



Z Series High Definition Acoustical System



Z Series

Owner's Manual

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Introduction

The Z Series is a multi-zone speech privacy system that also supports background music and paging applications. Model Z2-B is a two-zone speech privacy system providing 40-watts of total amplification and model Z4-B is four-zone speech privacy system delivering up to 80-watts of amplification.

The Z Series is an all-in-one solution that not only supplies high quality speech privacy, but also can deliver high quality background music and paging. Mic / line and music inputs each have a five-band equalizer and Hi and Lo pass filters to assure maximum performance. Music inputs incorporate either analog stereo summed inputs or Bluetooth® streaming. For paging applications, the Z Series incorporates a unique hi-Q feedback filter specifically tailored to the vocal frequency range. Output limiters are in the audio chain to protect against system overdrive.

Advanced features of the Z Series include separate analog masking generators per zone, 14-day system commissioning ramp per zone, and PC project design software allows system custom project files to meet installation needs.

For conference room applications where secure speech privacy is required, the Z Series features a Speech Privacy Enhancement mode that can be engaged while a meeting is in progress. Enhanced Privacy mode applies additional acoustical energy to the surrounding environment, increasing the privacy levels for the conference room occupants. These unique secured speech filters have been approved and implemented in many installations around the world including military and government facilities. Activation of the Speech Privacy Enhancement feature is accomplished via hardwired switch, an iOS® or Android® application, or using an optional wireless desktop / wall mount switch. An optional wired or wireless sign is available for a visual aid to notify attendees when Enhanced Privacy Mode is active.

Key Features

- Includes Internal, High Efficiency 70.7V Transformer (Cannot be Bypassed for 8Ω Operation)
- Amplified Masking Controller
- 2 Speech Privacy Zones (Model Z2-B)
- 4 Speech Privacy Zones (Model Z4-B)
- 20-Watt 70V Output per Zone
- Out of Box Operational, Featuring AtlasIED Custom Presets
- Enhanced Privacy Mode with Wired and Wireless Signs Available
- Selectable Mic / Line Input for Paging or Recorded Messaging
- 3.5mm Stereo Summed Auxiliary Input for Background Music
- Bluetooth® Streaming for Background Music
- PC Software to Create and Save Custom Project Files
- System Commissioning Ramp on Each Zone
- iOS® and Android® App for System Tuning and Control
- Wireless Speech Enhancement Activation Switch and Sign

Applications

AtlasIED has been developing, manufacturing, assisting and commissioning sound masking systems for over forty years using proprietary Chanaud masking filters. The Z Series includes a multitude of features enabling it to conform to most design requirements but remains intuitive enough for simple operation and quick installation. The Z Series is designed to be aesthetically pleasing for office or conference room applications seamlessly blending in to a variety of decors. Z Series placement is flexible allowing for mounting on a surface, in the wall, or in an equipment rack. The Z2-B model delivers quality audio and speech privacy in spaces up to 7000 sq ft with two-zones of control flexibility. The Z4-B model features four-zones of audio with total potential sound masking coverage of up to 14,000 sq ft. This compact integrated solution features out of the box selectable system configuration presets that are accessible through the front panel display and navigation keys. The combination of these features makes for a simple but effective speech privacy and audio control solution.

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Package Contents

- Z2 or Z4 Unit, Qty 1
- External 100V – 240V to 24DCV UL Power Supply, Qty 1. Z2 = 2.5A, Z4 = 5.0A
- Input Connectors and Speaker Connectors
- Z Series Installation Sheet

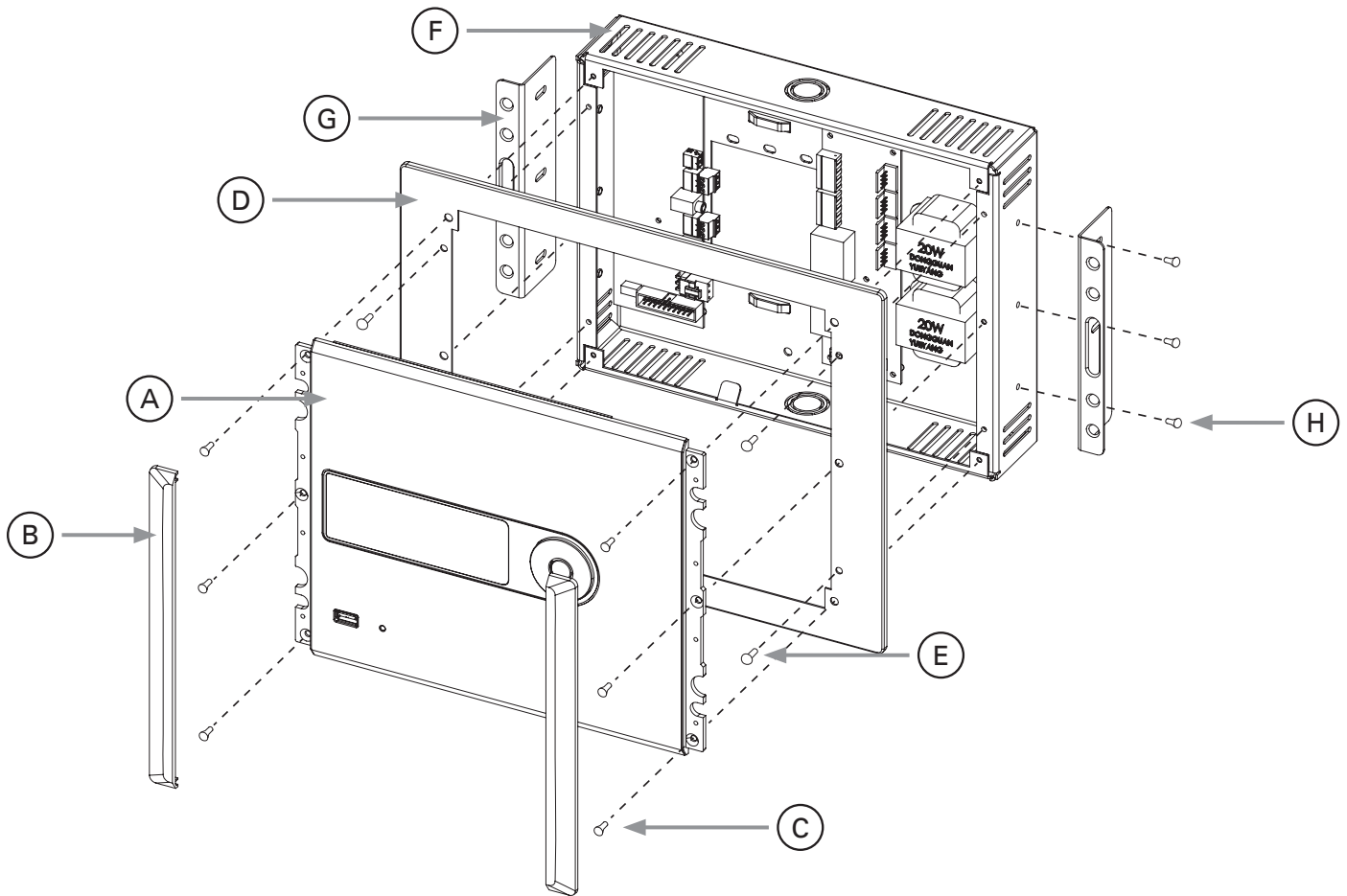


Fig 1

- A. Control Panel
- B. Control Panel Dress End Caps
- C. Control Panel Mounting Screws M3 x 10mm, Qty 6
- D. Dress Ring
- E. Dress Ring Screws M3 x 5.7mm, Qty 4
- F. I/O Backbox
- G. In-Wall Support Brackets, Qty 2
- H. In-Wall Support Bracket Screws M3 x 5.7mm, Qty 6

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Opening the Z Series

1. Remove the two Control Panel Dress End Caps. These End Caps are held by magnets with guide pins for alignment. They need to be lifted away from the panel. See Figure 2.
2. Remove the six Control Panel mounting screws.
3. Carefully tilt back the Control Panel to access the I/O Backbox. The Control Panel and I/O Backbox are connected via harness as seen in Figure 4.

Note: Remove the harness connectors from the Control Panel and leave the cables connected to the I/O Backbox.

