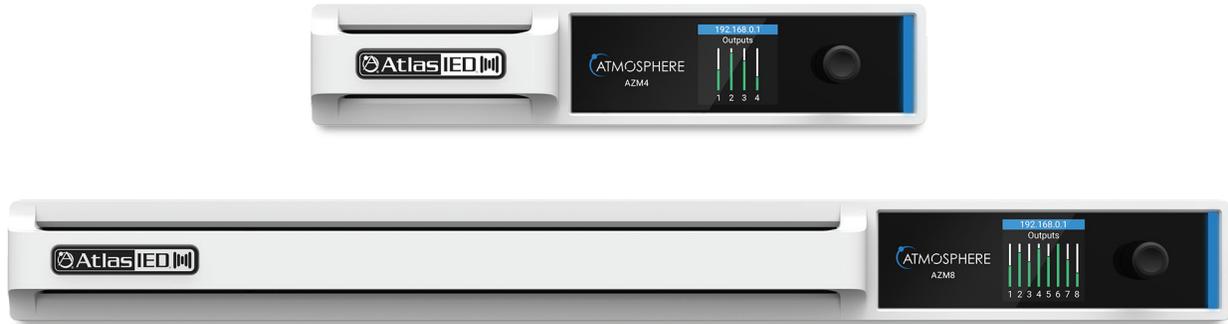


# AZM4 / AZM8

## Atmosphere™ Zone Master Signal Processor



### Features

- 4 (AZM4) & 8 (AZM8) Independently Controlled Zone Models
- Web UI – Works on Any Operating System and Any Web Browser Including: Windows, Mac, Android, iOS, Linux. Optimized for Use on Chrome and Safari.
- Plug and Play Intelligent Wall Plate Accessories
- Accessory Data + Audio Digital Bus – RJ45-Unshielded Cat 5e/6 Wire Runs up to 1000ft
- Daisy Chain up to 8 Accessories per Port - 2 Ports on AZM4, 4 Ports on AZM8
- Supports up to 16 Accessories per AZM
- Accessory Self-Heal
- Input Source Types: Mono, Stereo
- Output Zone Types: Mono, Mono+Sub, Stereo, Stereo+Sub
- Room combine
- Bell scheduler - Up to 10 unique ring lists with 50 bells each
- Event scheduler - Recall Scenes, Routines, Messages, GPO, Room Combine, Bells
- Message player - 1GB, 1GB of on-board storage
- Integrated .wav File Message Player
- GPIO - Recall Scenes, Routines, Messages, GPO, Room Combine, Bells
- Adaptive Ambient Noise Compensation
- Loud Noise Detection
- Input Auto-Gain Audio Control
- Virtual Wall Controllers for Mobile Devices, with QR Code Set-up - no App Required
- Tilter Filter™ Room EQ Adjustment Tool
- AtlasIED Speaker Presets
- Intuitive Calendar Format Event Scheduler
- Printable Dynamic System Diagram
- Third Party Control
- Simple, Streamlined Workflow for All Skill Levels

### Applications

- Restaurant / Bars
- Houses of Worship
- Offices
- Corporate Centers
- Hospitality Suites
- Education
- Industrial

### General Description

The AtlasIED Atmosphere™ AZM platform was developed to meet the highest standards of design, quality, and value that our customers have come to expect from AtlasIED. We believe you will find this new platform highly flexible to address a variety of applications while being refreshingly simple to deploy.

The AZM4 features a 6 input / 4 output configuration with 4 mic/line and 2 RCA mono-summed inputs and 4 balanced output zones. In addition, 2 Atmosphere Accessory ports (non-IP, RJ45) each allow for 1 audio wall plate accessory, A-XLR, A-RCA, or A-BT, bringing the total audio I/O count to 8 in by 4 out.

The AZM8 features a 10 input / 8 output configuration with 8 mic/line and 4 RCA stereo summed inputs and 8 balanced output zones. In addition, 4 Atmosphere Accessory ports (non-IP, RJ45) each allow for 1 audio wall plate accessory, A-XLR, A-RCA, or A-BT, bringing the total audio I/O count to 14 in by 8 out.

