Z2-B & Z4-B Series

High Definition Acoustical Systems for Speech Privacy, Paging, and BGM

Features

- Amplified Masking Controller
- 2 Speech Privacy Zones (Model Z2-B)
- 4 Speech Privacy Zones (Model Z4-B)
- 20-Watt Output per Zone
- Analog White and Pink Noise Generators
- Enhanced Privacy Mode with Wired & 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 Custom Project Files
- System Commissioning Ramp on Each Zone
- Conforms to Low Voltage Class-2 Wiring Codes

Applications

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 compact 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.

General Description

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. Speech Privacy Enhancement mode applies additional acoustical energy to the surrounding environment, breaking up the sound wave paths, creating incoherent audio. AtlasIED has been developing, manufacturing, assisting and commissioning sound masking systems for over forty years using proprietary Chanaud masking filters. 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 Speech Privacy Enhancement is active.

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 Position	Masking set to -10dBU (Muted) TBD Mic / Line Set to Mic (-10dBu TBD) Muted Aux 3.5mm & Bluetooth sensitivity set to 500mV, Level (-10dB TBD), Muted	
EQ and Filters	Masking EQ – Set to Preset #1 Factory Default File 1.xx Open Ceiling Curve Mic = 120Hz HPF, AUX = 100Hz HPF	
Limiter	0dB (Max Power) TBD by Preset	
GPIO Control Ports (Rear Panel)	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 5mV Line 500mV AUX Variable 1V - 316mV Bluetooth Variable 1V - 316mV	
Maximum Input Level dBu and Vrms	Mic 50mV, Line 2V, AUX 2V	
Input Connectors Type	Mic / Line 3.5mm Euro Block, AUX 3.5mm	
Level Control		
Panel Manual	Masking Zones 1-4, Mic / Line, Music	
GUI Control	NA	
Status Indicators		
Power	Display	
Input Signal	Display	
Output Signal	Display	
Output Fault	Display	
Front Panel Features		
Power Switch	Navigation Enter Button (Press 7 hold for 3 seconds)	
Display	2x 24 Segment, Blue Illumination	
USB	USB Standard	

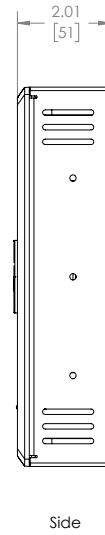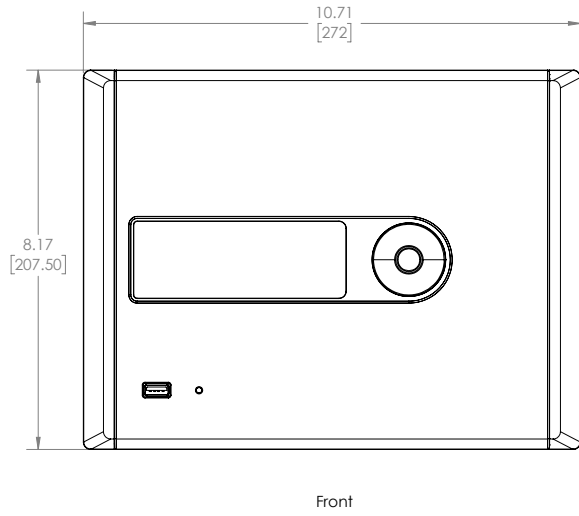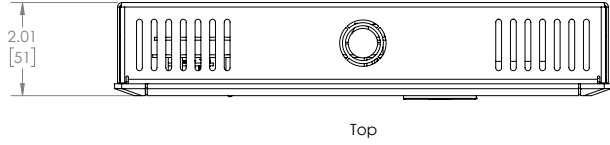| Internal Panel Features	
Power Input	24V DC, 5A, 2 Position, 5.08mm Euro Block, (Phoenix)
AUX Input	3.5mm Jack
Mic / Line	3 Position, 3.5mm Euro Block, (Phoenix)
Fault GPIO	Contact Closure, Opens upon power failure or fault, 2 position Euro block, 3.5mm
Privacy Engage	3 Position, 3.5mm Euro Block, (Phoenix), 10VDC Out, GND, Activation ports
Zone 1-4 Amplifier Outputs (Direct Field Masking	4 RJ45, alternating Pin Configuration
Zone 1-4 Amplifier Outputs (Indirect Field Masking	2 Position, 5.08mm Euro Block, (Phoenix)
DSP Features and Elements	
Location	Rear
Level Control	Level and Mic / Line, Music (AUX & Bluetooth), Masking Zone 1,2,3,4, Master Level Zone 1,2,3,4, Privacy Level Masking Zone 1,2,3,4
System Commissioning Ramp	Separate Commissioning Ramps for Masking A & B Outputs, 7 Day Battery Clock Back Up
Masking Noise	Pink and White Noise Analog Generators
Presets	10 Total, Factory Presets – TBD
Hi and Low Pass Filters	Mic / Line, AUX, Masking Zone 1,2,3,4
EQ	AUX and Line - 5 Parametric Filters, 20-Band Masking Optimized 1/3 Octave
Delay	NA
Limiter	Mic / Line 0dB - 15dB of Assignable Limiting
DSP Frequency Type	24-Bit
Interface Control Ports	
USB	Micro USB
Wireless Sign Connectivity	915MHz with BLE Control
Bluetooth	Yes, 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 (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 3,5,6
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