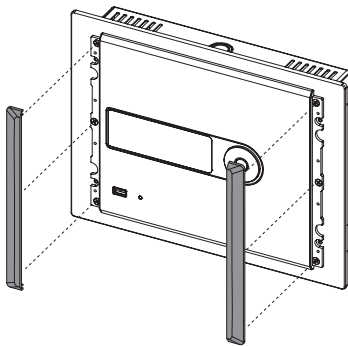


Fig 2

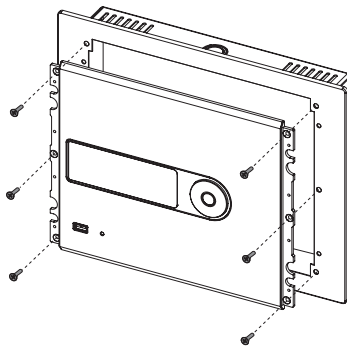


Fig 3

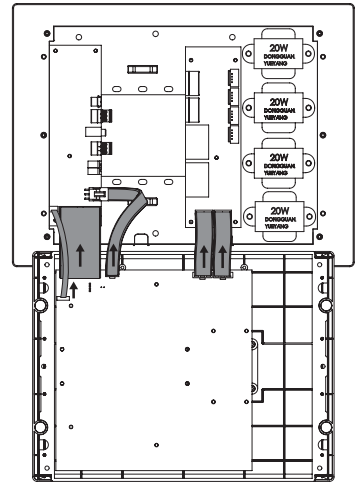


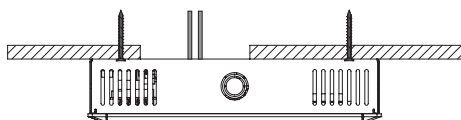
Fig 4

Mounting the Z Series

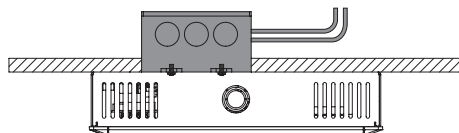
The Z Series can be surface mounted, in-wall flush mounted, or rack mounted. Before mounting the Z Series, there are several factors to take into consideration. Select the best area for wiring infrastructure such as speaker wire, AC mains power, paging cable and background audio source cables. Placement of the Z Series is also critical when using the Bluetooth® audio streaming feature. The Z Series should be placed within 50ft of the paired audio source. Powering the Z Series requires use of the included external power supply. It is suggested to place the Z Series within 6ft of a 120V AC outlet. If this is not possible, the power supply wire for the 24VDC output can be extended up to 50ft. **Note:** This does not void the warranty as it is the low voltage wire that is being extended. **Note:** Pay attention to the DCV polarity when reconnecting the removable Phoenix connector.

Wire Routing

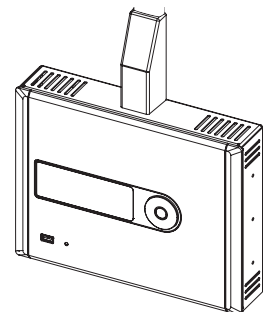
The I/O Backbox wall mounting can be secured by applying screws to a surface, in-wall, or to a 2-gang electrical box. Wiring into the Z Series can be done via rear 2-gang opening of the I/O Backbox or via electrical conduit $\frac{3}{4}$ " and $\frac{1}{2}$ ". Knockouts are located on the top and bottom of the I/O Backbox. For wiring the Inputs and Outputs see "Wiring the Z Series I/O Backbox".



Wire Entering From Rear



Wire Entering Electrical Box



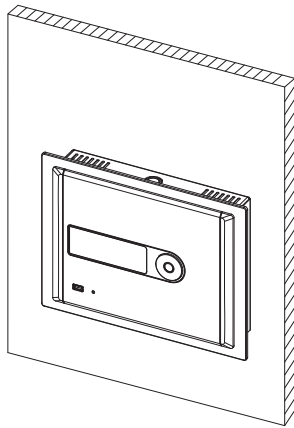
Wire Entering Top Conduit

Z Series

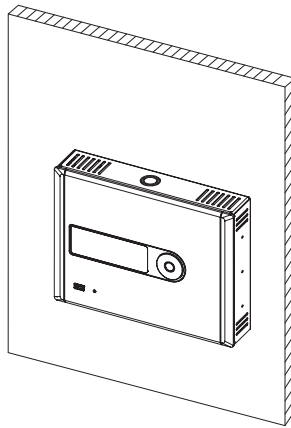
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Surface Mount - Direct to Wall

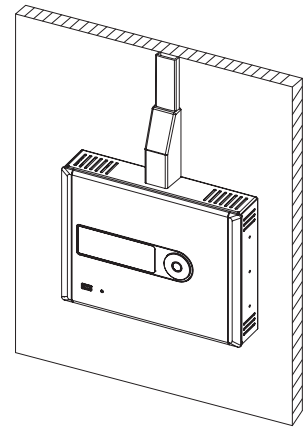
1. Determine the use of the Dress Ring and the wiring routing options. **Note:** The I/O Backbox Dress Ring and Side Support brackets can be left assembled or they can be removed.
2. Remove the front Control Panel from the I/O Backbox. The Dress Ring can be left on if preferred. Be careful removing the cables from the Control Panel PCB.
3. Secure the I/O Backbox to the wall or electrical box.
4. Wire the I/O Backbox. See "Wiring the Z Series I/O Backbox" for details.
5. After the I/O Backbox is wired, re-install the front panel (carefully plug in cable connectors, fold closed, and fasten 6 screws) and apply the two magnetic end caps. **Note:** Do not force close or damage may occur. Realign the wires if necessary for smooth panel closure.



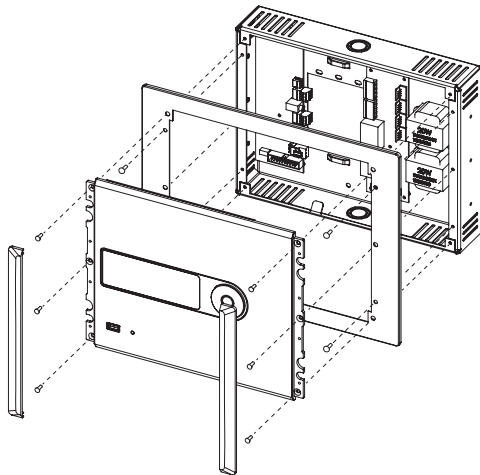
Surface Mount
with Dress Ring



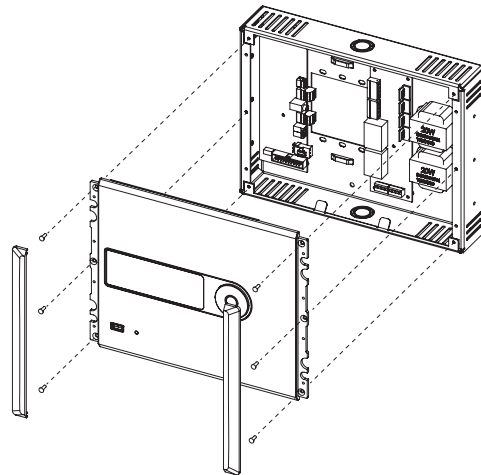
Surface Mount
without Dress Ring



Surface Mount
without Dress Ring, Top Conduit Wired



Surface Mount
Assembly View with Dress Ring



Surface Mount
Assembly View without Dress Ring

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In-Wall Mount

1. Cut a hole in the wall (8.27"H x 10.83" W). Make sure the hole has at least 2" of rear clearance. **Note:** Aligning one side over a stud is the easiest and most secure method. See Figure 13.
2. Remove the front Control Panel from the I/O Backbox. Be careful removing the cables from the Control Panel PCB.
3. Remove the Dress Ring from the I/O Backbox to allow access to the side mounted wall mount brackets.
4. Temporarily fit the Z Series into the wall cut-out and adjust the side brackets so the front of the I/O Backbox sits flush to the finished wall.
5. On the opposite side of the stud, use an EZ Anchor or add a small backing block (wood) to screw into. **Note:** The center of the wall mount bracket has an opening large enough to allow a drywall screw to hold the wood backing block in place while mounting.
6. After mounting in-wall, re-fasten the Dress Ring to the front of the I/O Backbox.
7. Wire the I/O Backbox. See "Wiring the Z Series I/O Backbox" for details.
8. After the I/O Backbox is wired, re-install the front panel (carefully plug in cable connectors, fold closed, and fasten 6 screws) and apply the two magnetic end caps. **Note:** Do not force closed or damage may occur. Realign the wires if necessary for smooth panel closure.