Six plug and play smart wall plate accessories, unmatched by peers in the industry, expand the AZM capabilities and allow for future scalability. Accessories include three audio input accessories; balanced mic/line XLR (A-XLR), RCA with 3.5mm (A-RCA), and Bluetooth® (A-BT), two controllers; single zone volume control (C-V) and advanced multi-zone controller with volume control, source select, scene recall, message recall (C-ZSV), as well as an ambient noise sensor for automatic Ambient Noise Compensation and Loud Noise Detection (X-ANS). Any control accessory can be daisy chained onto a single cable and assigned to any zone, reducing installation wiring time and complexity.

With a new approach to solving real world customer needs, the Atmosphere line of devices sets the new standard for zone-based processing and system control.

System		
Type	Signal Processor	
<b>Output Power (Note 1)</b>	<b>AZM4</b>	<b>AZM8</b>
Mic / Line Inputs	4 (Euroblock)	6 (Euroblock)
RCA	2 (mono-summed)	4 (mono-summed)
Line Outputs	4 (Euroblock)	8 (Euroblock)
General Purpose Inputs	6 (Euroblock)	6 (Euroblock)
High Priority Inputs	1 (Euroblock)	1 (Euroblock)
General Purpose Outputs	2 (Euroblock)	2 (Euroblock)
Accessory Ports	2 (RJ45)	4 (RJ45)
Network Port	1 (RJ45)	1 (RJ45)
Power Requirements		
Main Requirements	100 - 240 VAC, 50 - 60 Hz (C14 Mains Inlet Connector)	
Audio Inputs		
Balanced Mic / Line Inputs	Connector Type: 3.5mm Pitch Euroblock Color: Green Sensitivity: +4dBu with Gain Set to 0dB Input Gain: 0 - 60dB in 6dB Steps Phantom Power Voltage: +48VDC 10mA Accepts Unbalanced Inputs: Yes Maximum Input Level: +20dBu (7.72 Vrms) with Gain Set to 0dB Input Impedance: 3.9kΩ EIN: -125dBu with 150Ω Source Impedance and 20kHz BW CMRR: Typically 65dB at 1kHz Maximum Cable Size: 18AWG Minimum Cable Size: 24AWG	
RCA	Right Channel Color: Red Left Channel Color: White Type: Mono-summed Pairs Sensitivity: -10dBV Maximum Input: 2.4 Vrms (7.6dBV / 9.8dBu) for Both Inputs Driven and 4.78 Vrms (13.6dBV / 15.8dBu) for a Single Input	
Audio Outputs		
Balanced Line Outputs	Connector Type: 3.5mm Pitch Euroblock Color: Orange Maximum Output Level: +20dBu (7.75 Vrms) Maximum Cable Size: 18AWG Minimum Cable Size: 24AWG	
Audio Performance		
THD+N	<0.01% at 0dBu Input / Output with 0dB Gain at 1kHz	
Frequency Response	±0.5dB 20Hz - 20kHz	
Dynamic Range (S/N)	>108dB Unweighted 20Hz - 20kHz, > 110dB "A" Weighted	
Crosstalk	>-78dB at 1kHz	
Latency	Euroblock Input or RCA Input to Euroblock Output: 4.9 ms Accessory Input A/C to Euroblock Output: 5.9 ms Accessory Input B/D to Euroblock Output: 6.7 ms	
Maximum Hardware Gain	60dB	
Input Processing		
EQ	24dB/oct HP, PEQ, Low / High Shelf, Notch, LP / HP (BW 6, 12, 24, dB/oct)	
Dynamics	Gate, De-Esser, Compressor, Auto Gain	
Other	Gain, Mixer, Priority Router	
Output Processing		
EQ	PEQ, Tilter Filter, Low / High Shelf, Notch, LP / HP (BW 6, 12, 24, 48dB/oct) Speaker Tuning EQ Presets	
Dynamics	Ambient Noise Compression, Limiter	
Other	Delay (500 ms), Gain	

