaker back panel (see picture above). Alphas are typically shipped with a smallest stud at the bottom, and the next size up at the top, for a down angle of 5 degrees, which matches most installation requirements. You can custom-order the speaker angle setting, or you can change the studs to adapt to the installation conditions. Contact Grimani Systems to order the studs.

#### 4. Connections

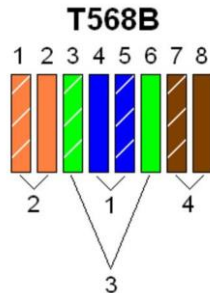


- a. Power: The Alpha ships with a 9 foot (2.7m) long locking detachable IEC power cable. The receptacle is on the connector plate at the bottom of the speaker. Plug the cable there, then to the mains outlet. To remove the ICE cable from the speaker, pull back the red locking pin before easing out the 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 AES-IP over Cat5 cable into either of the two network ports, labeled “ETH – AESOP”.
  - For AES 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 (See Appendix 1). Connect the XLR plug into the AES input, labeled (LABEL). It is the female one with a white ring around it. Note that Cat5 cables can be used to transmit AES digital audio signals with good success. Be sure to use one same-colored pair per speaker 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 (See Appendix 1). Connect the XLR plug into the Analog input, labeled (LABEL). It is the female one without a ring around it.
  - For Analog unbalanced sources, it is best to pre-wire with twisted pair with shield. On the source side, 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. Network signal:

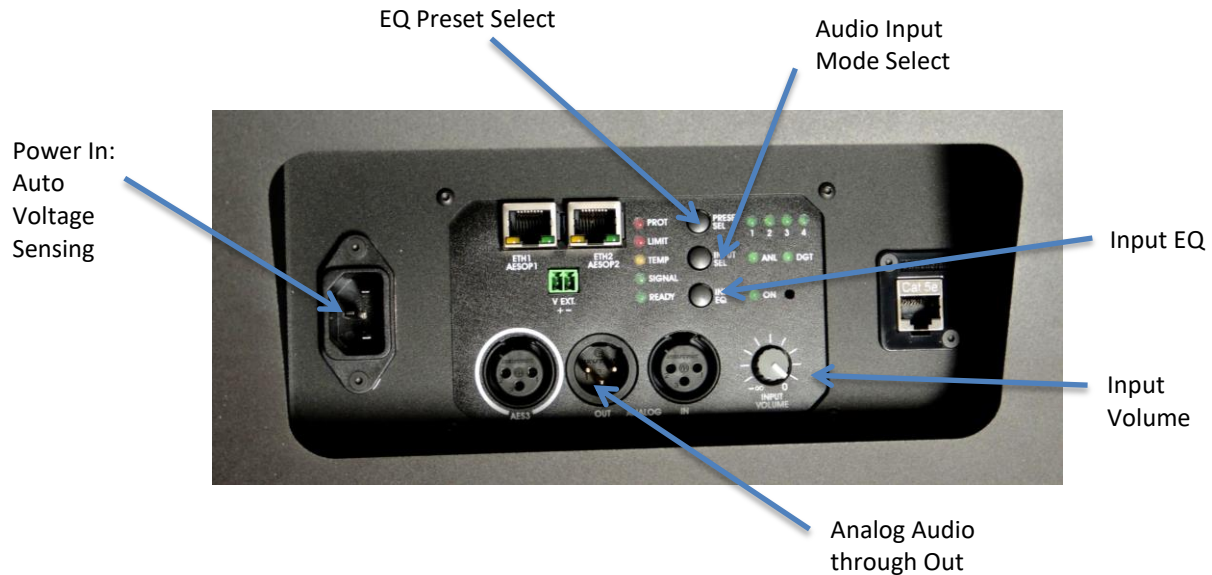
- If you use the audio AES/IP over Cat5, through the Grimani Systems DAI1 interface unit, you will use only one connection for digital audio and network. No need for a further network connection. Assuming that you prewired to a wall-mounted or rack-mounted keystone punch-down RJ45 receptacle, connect a premade factory-terminated and certified patch cable, such as the one supplied with the speaker, into either of the two network ports, labeled “ETH – AESOP”. 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. If you use either the digital audio AES over twisted pair audio signal, or the analog audio signal, you will connect the network feed into either of the two network ports, labeled “ETH – AESOP”.
- e. The other network port can be used as network switch output to another networked product.
- f. The Alpha has an analog audio output over Cat5 that is fed out of the #4 signal processing chain of the DSP unit. It can be full-bandwidth to feed another speaker, low-pass-filtered to feed a subwoofer, or whatever other processing is required and programmed into the DSP unit. Connection patch cables are available through Grimani Systems Technical Support. If you wish to terminate these yourself, the connection is as follows:
  - Terminate a Cat5, Cat5e, or Cat6 cable to an RJ45 male plug, carefully ensuring that the insulation and wires are properly punched through.
  - Terminate the other side of the CatX cable, using Brown for +, and Brown with White stripe for -. If terminating to XLR, use + for Pin 2, and – for Pin 3. There is no shield drain.