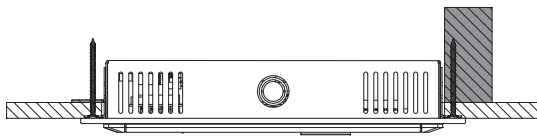


Fig 13

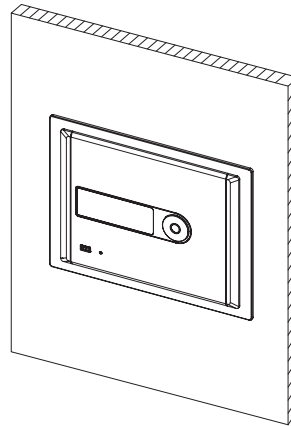
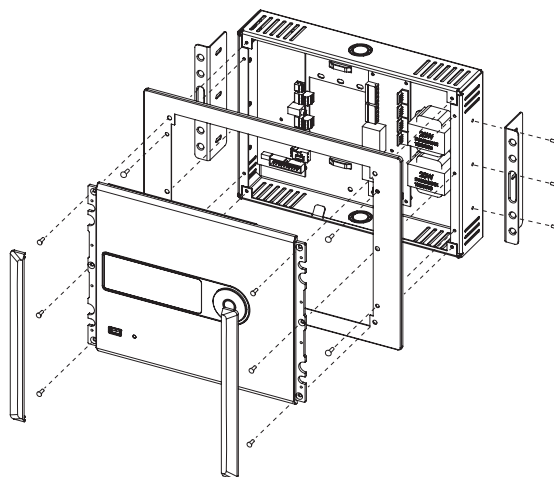


Fig 14



In-Wall Mount
Assembly View with Dress Ring

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Rack Mount

1. The Rack Mount Kit is not supplied with the Z Series. The ZSERIES-RMK can be ordered at atlasied.com.
2. Remove the front Control Panel from the I/O Backbox. Be careful removing the cables from the Control Panel PCB.
3. Remove the Dress Ring and the two side mounted wall mount brackets from the I/O Backbox. The Rack Mount Plate replaces the Dress Ring.
4. Install the Rack Mount Plate onto the I/O Backbox using the same screws and screw locations used with the Dress Ring.
5. Mount the rack panel into a 19" rack.
6. Wire the I/O Backbox. See "Wiring the Z Series I/O Backbox" for details.
7. After the I/O Backbox is wired, re-install the front panel (carefully plug in cable connectors, fold closed, and fasten 6 screws) and apply the two magnetic end caps. **Note:** Do not force closed or damage may occur. Realign the wires if necessary for smooth panel closure.

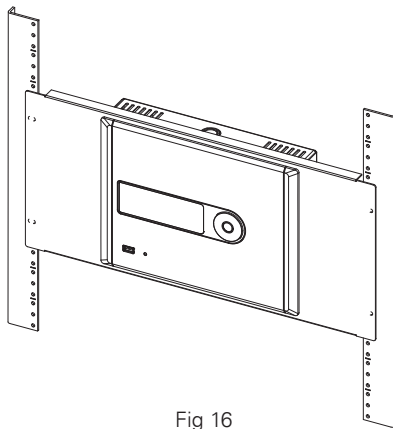
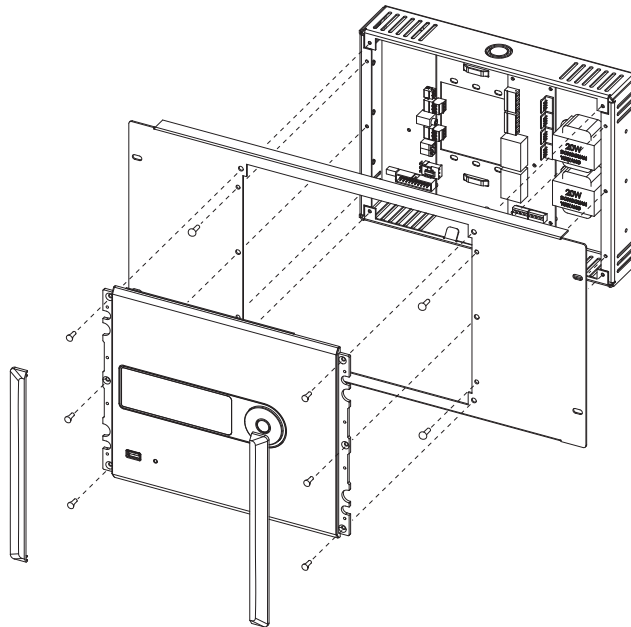


Fig 16



Rack Mount
Assembly View

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Wiring the Z Series I/O Backbox

Before wiring the I/O Backbox, decide on the installation application required for the Z Series. There are a variety of application guides available at atlasied.com. This guide covers the Input and Output connections. Refer to Figure 18 for a visual aid.

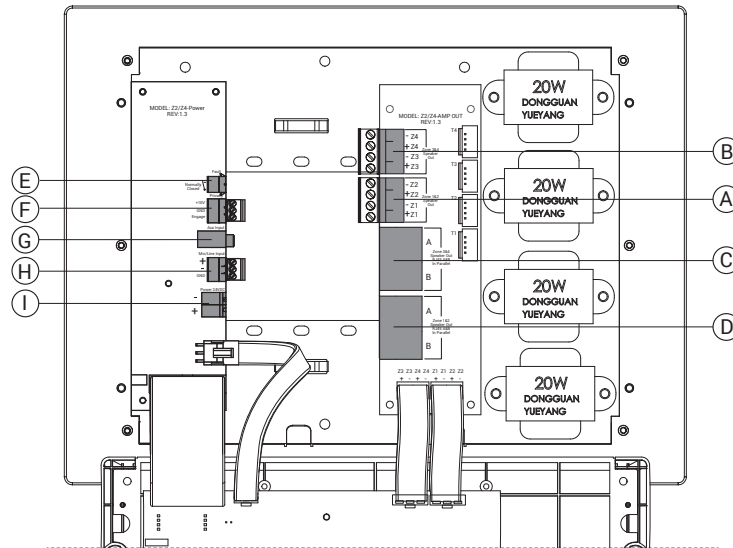


Fig 18

- A. Zone 1 & 2 Euro Block Speaker Terminals - Connect 70V speakers to this 5.08mm pitch Euro Block terminal. Pay attention to the Zone and the speaker polarity.
- B. Zone 3 & 4 Euro Block Speaker Terminals (Z4 Only) - Connect 70V speakers to this 5.08mm pitch Euro Block terminal. Pay attention to the Zone and the speaker polarity.
- C. These terminals will be used for future products. Do not use.
- D. These terminals will be used for future products. Do not use.
- E. Fault Reporting Port - This 2 position 3.5mm pitch Euro Block terminal is a relay that is normally closed during normal operation and opens when the Z Series has a fault condition that requires service.
- F. Speech Privacy Enhancement Control Port - This control port is used to remotely activate the Privacy Enhancement feature and to power the optional wired "Enhanced Privacy In Use" sign. When the "G" & "Engage" are shorted together a series of events happens.
 - The front panel display will read "Enhanced Privacy".
 - The Masking Level will change to the user preset Privacy level. Factory default is +6dB. This can be changed in the navigation menu.
 - The port named "To LED" will supply a +10V DCV 100mA voltage to power a indicator sign.
- Note:** See the application guide on how to use the Privacy Enhancement feature.
- G. AUX 3.5mm (Music) Input - This receptacle accepts a 3.5mm stereo plug. The Left and Right inputs are actively stereo summed to form a mono signal. This signal can be routed to any Zone via the front panel navigation controls. The Input sensitivity can be adjusted via the navigation controls from 316mV – 1V. Factory default is 775mV.
- H. Mic / Line (Paging) Input - This 3-position 3.5mm Euro Block connector is for Balanced Line or Mic level sources. Mic or Line, Gain and Phantom power can be selected in the Paging section of the navigation controls menu. Unbalanced line inputs can be inserted with proper wire configuration by connecting the (G) and (-) terminals together.
- I. DC Power Input - The Z2 comes with a global 24VDC 2.5A external power supply. The Z4 comes with a global 24VDC 5A external power supply. The power supply is equipped with a 2-position 5.08mm connector that mates to this DC Power input socket.

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Z Series Front Panel, Menu Display and Navigation Controls