Cooling	
Convection	Yes
Electrical Specifications (General)	
Masking Generator	One Per Amplifier Channel
Total Harmonic Distortion 1kHz and 1dB Below Rated Power	Typical, .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)	NA
Slew Rate	NA
Crosstalk	69dB @ 1kHz
Protection	Hi / Low Input Voltage, Thermal, Short, Over Current
Max Output Peak Voltage	48V (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, 3.5mm Euro Block, (Phoenix)
Power Cord (Included)	2m, NEMA 1-15P Standard USA 2 Pin Plug to IEC C7 Receptacle with 18/2 SPT-2 Black Rated up to 10A 100V 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	NA	NA	NA
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

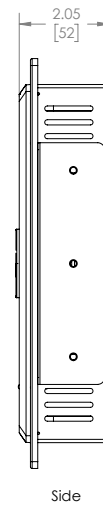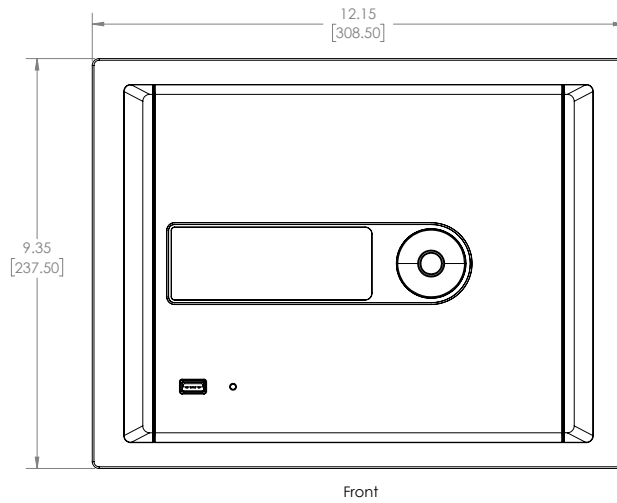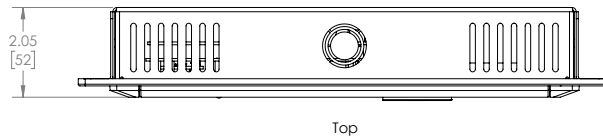| Dimensions and Weight	
Rack Mount Requirements	4 RU, 19" Kit TBD
Dimensions - Unit	W 10.5" x H 1.75" x D 11.25" (266mm x 44mm x 286mm)
Dimensions - Shipping	W 24.5" x H 3.5" x D 18.7" (635mm x 89mm x 477mm)
Weight - Unit	Z2 - 7.7 lbs (2.8kg), Z4 - 10 lbs (3.77kg)
Weight - Shipping	Z2 - 10.7lbs (4.2kg), Z4 - 13lbs (5.17kg) (Preliminary)
Agency Approvals	
North America Agency	UL, TUV, GMA (Power Supply)
Testing Standard North America	60065
FCC Class A (Conducted & Radiated Emissions)	Part 15 of the FCC Rules
RoHS / WEEE Compliant	Yes
CE	Yes
Optional Accessories	
ASP-MG2240S	Wired Enhanced Speech Privacy Sign
Z-SIGN	Wireless Enhanced Speech Privacy Sign

NOTES:
1. Power level measurement is define as follows: 1Hz 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

Dimensional Drawings

Surface Mount Configuration

Top

Front

Side

Flush Mount Configuration

Top

Front

Side

Optional Accessories

Z-SIGN: Wireless Enhanced Speech Privacy 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 wireless Transceiver that can be used to activate the System's Speech Privacy Mode and illuminate indicating the room is secure. The Z Sign utilizes 900MHz 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 100 ft apart. The Z Sign also utilizes BLE technology for the Z Sign to communicate to a phone or tablet via 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 a APP The Z Series features a Enhanced Speech Privacy switch to allow for the sign to set on a desk

The Z Series utilizes high quality reachable batteries to assure maximum usage between recharges. The Z Sign call also be powered utilizing the included power supply. Refer to the Z Series data sheet for more information.