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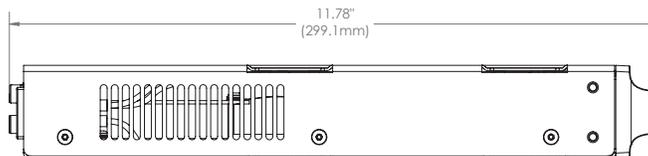
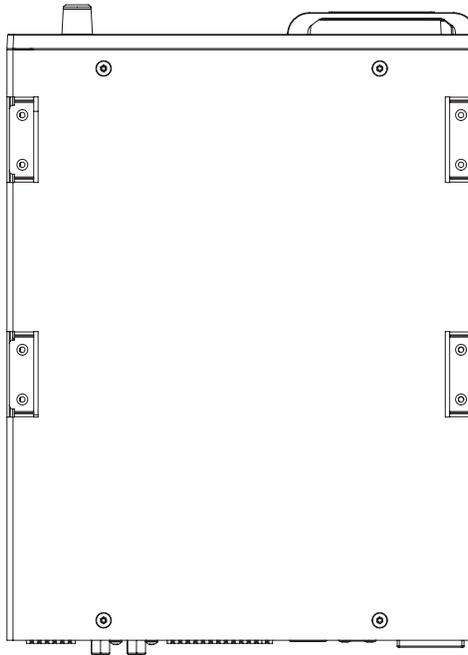
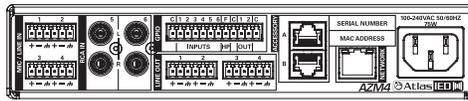
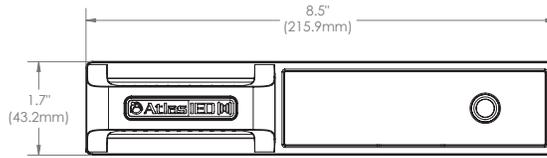
Other Connections		
General Purpose Inputs	Contact Closure: Normally Open Capable of Internal Pull-up to 5VDC via User Interface Voltage Input: 0 - 12VDC (1.3VDC Trigger Voltage)	
High Priority Input	Contact Closure: Normally Open Capable of Internal Pull-up to 5VDC via User Interface Voltage Input: 0 - 12VDC (1.3VDC Trigger Voltage)	
General Purpose Outputs	Source Current: 10mA at 2VDC Maximum Sink Current: 180mA Maximum Sink Voltage: 24VDC	
Accessory Ports	Maximum Accessories per Port: 8 Maximum Accessories per AZM: 16 Maximum Bus Length: 1000ft Maximum Audio Wall Plates per Port: 1	
Ethernet	10/100mbps	
Mechanical		
Airflow	Front to Back	
Operating Ambient Temperature Range	0° - 40°C	
Cooling System	Forced Air with Side and Back Panel Venting	
Energy Consumption		
	<b>AZM4</b>	<b>AZM8</b>
Max	130 BTU / Hr	256 BTU / Hr
No Accessories	75 BTU / Hr	127 BTU / Hr
Front Panel		
Screen	128 x 128 Color TFT Normally White, 1.45"	
Encoder	24 Detent, Push Button	
Light Bar	RGB (Blue = On, Red = Live Fault)	
WiFi		
Type	802.11 b/g/n 2.4GHz	
Free Air Range	60ft	
Dimensions and Weight		
	<b>AZM4</b>	<b>AZM8</b>
Rack Mount Requirements	1 RU, 19"	
Dimensions (with Rack Ears) - Unit	W 19" x H 1.75" x D 11.7" (483mm x 45mm x 297mm)	
Dimensions - Shipping	W 13.5" x H 4.75" x D 14" (343mm x 121mm x 356mm)	W 22" x H 4.75" x D 14" (559mm x 121mm x 356mm)
Weight - Unit	4.735 lbs (2.148kg)	8.330 lbs (3.778kg)
Weight - Shipping	7.3 lbs (3.3kg)	10.67 lbs (4.8kg)
Agency Approvals		
Safety	Conforms to: ANSI / UL 62368-1 Certified to: CAN / CSA C22.2 #62368-1	
FCC / ISED	Part 15 (Class B) (US), ICES-003 (Canada)	
Optional Accessories		
C-V	Control Type: 24 Detents 360° Continuous Push Button Encoder Light Ring: RGB (Mute, Signal, Locate) Dimensions: 1.78" x 4.2" x 1.9" Minimum Box Depth: 2.25"	
C-ZSV	Control Type: 24 Detents 360° Continuous Push Button Encoder Light Ring: RGB (Mute, Signal, Locate) Screen: 128 x 128 Color TFT Dimensions: 1.78" x 4.2" x 1.9" Minimum Box Depth: 2.25"	