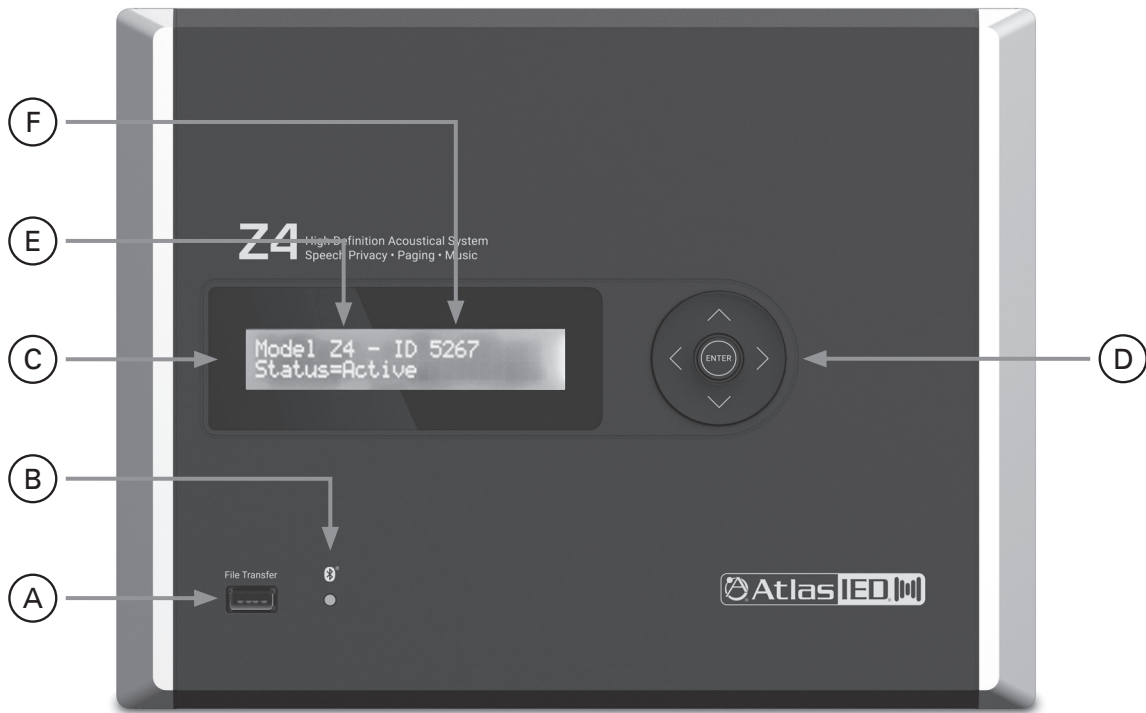


Fig 20

- A. USB File Transfer Port - The port is used for uploading or downloading a project file. It is also used for updating firmware. To update the firmware refer to the "Updating the Firmware" section.
- B. Bluetooth® Streaming Music Status Indicator
- C. Display Menu
- D. Navigation Keys
 - (>) = Navigate Right direction in the menu
 - (<) = Navigate Left direction in the menu
 - (^) = Navigate Up direction in the menu
 - (v) = Navigate Down direction in the menu
 - (Enter) = Power On / Off and Save command
- E. Model Number
- F. Unit ID Number - This number is unique to each specific unit. It is used to identify the unit if there are more than one of same model types within the range of the App or Wireless "Enhanced Privacy In Use". The App will list all devices within range of the BLE® or UHF and will help to identify the device you want the App to connect to.

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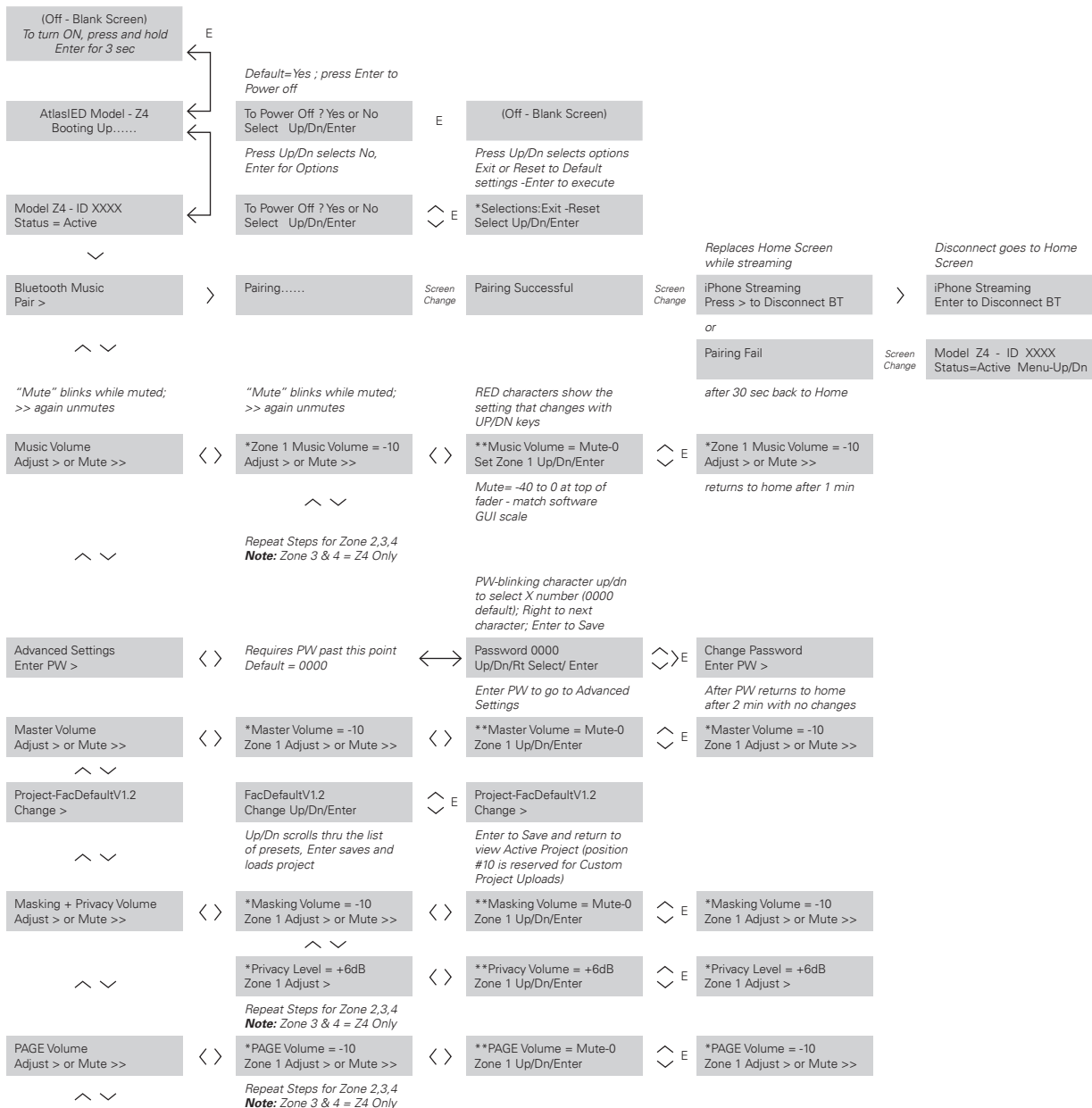
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Navigation Menu Tree

The Z Series menu tree allows access to settings for making adjustments to the Speech Privacy and Sound system. The menu tree is divided into two sections, User Control Settings and Advanced Settings. **Note:** The Advanced Settings can be password protected if needed.

- Zones 3 and 4 apply to the Z4 only
- Volume Adjust - 0 = Max level, -40 = Mute
- An asterisk “*” appears in the upper left of the window for each step to the right of the home menu

Press up / down to change selection. Press enter to confirm / save. Press left to go back. Press right-left to move cursor.
From any sub-home menu, hold the Up arrow for 6 seconds to return to boot up Home Screen.





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Understanding Unique Menu Tree Features

Masking & Privacy Volume Adjust - Each Zone has its own Masking and Speech Privacy Enhancement adjustments. These are separate adjustments but are relative to each other.

1. **Masking Level Zone 1** - This adjusts the Level of Sound Masking only in Zone 1. **Note:** This adjustment is Pre or Before the Master Zone Level 1.
2. **Privacy Level** - This feature is designed to temporarily change the masking level. This feature is ideal to use in a medical office, conference room, or any area that needs a more secure speech environment to prevent conversations from being overheard. When engaged, the Level at Zone 1 output will increase by the Privacy level entered. In most cases 6dB is common. This Privacy fader level is "relative" to the Zone fader level and is not active regardless of the position of the fader until the Speech Privacy Enhancement ports "G" and "Engage" are shorted together or the Z-SIGN or App activate it. Refer to their specific manuals for details. **Note:** The Privacy Enhancement does not change the Music (BT / AUX) or Paging (Mic / Line levels). We recommend following the Privacy Enhancement examples listed on the web site to understand the masking signal flow and gain structure.

Mic & Phantom Adjust (Mic or Line Gain Select) - In this section the Balanced input can be configured to be at Mic or Line Level. If Mic mode is selected you can also turn on the Phantom 24vDC power if required.

Mic Feedback Filter Adjust - If the Balanced input is selected to Mic mode and you are experiencing feedback while paging, the Z2 / Z4 has a specialized filter to reduce or eliminate the feedback. Navigate to On / Off, select On, then adjust the frequency Up or Down until the feedback is gone. This notch filter frequency adjustment range is 200Hz to 6KHz with the level being fixed at -20dB cut with a Q14 (0.1 BW)

System Commissioning Ramp (SCR) - Each Zone has its own SCR On / Off function and they operate independently from each other. When turned on, the SCR function last for 14 days with each day representing 1dB of change. When the SCR is turned On, the display will show number 14 representing the numbers of SCR days left. The Masking Level will be down -14dB from the set Masking Level. **Note:** The SCR is a count down timer that displays the number of days left. When it gets to 0 days, the SCR will automatically turn Off. At this point the Masking level is where the Masking fader is set to. The clock must be set for the SCR to function.

