AHM64

ALLEN&HEATH

TECHNICAL DATA SHEET

AHM-64 is an audio matrix processor for sound management and installation. It is designed for audio distribution, paging, conferencing and speaker processing in a multitude of environments including corporate, hospitality, education, event and multi-purpose venues, retail, theatres, cruise ships and sports venues.

The AHM-64 processor is complemented by an extended ecosystem of remote audio expanders, remote controllers, interfaces, apps and software. A family of portable, rack-mountable or wall-mount audio expanders is available with a choice of proprietary point-to-point Layer-2 or Dante transport protocols.

- 64x64 processing matrix
- 12x12 local analogue I/O
- I/O Port for audio networking, up to 128x128
- Dante 96kHz 64x64 optional card (AES67 and DDM ready)
- 128x128 built-in SLink port for audio expansion
- 64 configurable processing outs – up to 64 mono/stereo zones
- 96kHz FPGA core with ultra-low latency
- Compatible with IP1, IP6, IP8 remote controllers
- 2x2 local GPIO plus networkable GPIO interface
- DC backup power supply
- System Manager software
- Custom Control app and editor
- 32 user profiles
- Integrated stereo / dual mono playback
- Event scheduler

Sound management tools

- 8x Automatic Mic Mixers
- AEC (Acoustic Echo Cancellation) – optional module
- ANC (Ambient Noise Compensation)
- Priority ducking
- 8-band PEQ, dynamics and delay on every input and zone
- Speaker processing with x-over filter, delay, limiter and PEQ

AHM64

A&E SPECIFICATION

The unit shall be a 2u rack-mountable digital matrix processor, capable of 64 input channels and 64 output channels, all independently assigned. The unit shall operate at 96kHz sample rate and employ FPGA technology for digital signal processing. The system latency from analogue input to output shall not exceed 1ms.

All input channels shall be configurable mono/stereo and have access to any local or remote input.

Output channels shall be configurable as mono/stereo zones or as speaker processing outputs with 2, 3 or 4-way Crossovers, allowing up to 64 mono zones / 32 stereo zones, or any combination of zones and speaker processing outputs not exceeding 64 total channels.

All input channels shall provide the following processing: Trim, Polarity, Gate, Insert point, 8-band Parametric EQ, Compressor, Delay and Automatic Mic Mixing (AMM).

All zones shall provide the following processing: Source Selector, Insert point, 8-band Parametric EQ, 28-band GEQ, Compressor, Delay, Ambient Noise Compensation (ANC) and Limiter.

All speaker processing outputs shall provide the following processing: Crossover filters with selectable filter type and slope, PEQ, Delay and Limiter.

All output channels shall be routable to any local or remote output.

The 8-band Parametric EQ shall provide Bell, Constant Q, Shelving, LPF, HPF and Notch filter types selectable per band.

The unit shall have 12 balanced inputs on pluggable Phoenix terminal blocks. Each input shall have independent gain control with +60dB of gain, a -20dB active PAD and +48V phantom power.

The unit shall have 12 balanced outputs on pluggable Phoenix terminal blocks with a nominal level of +4dBu.

The routing matrix mixer shall be capable of mixing all inputs to all zones, as well as all zones to other zones.

The unit shall provide Automatic Mic Mixing (AMM) of up to 64 microphone sources into 1, 2 ,4 or 8 zones. The AMM shall be capable of running in classic gain sharing mode or optionally as a NOM (Number of Open Microphones) algorithm.

The unit shall offer a slot for optional processing modules including Acoustic Echo Cancellation.

Playback of stereo or dual mono .WAV, MP3 and FLAC files shall be supported, with internal storage for the audio files.

There shall be a local SLink Ethernet audio expansion port, supporting multiple Audio-over-Ethernet protocols and providing access to up to 128x128 I/O, and allowing remote connection and preamp control of Allen & Heath audio expanders, connected via a single Cat5e or higher cable.

An RJ45 Control Network port shall be provided on the rear of the unit for connection to System Manager software, IP remote controllers, Custom Control app and TCP control.

One 128x128 I/O port for optional digital interface modules shall be provided. The Dante optional module shall provide a minimum of 64x64 I/O at 96kHz, and be compliant with AES67 and Dante Domain Manager.

The unit shall provide the facility to save 500 presets. The presets shall be nameable and a descriptive text entry per preset provided. A crossfade of up to 20 seconds shall be available to apply to any combination of Inputs, Zones, Groups, Input/Zone Crosspoints and Zone/Zone Crosspoints.

The unit shall provide the facility to save 50 events. The events shall be nameable and should allow for the scheduled recall of presets at a specified time on specific days, or every day, with the option for the event to be triggered repeatedly or just once.