A-RCA	<p>Right Channel Color: Red                  Left Channel Color: White                  Sensitivity: -10dBV (Same as AZM)                  Maximum Input Voltage: +8dBu                  Output Type: Mono                  Indicator: Green = Signal Presence, Red = Clip, Blue = Locate                  Dimensions: 1.78" x 4.2" x 1.5"                  Minimum Box Depth: 2.25"</p>
A-XLR	<p>Sensitivity: +4dBu (Same as AZM Balanced Inputs)                  Connector Type: XLR (Female)                  Retaining Clip: Yes                  Phantom Power Voltage: +48VDC 10mA                  Accepts Unbalanced Inputs: Yes                  Input Gain: 0 - 60dB                  Maximum Voltage Input: +20dBu                  Input Impedance: 3.4k<math>\Omega</math>                  EIN: 117dBu at 150<math>\Omega</math>, 20kHz BW                  CMRR: Typically 50dB at 1kHz                  Indicator: Green = Signal Presence, Red = Clip, Blue = Locate                  Dimensions: 1.78" x 4.2" x 2.1"                  Minimum Box Depth: 2.25"</p>
A-BT	<p>BT Standard: V4.2                  Audio Profile: A2DP                  Open Air Range: 60ft                  Output Type: Mono                  NFC: Tap-to-Pair                  Indicator: Green = Paired, Red = Error, Blue = Pairing Mode                  Button: Pairs and Unpairs Devices                  Dimensions: 1.78" x 4.2" x 1.4"                  Minimum Box Depth: 2.25"</p>
X-ANS	<p>Data Returned to AZM: Non-audio                  Calibration: RMS, A-weighted, SPL                  Range: 30 - 110dB SPL                  Indicator: Blue = Locate                  Dimensions: 1.78" x 4.2" x 1.4"                  Minimum Box Depth: 2.25"</p>

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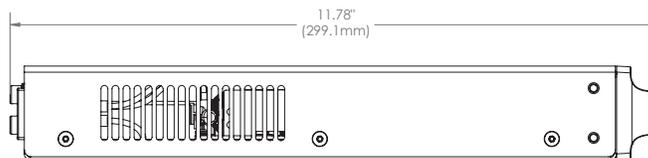
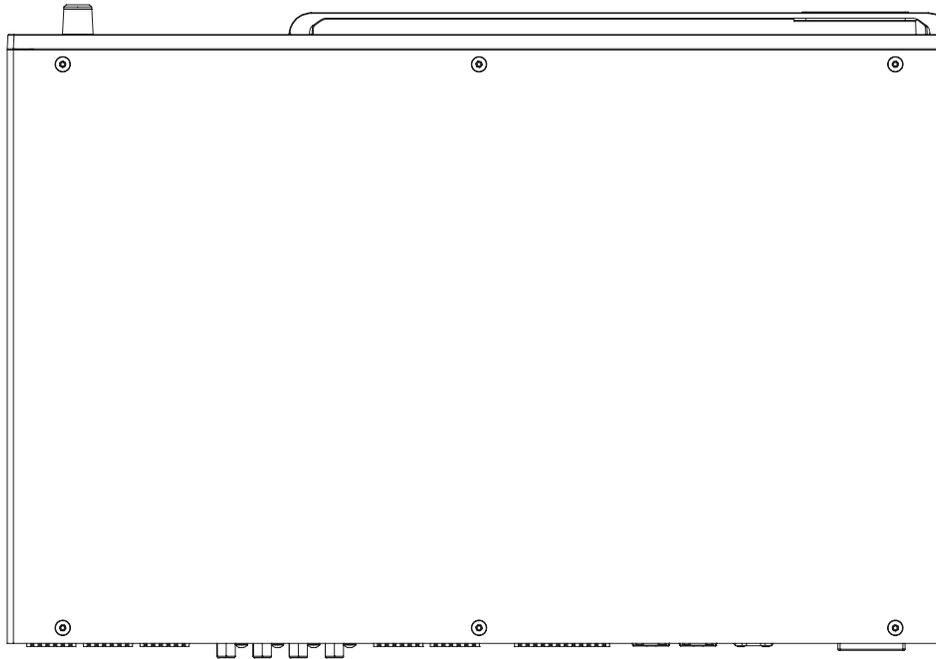
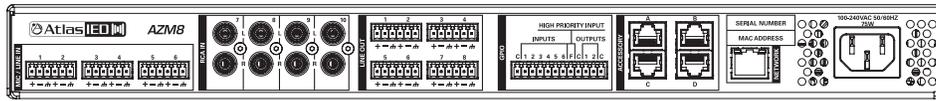
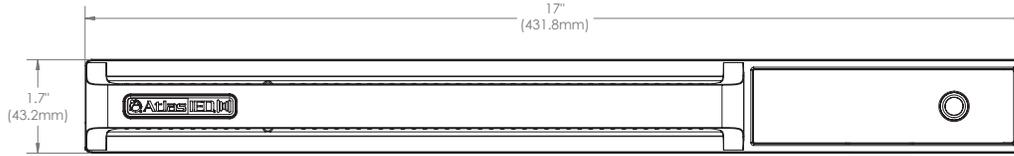
## Dimensional Drawings