Example: If the Masking A Level is -10dB and you select 14 Days for the ramping to take place, then turn ON the SCR, the Masking A Level is -24dB. The next day the SCR changes to 13 Days and the Masking A output level increases by 1dB making the Masking level -23dB. This will continue until the SCR days reach 0 Days and the Masking A level reaches -10dB. The SCR will turn OFF automatically.

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Default Ship Mode, Factory Presets, and SHS EQ

The Z Series can store 10 different programs that are called Presets. The Z Series is shipped with the Factory Preset active. This preset is designed to be used in many general applications. For a detailed list of functions of the other presets visit atlasied.com. **Note:** Presets are subject to change, refer to atlasied.com for up to date information and detailed application guides.

Factory Default Mode

FacDefaultV1.2 - Good general masking curve applicable to situations where $\frac{1}{3}$ octave tuning will not be done. Use in Open ceilings and above ceiling grids. **Note:** Zones 3 and 4 apply to the Z4 only.

- Master Levels for Zones 1, 2, 3, 4 are set to -10 (Level adjustment range is 0 to -40 with 0 being the maximum level).
- Masking Levels for Zones 1, 2, 3, 4 are set to -20.
- Enhance Privacy Level is set to +6dB. Refer to Enhanced Privacy Mode for details on this feature.
- Masking EQ is fixed with a general EQ curve to meet many open and above ceiling masking applications. In many installations all that is needed is level adjustment.
- Paging Set to (Line) Input and the Paging Levels for Zones 1, 2, 3, 4 are set to -10.
- Music Levels for Zones 1, 2, 3, 4 are set to -10. **Note:** Music Levels apply to both Bluetooth® Streaming and AUX 3.5mm input.
- Music Input Sensitivity is set to 775mV.

Other Presets Shipped with the Z Series

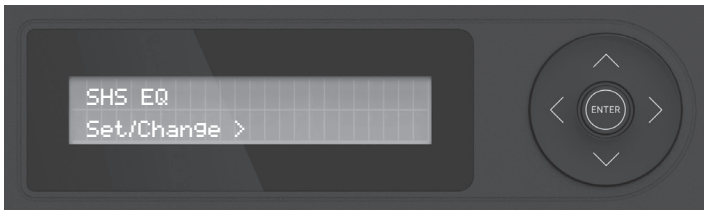
Note: The level settings for the Presets listed below are the same as the Factory Default Preset.

- M1000V1.3 - Use with the M1000 in above ceiling (plenum) masking.
- M1000ROpCIngV1.3 - Use with the M1000R-W in open ceilings with no grid.
- UnderFLRV1.2 - Use with the M1000 or M2000-LP for under floor masking applications. A 2W tap required.
- FAP33TABV1.2 - Use in direct field, down firing masking using the FAP33T-W. Wiring of the 2 masking channels must be in an A/B configuration, consult factory for details.
- FAP40TABV1.2 - Use in direct field, down firing masking using the FAP40T. Wiring of the 2 masking channels must be in an A/B configuration, consult factory for details.
- FAPSHSABV1.3 - Use in direct field, down firing masking using the SHS-6T2. Wiring of the 2 masking channels must be in an A/B configuration, consult factory for details.

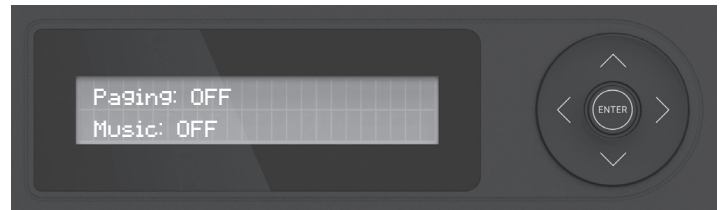
SHS EQ

Some speakers require unique EQ processing to maximize their performance. This does not mean the speaker will not function without the specific EQ settings. When using an SHS speaker with a Z2 / Z4 for background audio or paging applications, use the custom EQ setting. AtlasIED has made a simple SHS EQ On or Off setting for Paging or Music. This setting is located in the navigation tree. When On, this SHS EQ will be applied to all zones. The Music & Paging EQ are still available for room tuning.

Note: This feature only works with firmware v1.64 or higher and software v1.10 or higher.



Navigate in the menu tree to SHS EQ and select Enter.



Navigate to Paging and Music and select On or Off

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Creating Custom Project Files

Custom project files can be created by using the Z Series PC design software. This software can be downloaded at atlasied.com. Files can be custom created or modified to meet your application's needs. **Note:** There is separate software for the Z2 and Z4 units. Refer to the Z2 / Z4 Preset Design software guide for software operation.

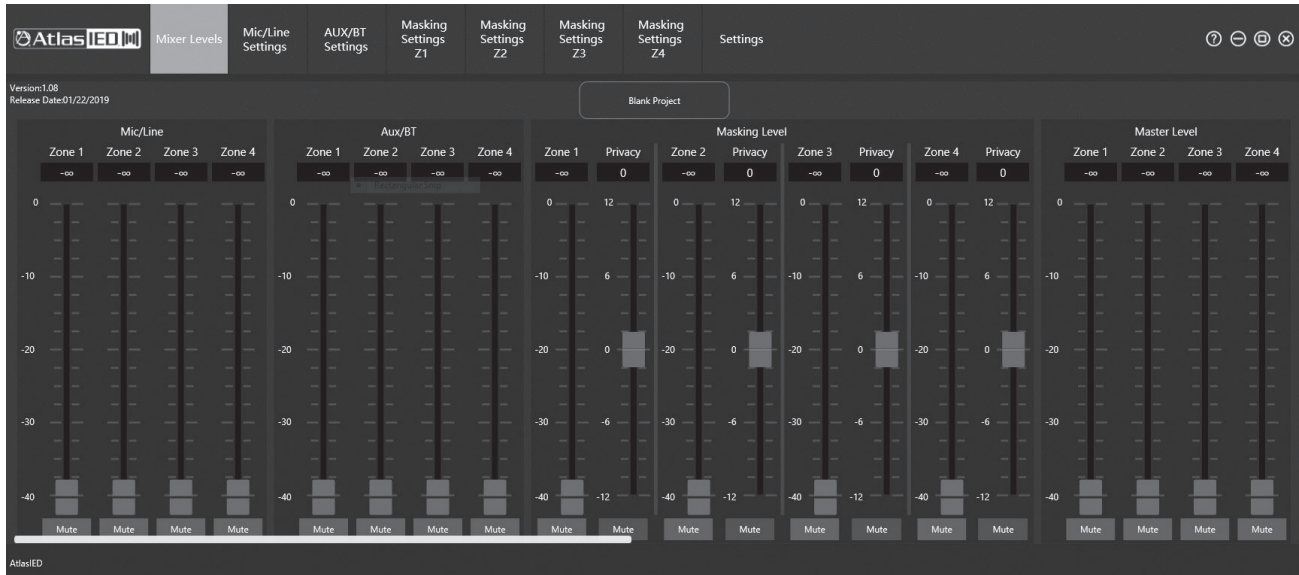


Fig 19

Creating a Project File on the PC and Uploading to the Z Series

1. Create a design in the Z2 or Z4 PC software. **Note:** There is separate software for each model.
2. Save it to a location on the computer.
3. Save the project file to a USB drive. **Note:** The file needs to be in the root directory. Only one project file with the extension .Z2HDM or .Z4HDM can be in the USB root directory for the Z Series to load successfully.
4. Insert the USB drive into the Z Series USB File Transfer Port located on the front panel. Navigate through the menu tree and upload it into the Z2 or Z4. **Note:** When uploaded, this file automatically becomes the active file.
5. Z Series file preset locations 1-9 have to be loaded via firmware update.