ASP-MG2240S: Wired Enhanced Speech Privacy Sign

The AtlasIED ASP-MG2240S 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 wired privacy sign is designed to be integrated with the AtlasIED ASP-MG2240 Sound Masking Controller and the Z Series High Definition Acoustical Systems.

The ASP-MG2240S is a DC voltage powered Acrylic LED Defusion type sign featuring a multi functional mount with a polished aluminum finish. The ASP-MG2240 can be mounted a wall or to a single gang electrical box. The mounting hardware is included to support most installation requirements. Refer to the ASP-MG2240S data sheet for more information.

Architect and Engineer Specifications

The AtlasIED Model Z2-B & Z4-B shall be an amplified multi zone Speech Privacy Sound Masking, paging BGM system. The Z Series shall provide one balanced Mic / Line, AUX L & R Summed Unbalanced inputs and Bluetooth streaming input. The Z Series shall incorporate BLE and 900MHz wireless technology for remote indication and control. The Z2-B shall provide two independent analog noise generators with separate assignable system commission ramps for Speech Privacy. The Z2-B shall deliver 40-Watts of power into a 70V system. The Z4-B shall provide four independent analog noise generators with separate assignable system commission ramps for Speech Privacy. The Z4-B shall deliver 80-Watts of power into a 70V system.

The Z Series shall incorporate a front panel digital display with password protected navigational keys to access and adjust factory preset project files. Project files included shall be for speech privacy masking applications for Open Ceiling, Above Ceiling, Below Floor, Direct Field, Indirect Field and Enhanced Speech Privacy. The Z Series shall have PC Based software to create custom project files to upload via USB drive.

The Z Series shall have an "Enhanced Privacy" system for high security applications. Enhanced Privacy activation shall be done remotely via hardwired contact closure, IOS / Android APP or via the optional AtlasIED wireless Z Sign. The Z Series shall transmit when Speech Privacy is engaged via hard wired 10VDC output to power an optional Enhanced Privacy sign or wirelessly transmit to the optional Z Sign. Enhanced Privacy configuration settings shall be adjustable via the front panel navigation keys.

The Z Series shall support paging, message playback or BGM audio. The Z Series Mic / Line input shall be Euro / Phoenix type connector. The AUX input on rear panel shall be a 3.5mm stereo (summed) jack. The Bluetooth® streaming protocol shall be of the 4.1 standard. The audio input sensitivity shall be Mic 5mV, Line 500mV, and AUX / Bluetooth® variable 316mV – 1V. Each of the Mic / Line and AUX / Bluetooth® inputs shall have independent input level control accessed via the front panel navigation keys. DSP Equalization shall be fixed per Project File Preset. The Z Series shall have PC Based software to create project files with custom EQ, routing, mixing and level adjustments.

The Z Series shall incorporate two types of speaker connectivity, Euro block / Phoenix 5.08mm pitch connectors to support two conductor wire and RJ45 jacks to support a multiple multi conductor cable. The Z Series shall meet low voltage Class-2 wiring electrical code requirements, eliminating the need to run the wire in expensive conduit.

Frequency Response shall be 50Hz-15kHz (with DSP set to Flat). Dynamic Range shall be greater than 90dB below rated output (A-Weighted). Power Consumption shall be less than 20W average under normal use for the Z2-B and 40W for the Z4-B. Dimensions shall be W 10.5" x H 1.75" x D 11.25" (266mm x 44mm x 286mm). Weight shall be x.xx lbs (x.x kg) for the Z2-B and x.xx lbs (x.x kg) for the Z4-B. Warranty coverage shall be X-year. The unit shall be CE marked, RoHS/WEEE, TUV, GMA (power Supply) compliant and UL certified. The Z2 & Z4 shall meet low voltage wiring standards. The High Definition Acoustical Systems for Speech Privacy, Paging, and BGM Amplifier shall be an AtlasIED Z2-B & Z4-B.