AZM4



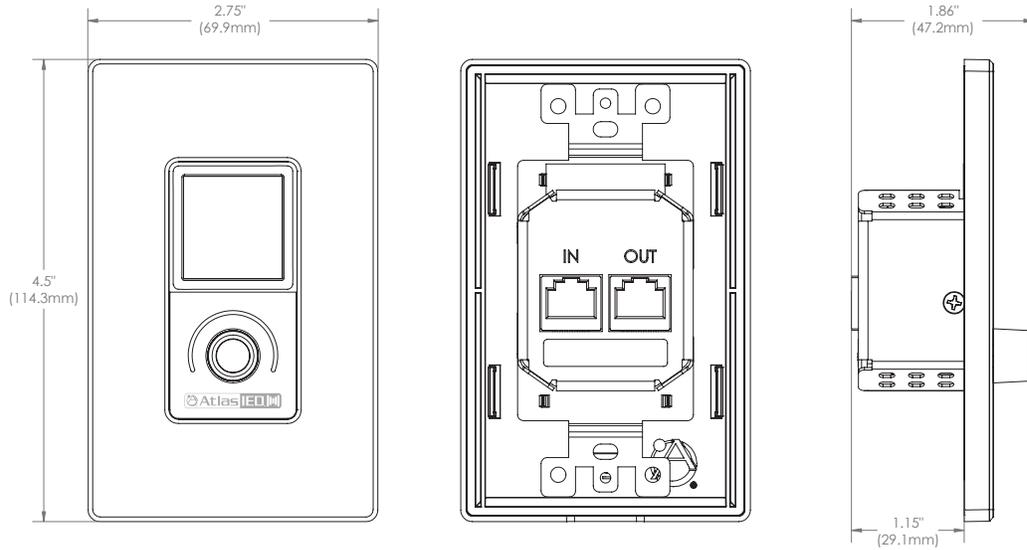
## Dimensional Drawings

AZM8

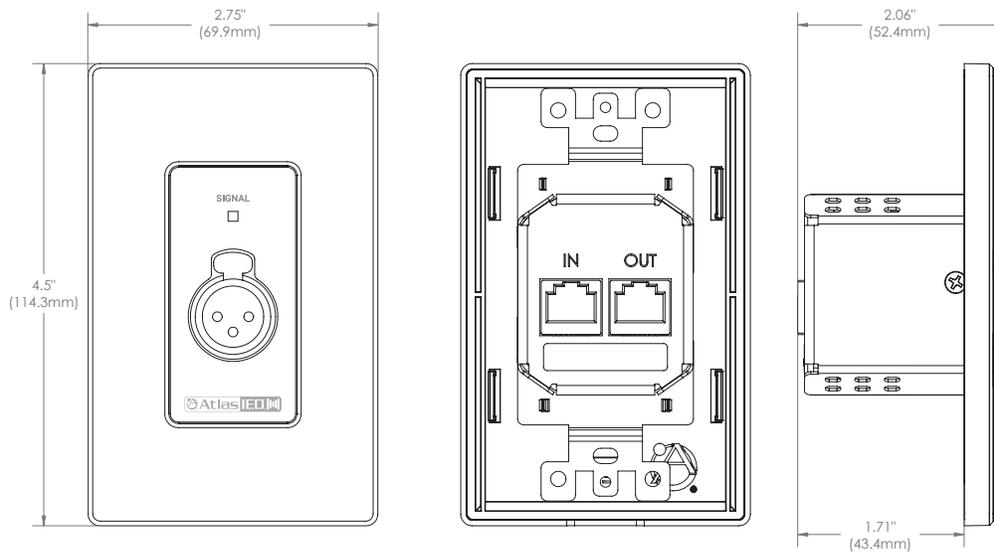


## Dimensional Drawings

C-V, C-ZSV, A-RCA, A-BT, and X-ANS share the same dimensions



## A-XLR



## Architect and Engineer Specifications

### AtlasIED Atmosphere™ AZM4 – V2.0

The audio zone processor shall be a six input by four output configuration networked device suitable for digitally selecting, combining, mixing, routing, and processing audio signals from up to eight analog sources with optional accessories. It shall send these mixed, routed, and processed signals to as many as four monaural balanced line-level outputs, from which the signals would typically be amplified and played over loudspeakers in respective zones of a business or other venue.