Creating a Project File in the Z Series, Saving it to a Drive, and Uploading it into the Software

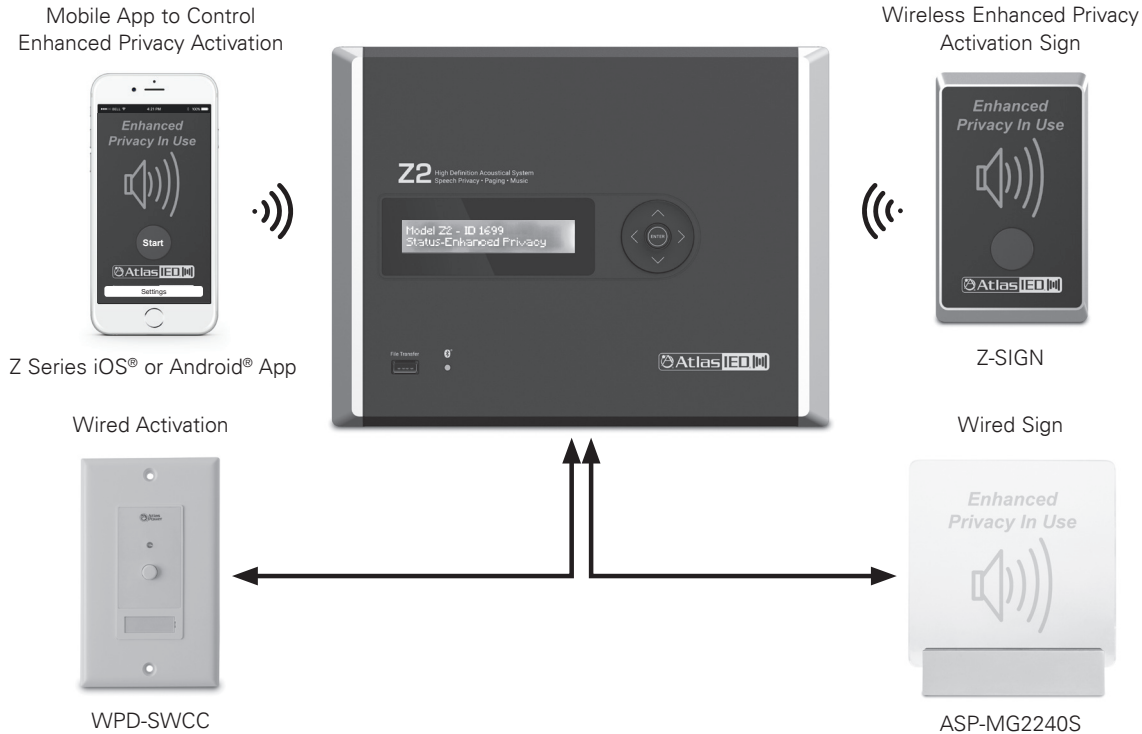
1. Modify a design in the Z2 or Z4 PC software. **Note:** There is separate software for each model.
2. Insert a USB drive into the Z Series.
3. Navigate through the Z Series menu to save a file.
4. Save the file to a USB drive. **Note:** The Z Series will automatically create a Project Folder on the USB for projects the first time you save a project.
5. Load it into the PC. Upload the file into Z2 or Z4 software. Modify as needed.
6. Save the file to the PC. Place the project file onto the root directory of an external USB drive and upload to the Z Series. Only one project file with the extension .Z2HDM or .Z4HDM can be in the USB root directory for the Z Series to load successfully.

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Z Series Optional Accessories

Note: All series accessories can be used together.



- A. **ASP-MG2240S** - The Enhanced Privacy In Use Wired Sign is used to inform the public that a Sound Masking system is in use for their security while having a private conversation. This wired privacy sign is designed to be integrated with the Z Series. The ASP-MG2240S is a 10V DC voltage powered Acrylic LED Diffusion type sign featuring a multi-functional mount with a polished aluminum finish. The ASP-MG2240S can be mounted to a wall or to a single gang electrical box. The mounting hardware is included to support most installation requirements.
- B. **WPD-SWCC** - A décor style wall plate featuring a push button switch that activates/deactivates a hard latch contact closure. This product is designed to be used with compatible AtlasIED products that are designed to be remotely activated. The unit is constructed of durable ABS material and includes a red LED system status indicator as well as a removable label guard for easy and clean designation of switch function. The unit has a four-conductor interface connection designed to work with the included Phoenix style connector. This unit can function in remote activation scenarios up to 200 feet from the controlled unit using 22-gauge wire.
- C. **Z-SIGN** - The AtlasIED Z-SIGN Enhanced Privacy Sign is used to inform the public that a Sound Masking system is in use for their security while having a private conversation. This wireless privacy sign is designed to be integrated with the AtlasIED Z Series High Definition Acoustical Systems. The Z Series sign works in conjunction with models Z2-B & Z4-B base units. The Z-SIGN is a wireless transceiver that can be used to activate the System's Enhanced Speech Privacy Mode and illuminate indicating the room is secure. The Z-SIGN utilizes 915MHz wireless technology for communication to the Z2 & Z4 base units. This technology assures communication from the sign to the base unit through walls and up to 100ft apart. The Z-SIGN also utilizes BLE® technology for the Z-SIGN to communicate to a phone or tablet via iOS® or Android® App. This App allows for the customer to engage Speech Privacy Enhancement, plus it allows for the installer to adjust the zone levels remotely during system setup. If using an App, the Z Series features an Enhanced Speech Privacy switch to allow for the sign to set on a desk. The Z-SIGN utilizes high quality rechargeable batteries to assure maximum usage between charges. The Z-SIGN can also be powered utilizing the included power supply. Refer to the Z-SIGN data sheet for more information.

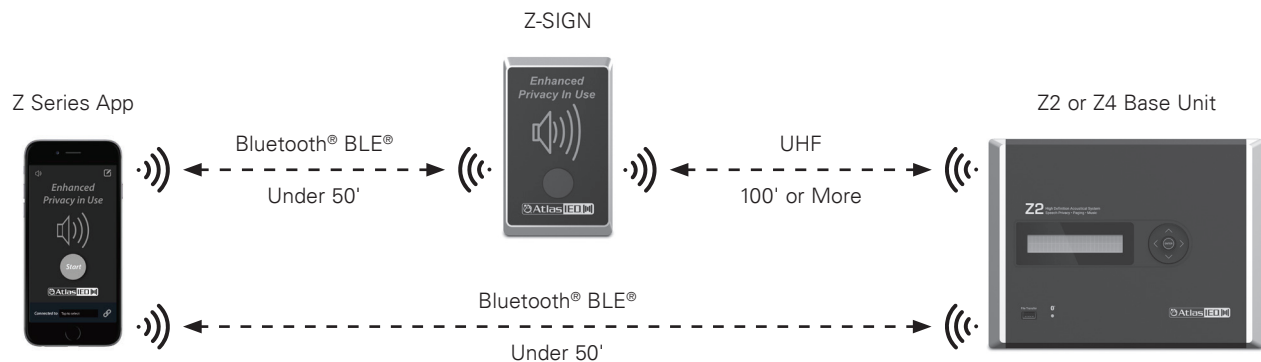
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D. **Z Series App for iOS® or Android®** - The Z Series App can be used to engage the Z2 or Z4 into the Enhanced Speech Privacy Mode. It can also be used to remotely adjust music, paging and masking levels per zone. Each input can be tuned to meet each zone's acoustical requirements.

Note: The level and tuning section of the Z Series App is password protected.

- The App uses the smartphone Bluetooth® BLE® technology to connect to the Z2 / Z4 Base unit. The distance of the Bluetooth® transmission is around 100 ft line of site. To avoid dropouts, it is recommended to be in the same room as the Z2 / Z4 base units and stay within 50ft.
- If longer distance is required a Z-SIGN can be used to act as a relay-bridge between the phone App and the Z2 / Z4 base units. The phone connects to the Z-SIGN via Bluetooth® BLE® and the Z-SIGN transmits the commands to and from the Z2 / Z4 Base units via UHF frequency. The UHF allows for much greater transmission distances compared to Bluetooth®. It is common to get command transmission distances over 100 ft but will vary depending on the building construction and number of walls it has to go through.

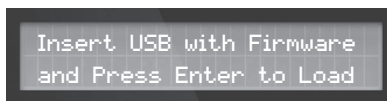


Updating the Firmware

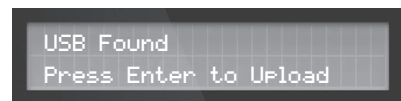
1. Compare the firmware loaded on the device to the latest firmware on the AtlasIED web site.
2. If there is a newer firmware available, download the firmware from <https://www.AtlasIED.com/Z4-b> (or Z2-b)
3. **Example:** The file will be a compressed folder and look like this: Z4_Series_V1_48.bin (do not Extract it)
4. Save any custom project settings to a USB drive before updating the firmware. Refer to the "Creating Custom Projects Files" section for detailed instructions.
5. In the Menu Tree, navigate down to the Firmware page and press (>)
6. Insert the USB drive with new Z2 or Z4 FW on the Root directory and press (>) to update. Follow the prompts:
7. After pressing Enter, the screen will say "searching"; "FW Updating..."; "Successful"; then "Booting..."
8. After the FW update is complete, the Z2 or Z4 will return to the Home Screen. Remove the USB drive.
9. Navigate to the "Clock and Date" Menu and enter the current date and time.
10. To upload a saved Project File, navigate to the "Upload from USB" Menu and follow the prompts. The uploaded file will become the active project.
11. Navigate to the "Pair Z Signs" Menu and re-pair any Z-SIGNs.