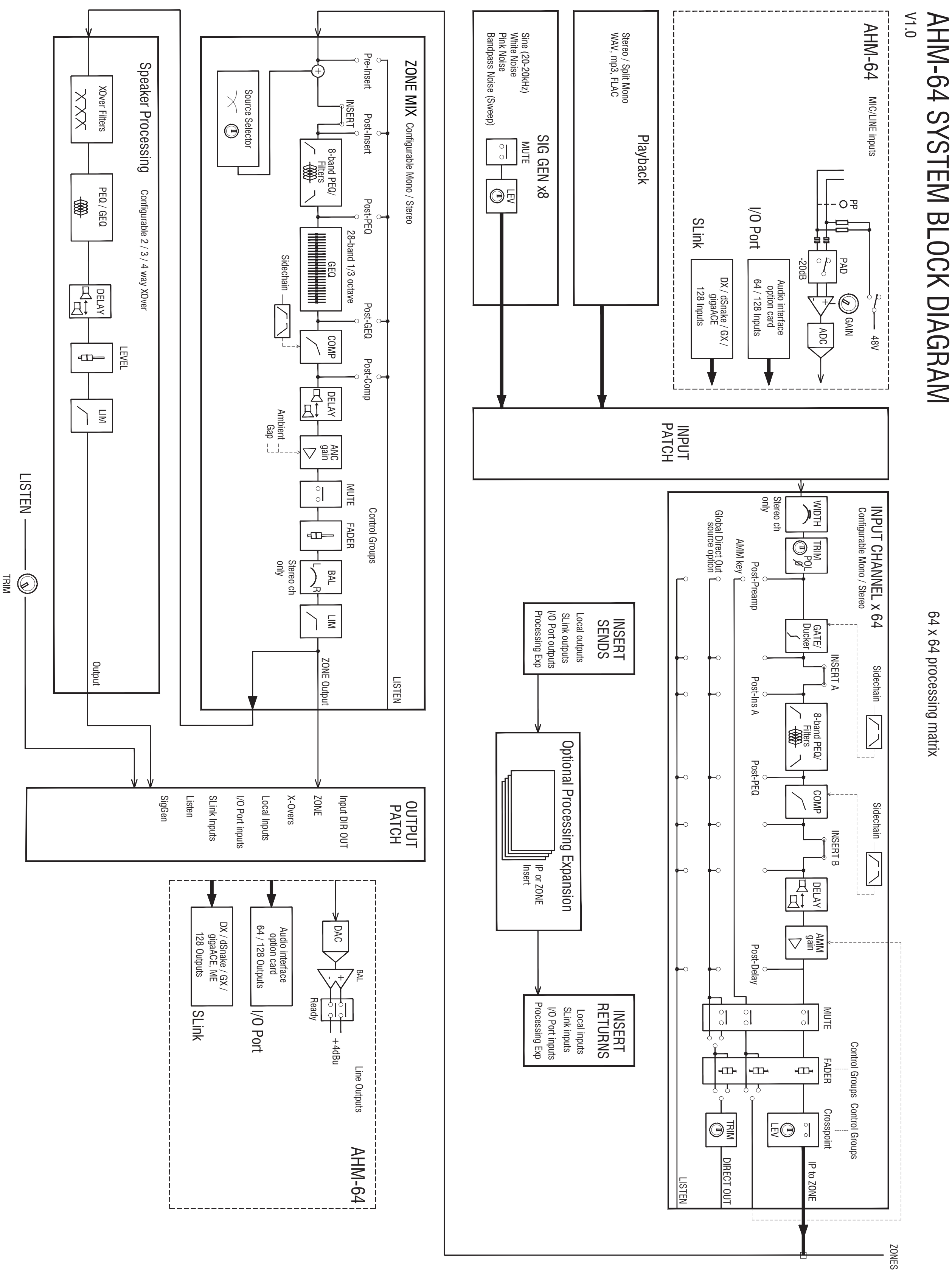
The unit shall allow the creation and storage of up to 32 user profiles, each with an editable name, password and permission settings.

The unit shall allow the connection of two general purpose inputs, and two general purpose relay outputs, via pluggable Phoenix connectors on the rear of the chassis. Each input connector shall allow analogue control of Mutes, Levels, Preset Recall, Custom MIDI and Audio Playback via a 0-10V control signal. Output 1 shall support normally closed and normally open operation, and output 2 shall support normally open operation. The outputs shall be configurable to respond to Mutes, Preset Recalls, Audio Playback and Level Sensing. An optional 8x8 networkable GPIO interface shall be available for expansion of the GPIO functionality.

Networkable, PoE-enabled remote controllers shall be available to complement the unit, including wallplate controllers in both US and EU formats, and desktop controllers with a minimum of 8 motorised faders and 8 LCD displays.

The unit shall have an integrated power supply accepting AC mains voltages of 100-240V, 50/60Hz, 70W max via an earthed 3-pin IEC C6 male connector mounted on the rear chassis. A DC input for backup power supply shall be included, capable of accepting a 12V input on a 2-pin Phoenix terminal block. For redundant power supply operation, the internal power supply shall be capable of operating simultaneously with an external DC supply.

The unit shall be the Allen & Heath AHM-64.