The front panel shall have a dynamic bar-graph display showing the assigned IP address and each of the Zone output levels (default). A Menu Navigation encoder control knob shall be available to configure and interrogate settings and faults directly. It shall also be used to perform a Factory Reset. The far-right side of the front panel shall have a Status LED bar that lights Solid Blue when in normal operation and Flashes Red when a Fault is detected.

The rear panel shall have four 3-way 3.5mm Euroblock balanced mic or line level inputs and two RCA stereo summed inputs. The four Line level outputs shall have four 3-way 3.5mm Euroblocks. The rear panel shall also have six General Purpose Inputs, one High Priority input, two outputs, and 3 common ground ports on a 12-way Euroblock. GPI ports shall be configurable in settings for contact closure (NO) or 0-12VDC with 1.3VDC minimum trigger voltage. GPO ports shall have source current of 10ma at 2VDC, maximum sink current of 180ma, and maximum sink voltage of 24VDC.

The audio zone processor shall provide a web browser based intuitive GUI (Graphic User Interface) for configuring sources, zones, and easy setup of processor controls and DSP settings. The GUI shall be accessible by network over a wired LAN, WiFi, or set as a Hot-Spot, with configurable security levels. The GUI shall have an overview dashboard for monitoring with quick links to settings pages for adjusting functions in real time. GUI individual setup page categories shall include: Dashboard, Sources, Zones, Messages, GPIO, Scenes, Routines, Accessories, Scheduler, Diagrams, and Settings.

Sources shall have an ADD SOURCE selection that allows user to Name and configure source type, Mono or Stereo, and select an available Input port or Lt-Rt-ports, and a Color for visual reference. Input ports shall include: Mic-Line, RCA, and Audio Accessories on A and B port.

Each of the Balanced Mic/Line Sources shall have an editable Name window, dynamic bar-graph-display with fader and simulated LED “active” indicators for Gate, De Ess, and Comp, an input Mute, and a Link to open the input respective DSP GUI pages. The GUI shall have pages for GENERAL Settings that include: Preamp Gain of 0-60dB with +4dB sensitivity = 0dB; +48V Phantom; 12dB/Oct HPF, and additional DSP settings pages for Gate, De-Esser, Compressor, Equalizer (4-Band), and Auto-Gain.

Each of the -10dBV-RCA stereo summed Sources shall have an editable Name window, dynamic bar-graph-display, fader, and a Link to the input respective GUI page for GENERAL Settings (Input Gain), and DSP settings (Same as Mic/Line). Two physical inputs (Mic-Line, RCA, or wall plate) shall be required to configure Stereo to Zones.

The Sources section shall provide GUI pages for Audio Wall Plate sources which will become Active when an Audio Wall Plate is terminated to the respective A or B RJ45 buss port. Once assigned to a Source, General Settings and DSP settings pages shall identify the type of audio Wall Plate and display the appropriate DSP.

The Sources section shall also provide four “Mixes” inputs each allowing a selection of any ten inputs to be combined into a sub-mix to provide a single audio fader adjustment for the group. Each of the four “Mixes” can be named and appear in the source list for selection by a zone output.

In addition, the Sources section shall include a signal oscillator configurable as Freq selectable-Sine wave, white noise, or pink noise. Controls shall be Enable (ON/OFF), Output Level, and shall be available in the source list at all outputs for assignment to zones.

Each of the Zones shall have an editable Name window, Input Source select, dynamic bar-graph-display with fader and simulated LED “active” indicators for Limiter, Mute, and a Link to the input respective DSP pages. The GUI shall have pages for GENERAL Settings that include Input Priority setup; AtlasIED Speaker voicing Preset select; output Delay adjust; and DSP settings pages for EQUALIZER, ARC (Ambient Noise Compensation), and LIMITER.

Up to 25 mobile devices shall be capable of being used as virtual zone controllers by scanning a QR code with an on-network device. The accessories settings page shall provide access security along with Zones, Sources, Scenes, Routines, GPO, Bell Schedule control, and Messages configuration selections. After configuring, a QR Code shall display in the GUI and can also be printed. A wall-mount frame for printed QR code shall be included.