Step 5



Step 6



Step 7

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Turning on the Z Series

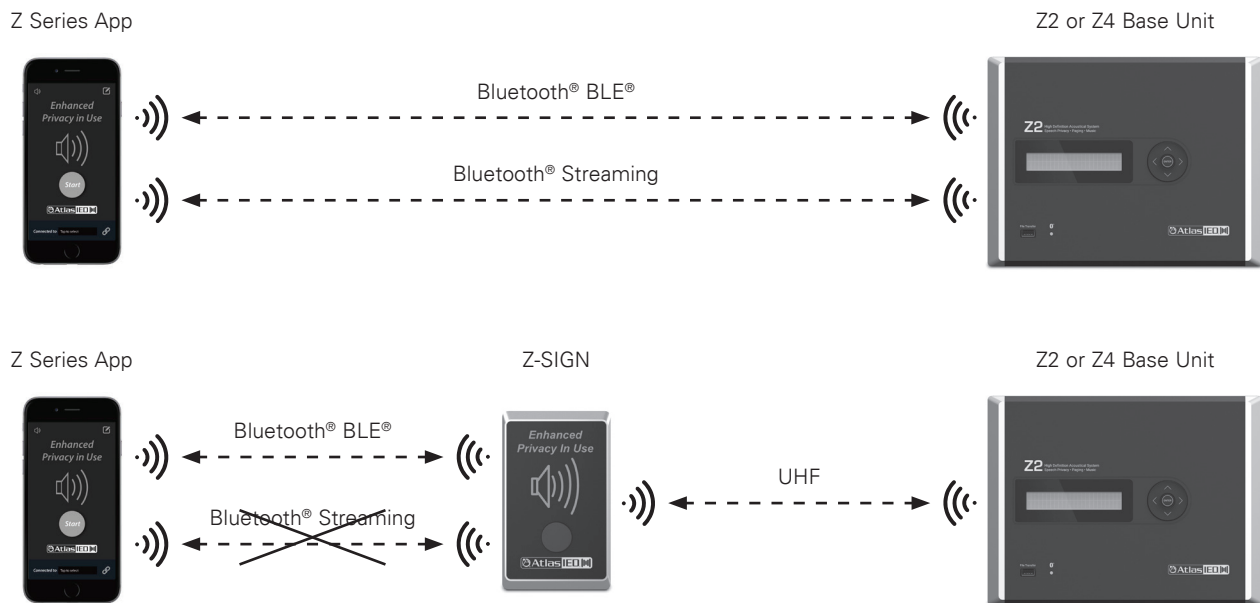
Press and hold (3 sec) Enter on the Navigation control button and the unit will boot up. Don't be alarmed if you are hearing masking present at the speakers. The Masking Level is set low to allow walking the area to see if all the speakers are functioning. Levels can be adjusted via the Navigation controls. From here select a different preset and change functions. **Note:** Settings are automatically saved when powering off or if there is a Power Failure.

Streaming Audio and Bluetooth® Paring

Streaming music from an audio device using Bluetooth® is a convenient way to run background audio without having wires in the way. However, there are limitations to Bluetooth® technology. Bluetooth® operates best when the audio device and the Z Series base unit are close to each other. Line of sight is always best. Bluetooth® can go through a wall as long as the audio device and base unit are very close to each other, but this practice is not recommended. **Note:** Bluetooth® streaming music can only be connected to Z Series base unit. See diagram below.

Pairing an Audio Device to the Z Series

- Make sure Bluetooth® is active on the audio device. Make sure the Bluetooth® Device and discovery page is open.
- On the Z Series Home screen the model and identification code of the unit will appear. Remember this because it will appear in the audio device Bluetooth® list while pairing.
- For illustration purposes we are pairing to a Model Z4 with an ID of 5267. On the Z4, navigate to the Bluetooth® Music screen. Select the Right arrow and the window will change to "Pairing...". Find AtlasIED Z4-5267 on the Bluetooth® discovery section of the audio device. Select it to connect. **Note:** Each time a new Z Series unit is used, the audio device will have to be paired to the specific Z Series unit. Use the Model Number and Unit ID Number of the Z Series unit to determine which unit to pair with.
- Remember the audio level of the music from the Z Series works in conjunction with the Bluetooth® level setting in the audio device.
- The Z Series Home screen will display the name of the audio device on the display while streaming. The audio device can also be disconnected from the Home screen.



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System	Z2-B	Z4-B
Type	40-Watt 2-Zone High Definition Acoustical System	80-Watt 4-Zone High Definition Acoustical System
Power Supply Type	24VDC (2.5A) External Power Supply	24VDC (5A) External Power Supply
Independent Analog Noise Generators	2	4
Independent Zones for Indirect Field Masking, Paging or Background Audio	2	4
Independent Zones for Direct Field Masking	1	2
Output Power (Note 1)		
70V per Zone	20-Watts	
Factory Default Settings (As Shipped)		
Amplifier Configuration	2 Zone (Indirect Field Masking)	4 Zone (Indirect Field Masking)
Level Controls Assignment	Masking Level, Mic / Line, AUX & Bluetooth® Adjustable via Front Panel Navigation	
I/O Matrix	Mic / Line, AUX, Bluetooth® Routed to Zone 1-2 or 1-4	
Level Settings	Master Levels Set to -10dB Masking Set to -20dBU Mic / Line Set to Mic -10dBu Aux 3.5mm & Bluetooth® Sensitivity Set to .775mV, Level -10dB TBD, Muted	
Masking Zone DSP Settings	Zones 1-4 Configured the Same, Masking EQ – Set to Preset #1 Factory Default File 1.xx Open Ceiling Curve, Level -20dB, Privacy Level +6dB	
Music Input DSP Settings	Input Sensitivity HPF 120Hz, LPF 15kHz, EQ 5 Bands = 0dBU, Limiter = 0dB, Zone Levels -10dB, Paging Mute Receive OFF	
Paging Input DSP Settings	Mic Mode, Phantom Off, VOX Music AUX / BT Mute Setting Off, Paging Feedback Filter Off, HPF 120Hz, LPF 15KHz, EQ 5 Bands = 0dB, Limiter = 0dB, Zone Levels -10	
GPIO Control Ports (Rear Panel)	Enhanced Speech Privacy Engage, Privacy Sign Output, Fault	
Inputs		
Input Quantity	Speech Privacy Engage, Privacy Sign Output, Fault	
Input Type (Line Balanced or Unbalanced)	Mic / Balanced Line selectable, 3 Position Phx 3.5mm pitch. AUX 3.5mm L & R Summed Unbalanced, Bluetooth® (Note: Bluetooth® and AUX 3.5mm Share the same Level control & EQ)	
Input Impedance	40kΩ	
Input Sensitivity	Mic 10mV Line 1V Music (Bluetooth® & AUX 3.5mm) Selectable, 1V, 775mv, 500mV, 316mV	
Maximum Input Level Vrms	Mic 50mV, Line 2V, AUX 2V	
Input Connectors Type	Mic / Line 3.5mm Euro Block, AUX 3.5mm TRS, Bluetooth®	
Level Control		
Front Panel Navigation Keys	Masking Zones 1-4, Paging (Mic / Line), Music, Master Zones 1-4	
App Control	Masking Zones 1-4, Paging (Mic / Line), Music, Master Zones 1-4	
Status Indicators		
Power	Front Panel Display	
Input Signal	No	
Output Signal	No	
Output Fault	Front Panel Display	
Bluetooth® Music	Front Panel LED (Blue)	
Front Panel Features		
Power Switch	Navigation Enter Button (Press and hold for 3 seconds)	
Display	2x 24 Segment, Blue Illumination	
USB	USB Standard	