## 5. Settings



- a. AC Voltage is automatically set for a range from 100V AC to 250V AC. There is nothing to set.
- b. Audio Input Mode Select. The Alpha is shipped in the following default mode: XLR/IP over Cat5 with Analog backup. There is no need to change the input setting if you are going to use either of these two inputs. If you want to use the AES over twisted pair into the XLR input, you can switch the input mode by pressing the input button on the connector plate at the bottom of the speaker. Monitor the status by looking at the XXX LEDs.
- c. EQ preset. The Alpha 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 Preset 1. Preset 2 is the same as Preset 1 with 3dB more High frequency energy. Preset 3 is the same as Preset 1 with 3dB less High frequency energy. You can switch between the presets by pressing the preset button on the connector plate at the bottom of the speaker.
- d. Input Volume. Set the volume knob to maximum gain.
- e. Input EQ. Set to ON.
- f. DSP programming. The Alpha speaker includes a DSP engine with more than 60 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**

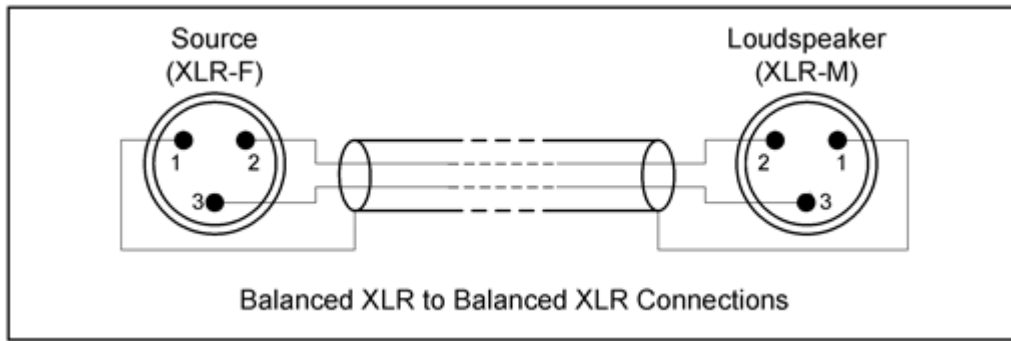
The alpha speaker can be programmed for automated self-diagnostics and remote warnings. Typical auto-test and reporting functions include Power Status, Signal voltage limits, Temperature, Mounting angle, and many more. Any failure, or performance that falls outside of specified limits, will result in emails sent to several programmed addresses, indicating the nature of the failure. The speaker can also be tested and verified from a remote location. For both of these functions you will need to dedicate a small Windows computer to be left enabled on the same network as the speaker. 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**

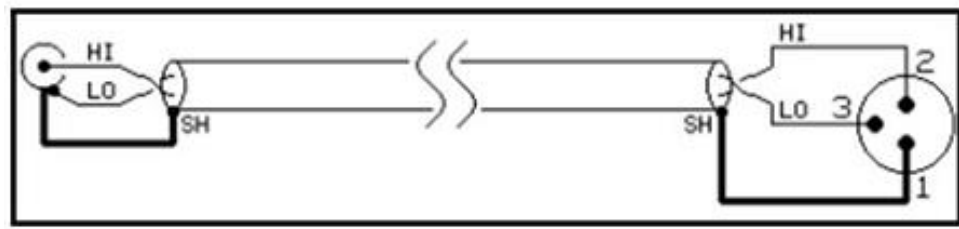
The Alpha is warrantied to be free of manufacturing defects for a period of two years from the date of purchase. This limited warranty does not apply to failures due to misuse, excessive sound pressure, damage from handling and carriage, or any other defects that are outside the control of Grimani Systems, 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 XLR 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