The audio processor shall have the ability to combine zones to create a zone group (Room Combine) that is controllable from all assigned wall controllers and virtual wall controllers. Groups created shall be able to include one to four zones. Zones within the group shall have an assigned zone level offset of -20dB to +20dB.

The audio processor shall have an onboard bell scheduler. The bell scheduler shall have the ability to hold up to ten ring lists with each containing up to fifty ring events. Each ring event shall have opt-in capability for each zone and group that has been created within the system. Each ring event shall allow the selection of a separate audio file to be played. The bell scheduler shall be able to accommodate multiweek bell schedule patterns as well as exception days.

In addition, the audio zone processor shall have Six Plug and Play smart Wall Plate optional accessories to expand the capabilities and allow for scalability. Two RJ45 digital bus ports shall be available on rear panel to terminate accessories using up to 1000' of Cat5/6 non-shielded cable. One Audio Wall Plate per port and any control accessory shall be capable of daisy chaining on a single cable digital bus and assigned to any zone. A maximum of sixteen total accessories shall be possible. Accessories shall include 3 x Audio Inputs; balanced Mic / Line XLR, dual RCA stereo summed with 3.5mm, and mono summed Bluetooth® audio wall plate inputs; 2 x Controllers; Volume Controls, Volume Controls with Source Select, Scene Recall, GPO Trigger, Routine Recall, Daily Bell Schedule Selection, and 1 x Ambient Noise Sensor for Zone Ambient Noise Compensation control.

The audio multi-zone mixer shall be a 1RU-1.75”H x ½ rack wide (8.5”) x 11.7” deep chassis with rack ears, hardware, and 1RU-19” full rack width adapter included. AC mains shall be 100-240 VAC, 50-60Hz - C14 Mains Inlet Connector; Max Energy Consumption (with Accessories) = 130 BTU/hour; Frequency response shall be: +/-5dB 20Hz-20kHz > 110dB “A” weighted; S/N >108dB unweighted, >110dB “A” weighted. Max Bal-Line Output Level = +20dBu (7.75Vrms)

The audio zone processor shall be an AtlasIED Atmosphere™ AZM4

## Architect and Engineer Specifications

### AtlasIED Atmosphere™ AZM8 – V2.0

The audio zone processor shall be a ten input by eight output configuration networked device suitable for digitally selecting, combining, mixing, routing, and processing audio signals from up to fourteen eight analog sources with optional accessories. It shall send these mixed, routed, and processed signals to as many as four monaural balanced line-level outputs, from which the signals would typically be amplified and played over loudspeakers in respective zones of a business or other venue.

The front panel shall have a dynamic bar-graph display showing the assigned IP address and each of the Zone output levels (default). A Menu Navigation encoder control knob shall be available to configure and interrogate settings and faults directly. It shall also be used to perform a Factory Reset. The far-right side of the front panel shall have a Status LED bar that lights Solid Blue when in normal operation and Flashes Red when a Fault is detected.

The rear panel shall have six 3-way 3.5mm Euroblock balanced mic or line level inputs and four RCA stereo summed inputs. The eight Line level outputs shall have eight 3-way 3.5mm Euroblocks. The rear panel shall also have six General Purpose Inputs, one High Priority input, two outputs, and 3 common ground ports on a 12-way Euroblock. GPI ports shall be configurable in settings for contact closure (NO) or 0-12VDC with 1.3VDC minimum trigger voltage. GPO ports shall have source current of 10ma at 2VDC, maximum sink current of 180ma, and maximum sink voltage of 24VDC.

The audio zone processor shall provide a web browser based intuitive GUI (Graphic User Interface) for configuring sources, zones, and easy setup of processor controls and DSP settings. The GUI shall be accessible by network over a wired LAN, WiFi, or set as a Hot-Spot, with configurable security levels. The GUI shall have an overview dashboard for monitoring with quick links to settings pages for adjusting functions in real time. GUI individual setup page categories shall include: Dashboard, Sources, Zones, Messages, GPIO, Scenes, Routines, Accessories, Scheduler, Diagrams, and Settings.

Sources shall have an ADD SOURCE selection that allows user to Name and configure source type, Mono or Stereo, and select an available Input port or Lt-Rt-ports, and a Color for visual reference. Input ports shall include: Mic-Line, RCA, and Audio Accessories on A, B, C, and D ports.