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Internal Panel Features	
Power Input	24V DC, Z4 = 5A , Z2 = 2.5A, 2 Position, 5.08mm Euro Block, (Phoenix)
AUX Input	3.5mm TRS Jack
Paging (Mic / Line)	3 Position, 3.5mm Euro Block, (Phoenix)
Fault GPIO	Contact Closure (NC), Opens upon power failure or fault, 2 position Euro block, 3.5mm
Privacy Engage	3 Position, 3.5mm Euro Block, (Phoenix), 10VDC Out, GND, Activation ports
Zone 1-4 Amplifier Outputs (Direct Field Masking)	4 RJ45
Zone 1-4 Amplifier Outputs (Indirect Field Masking)	2 Position, 5.08mm Euro Block, (Phoenix)
DSP Features and Elements	
Level Control	Paging (Mic / Line), Music (AUX & Bluetooth®), Masking Zone 1,2,3,4, Master Level Zone 1,2,3,4 Enhanced Privacy Level Masking Zone 1,2,3,4
System Commissioning Ramp	Separate Commissioning Ramps for Each Masking Zone Output, Duration Settings 1 -14 Day Selection Made in Preset Software, Front Panel On / Off Selection per Zone, 7 Day Battery Clock Back Up
Masking Noise	Pink and White Noise Analog Generators
Presets	10 Total, Factory Presets Note: Subject to change. Custom Presets can be Created in Z Series Software and Uploaded via USB Port
Hi and Low Pass Filters	Paging (Mic / Line), Music (AUX / BT), Masking Zone 1,2,3,4, 12db Butterworth, Variable Frequency, Enable / Disable Button
EQ	Music (AUX / BT) - 5 Filters (Q1.4, 1.0 BW) +/-12dB, SHS Filter Paging (Mic / Line) - 5 Filters (Q3.25, 0.44 BW), Feedback Filter (Frequency Range 200Hz - 6kHz, Q14,0.10 BW) -20dB Masking Per Zone - 20 Filters (Q4.3, 0.33 BW, 1/3 Octave)
Delay	N/A
Limiter	Music (AUX / BT), Paging (Mic / Line), Threshold 0db to -15dB
DSP Type	24-Bit
Interface Control Ports	
USB	USB for Fat32 Formatted USB Drive
Wireless Sign Connectivity	915MHz with BLE® Control
Bluetooth®	Bluetooth® version 4.1
GPIO Ports	
Location	Internal
GPIO Ports	Qty 2 Functions
Connection	1. Speech Privacy Enhancement - Euro Block PHX Type 3.5mm, 3 Pins, Ground, +10VDC (Output After Engaged), C1 2. Fault Reporting – Euro Block PHX Type 3.5mm, 2 Pins Contact Closure (NC) (Open for power failure or amp Channel fault)
Functions	1. Speech Privacy Engage & Privacy Sign Output 2. Fault Reporting
Amplifier Zone Output Terminals (Direct Field Masking)	
Output Connectors Type	RJ45
Number of Terminals	Qty 4 RJ45 (32 Pins)
Output Connectors Fixed or Removable	Fixed
Wire Type Required	CATe 5,6
Amplifier Zone Output Terminals (Indirect Field Masking)	
Output Connectors Type	5.08mm Euro Block, (Phoenix)
Number of Terminals	Z2-B: 4 (2 Amplifier Channels), Z4-B: 8 (4 Amplifier Channels)
Output Connectors Fixed or Removable	Removable
Wire Size	14 AWG
Terminal Spacing	5.08mm
Current Rating	12A per Terminal
Wire Class Required	Class 2

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Cooling			
Convection	Yes		
Electrical Specifications (General)			
Masking Generator	One Per Amplifier Channel		
Total Harmonic Distortion 1kHz and 1dB Below Rated Power	Typical, 0.2%		
Frequency Response	50Hz - 15kHz (DSP Filters Set to Flat)		
Signal to Noise Ratio	>90dB Below Rated Output (A-weighted)		
Damping Factor (20Hz to 400Hz)	N/A		
Slew Rate	N/A		
Crosstalk	69dB @ 1kHz		
Protection	Hi / Low Input Voltage, Thermal, Short, Over Current		
Max Output Peak Voltage	100V (Meets Class 2 Low Voltage Wire Codes)		
File Storage	Recall or Save to Device, Recall or Save to USB Drive		
AC Power Requirements			
Operating Voltage	External Supply 110V-230V, 50/60Hz		
Mains Interface	IEC C7 Receptacle to Inline Power Supply, To Amp - 24V DC Output 2 Position, 5.08mm Euro Block, (Phoenix)		
Power Cord (Included)	1.2m, NEMA 1-15P Standard USA 2 Pin Plug to IEC C7 Receptacle with 18/2 SPT-2 Black Rated up to 7A 125V to 240V		
Minimum Power-Up Voltage	100V		
Maximum Operating Voltage	240V		
Recommended AC Mains Current Requirements	10A		
Power Consumption and Current Draw (Note 4)	Amps Z2/Z4	Watts Z2/Z4	BTU Z2/Z4
Standby / APD Mode	N/A	N/A	N/A
Idle Active / On	120mA / 160mA	6.7W / 10.2W	22.6 BTU / 34.8 BTU
Average Power, All Channels Driven (Note 2)	280mA / 560mA	21W / 40W	71 BTU / 136 BTU
Max Power, All Channels Driven (Note 3)	1A / 1.9A	73W / 140W	250 BTU / 477 BTU
Dimensions and Weight			
Rack Mount Requirements	5RU, 19" ZSERIES-RMK		
Dimensions - Unit (without Dress Ring)	W 10.7" x H 8.17" x D 2.32" (272mm x 208mm x 59mm)		
Dimensions - Shipping	W 14" x H 13.5" x D 5" (356mm x 343mm x 127mm)		
Weight - Unit	Z2 - 7.7lb (2.8kg), Z4 - 10lb (3.77kg)		
Weight - Shipping	Z2 - 10.7lb (4.2kg), Z4 - 13lb (5.17kg) (Preliminary)		
Agency Approvals			
North America Agency	UL, TUV, GMA (Power Supply)		
FCC Class B (Conducted & Radiated Emissions)	Part 15 of the FCC Rules		
RoHS / WEEE Compliant	Yes		
CE	Yes, Power Supply		
Optional Accessories			
ASP-MG2240S	Wired Enhanced Speech Privacy Sign		
Z-SIGN	Wireless Enhanced Speech Privacy Sign		
ZSERIES-RMK	5RU Rack Mount Kit		

NOTES:

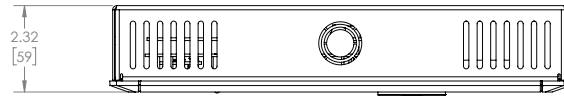
1. Power level measurement is define as follows: 1KHz sine AUX, line or mic inputs.
2. Average Power is defined as Pink Noise input signal applied to achieve 1/4 of the power rating.
3. Max Power is defined as 1 KHz input signal applied to achieve the maximum power output before clipping into a specified load.
4. BTU is calculated by the AC Mains Power consumed minus the total power output measured at the specified load and condition, multiplied by 3.412.
Example: 785 Watts from the AC Source - 600 Watts Total Output power = 185 x 3.412 = 631 BTU

Z Series

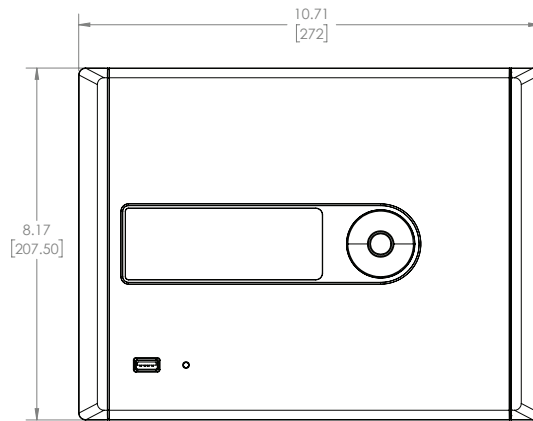
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Dimensional Drawings

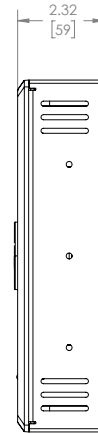
Surface Mount Configuration



Top

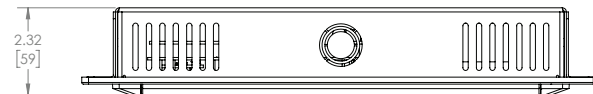


Front

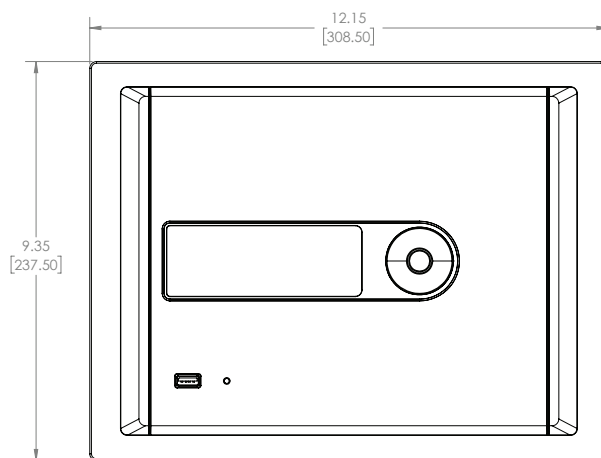


Side

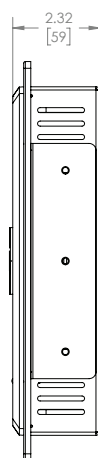
Flush Mount Configuration



Top



Front



Side

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FCC Statement

1. This device complies with Part 15 of the FCC Rules. 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.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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.

FCC 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 20cm between the radiator & your body

Limited Warranty

All products manufactured by AtlasIED are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all AtlasIED products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. AtlasIED will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to AtlasIED do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLASIED SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

AtlasIED does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Service

Should your Z Series High Definition Acoustical System require service, please contact the AtlasIED warranty department at 1-877-689-8055, ext. 277 or www.atlasied.com/support to obtain an RA number.

AtlasIED Tech Support can be reached at 1-800-876-3333 or www.atlasied.com/support.

Visit our website at www.AtlasIED.com to see other AtlasIED products.