Each of the Balanced Mic/Line Sources shall have an editable Name window, dynamic bar-graph-display with fader and simulated LED “active” indicators for Gate, De Ess, and Comp, an input Mute, and a Link to open the input respective DSP GUI pages. The GUI shall have pages for GENERAL Settings that include: Preamp Gain of 0-60dB with +4dB sensitivity = 0dB; +48V Phantom; 12dB/Oct HPF, and additional DSP settings pages for Gate, De-Esser, Compressor, Equalizer (4-Band), and Auto-Gain.

Each of the -10dBV-RCA stereo summed Sources shall have an editable Name window, dynamic bar-graph-display, fader, and a Link to the input respective GUI page for GENERAL Settings (Input Gain), and DSP settings (Same as Mic/Line). Two physical inputs (Mic-Line, RCA, or wall plate) shall be required to configure Stereo to Zones.

The Sources section shall provide GUI pages for Audio Wall Plate sources which will become Active when an Audio Wall Plate is terminated to the respective A, B, C, or D RJ45 buss port. Once assigned to a Source, General Settings and DSP settings pages shall identify the type of audio Wall Plate and display the appropriate DSP.

The Sources section shall also provide four “Mixes” inputs each allowing a selection of any fourteen inputs to be combined into a sub-mix to provide a single audio fader adjustment for the group. Each of the four “Mixes” can be named and appear in the source list for selection by a zone output.

In addition, the Sources section shall include a signal oscillator configurable as Freq selectable-Sine wave, white noise, or pink noise. Controls shall be Enable (ON/OFF), Output Level, and shall be available in the source list at all outputs for assignment to zones.

Each of the Zones shall have an editable Name window, Input Source select, dynamic bar-graph-display with fader and simulated LED “active” indicators for Limiter, Mute, and a Link to the input respective DSP pages. The GUI shall have pages for GENERAL Settings that include Input Priority setup; AtlasIED Speaker voicing Preset select; output Delay adjust; and DSP settings pages for EQUALIZER, ARC (Ambient Noise Compensation), and LIMITER.

Up to 25 mobile devices shall be capable of being used as virtual zone controllers by scanning a QR code with an on-network device. The accessories settings page shall provide access security along with Zones, Sources, Scenes, Routines, GPO, Bell Schedule control, and Messages configuration selections. After configuring, a QR Code shall display in the GUI and can also be printed. A wall-mount frame for printed QR code shall be included.

The audio processor shall have the ability to combine zones to create a zone group (Room Combine) that is controllable from all assigned wall controllers and virtual wall controllers. Groups created shall be able to include one to eight zones. Zones within the group shall have an assigned zone level offset of -20dB to +20dB.

The audio processor shall have an onboard bell scheduler. The bell scheduler shall have the ability to hold up to ten ring lists with each containing up to fifty ring events. Each ring event shall have opt-in capability for each zone and group that has been created within the system. Each ring event shall allow the selection of a separate audio file to be played. The bell scheduler shall be able to accommodate multiweek bell schedule patterns as well as exception days.

In addition, the audio zone processor shall have Six Plug and Play smart Wall Plate optional accessories to expand the capabilities and allow for scalability. Four RJ45 digital bus ports shall be available on rear panel to terminate accessories using up to 1000’ of Cat5/6 non-shielded cable. One Audio Wall Plate per port and any control accessory shall be capable of daisy chaining on a single cable digital bus and assigned to any zone. A maximum of sixteen total accessories shall be possible. Accessories shall include 3 x Audio Inputs; balanced Mic / Line XLR, dual RCA stereo summed with 3.5mm, and mono summed Bluetooth® audio wall plate inputs; 2 x Controllers; Volume Controls, Volume Controls with Source Select, Scene Recall, GPO Trigger, Routine Recall, Daily Bell Schedule Selection, and 1 x Ambient Noise Sensor for Zone Ambient Noise Compensation control.

The audio multi-zone mixer shall be a 1RU-1.75”H x 19”W x 11.7” deep chassis with rack ears hardware included. AC mains shall be 100-240 VAC, 50-60Hz - C14 Mains Inlet Connector; Max Energy Consumption (with Accessories) =256 BTU/hour; Frequency response shall be: +/-5dB 20Hz-20kHz > 110dB “A” weighted; S/N >108dB unweighted, >110dB “A” weighted. Max Bal-Line Output Level = +20dBu (7.75Vrms)

The audio zone processor shall be an AtlasIED Atmosphere™ AZM8