AHM-64 SYSTEM BLOCK DIAGRAM
V1.0
AHM-64
MIC/LINE inputs
PP
48V
PAD
-20dB
GAIN
ADC
I/O Port
Audio interface option card 64 / 128 Inputs
SLink
DX / dSnake / GX / gigaACE 128 Inputs
Playback
Stereo / Split Mono WAV, mp3, FLAC
SIG GEN x8
MUTE
LEV
Sine (20-20kHz)
White Noise
Pink Noise
Bandpass Noise (Sweep)
INPUT PATCH
64 x 64 processing matrix
INPUT CHANNEL x 64
Configurable Mono / Stereo
WIDTH
Stereo ch only
TRIM
POL
Post-Preamp
AMM key
Global Direct Out source option
GATE/ Ducker
Sidechain
INSERT A
Post-Ins A
8-band PEQ/ Filters
Post-PEQ
COMP
Sidechain
INSERT B
DELAY
AMM gain
Post-Delay
MUTE
FADER
Control Groups
Crosspoint
LEV
Control Groups
TRIM
DIRECT OUT
IP to ZONE
LISTEN
ZONES
INSERT SENDS
Local outputs
SLink outputs
I/O Port outputs
Processing Exp
Optional Processing Expansion
IP or ZONE Insert
INSERT RETURNS
Local inputs
SLink inputs
I/O Port inputs
Processing Exp
ZONE MIX
Configurable Mono / Stereo
Pre-Insert
INSERT
Post-Insert
Source Selector
8-band PEQ/ Filters
Post-PEQ
GEQ
28-band 1/3 octave
Sidechain
Post-GEQ
COMP
Post-Comp
DELAY
ANC gain
Ambient Gap
MUTE
FADER
Control Groups
BAL
Stereo ch only
LIM
ZONE Output
LISTEN
Speaker Processing
Configurable 2 / 3 / 4 way XOver
XOver Filters
PEQ / GEQ
DELAY
LEVEL
LIM
Output
LISTEN
TRIM
OUTPUT PATCH
Input DIR OUT
ZONE
X-Overs
Local Inputs
I/O Port inputs
SLink Inputs
Listen
SigGen
DAC
BAL
Ready
+4dBu
Line Outputs
Audio interface option card 64 / 128 Outputs
I/O Port
DX / dSnake / GX / gigaACE, ME 128 Outputs
SLink
AHM-64

TECHNICAL SPECIFICATION

INPUTS

Mic/Line Inputs	Balanced, +48V phantom power
Mic/Line Preamp	Fully recallable
Input Sensitivity	-60 to +15dBu
Analogue Gain	+5 to +60dB, 1dB steps
Pad	-20dB Active PAD
Maximum Input Level	+30dBu (PAD in)
Input Impedance	>3kΩ (Pad out), >8kΩ (Pad in)
Mic EIN	-127dB with 150Ω source

OUTPUTS

Analogue Outputs	Balanced, Relay protected
Output Impedance	<75Ω
Nominal Output	+4dBu = 0dB meter reading
Maximum Output Level	+22dBu
Residual Output Noise	-94dBu (muted, 20-20kHz) -92dBu (muted, 20-40kHz)

DIMENSIONS AND WEIGHTS

	Width x Depth x Height x Weight
AHM-64	482.6mm x 364mm x 91.2mm (19” x 14.3” x 3.6”) x 7kg (15.5lbs)
AHM-64 Boxed	600 x 500 x 180 mm (23.6” x 19.7”x 7.1”) x 9.5kg (21lbs)

SYSTEM

Measured balanced XLR in to XLR out, 20-20kHz, +5dB Gain, Pad out, signal @ 0dB (meter)

Dynamic Range	110dB
System Signal to Noise	-94dB
Frequency Response	20Hz - 25kHz +0/-0.8dB
THD+N (analogue in to out)	0.005% @ +16dBu output, 1kHz +5dB gain
Headroom	+18dB
Sampling Rate	96kHz +/- 20 PPM
ADC	32-bit Delta-Sigma
DAC	32-bit Delta-Sigma

Playback

Internal Storage	~3GB
File types	Mono/stereo .WAV (16/24bit, 44.1/48/96kHz), MP3, FLAC

Operating Temperature Range	0 deg C to 40 deg C (32 deg F to 104 deg F)
Mains Power	100-240V AC, 50-60Hz, 70W max
DC Power	12VDC - 5A minimum capable supply

PROCESSING SPECIFICATION

INPUT PROCESSING

64 Input Channels	Configurable mono or stereo
Trim	+/-24dB digital trim
Polarity	Normal/Reverse
Stereo Width Control	L/R, R/L, L -Pol/R, R -Pol/L, Mono, L/L, R,R, M/S
Gate	
Sidechain	Self-key or source selectable, with 12dB/octave Lo-Pass and Hi-Pass
Threshold	-72dBu to +12dBu
Depth	0 to 60 dB
Attack	50us to 300ms
Hold	10ms to 5s
Release	10ms to 1s
Insert	In/Out, +4dBu/-10dBV level
PEQ	
Type	8-Band fully parametric, +/-15dB
Band 1 - 8	Selectable LF/HF Shelving, Bell (variable or constant Q), Hi-Pass / Lo-Pass, Notch
Bell Width	0.50 – 6.00 Q
Shelving Type	Classic Baxandall
Hi-Pass, Lo-Pass Filter	12dB/octave
Compressor	Peak or RMS sensing
Sidechain	Self-key or source selectable, with 12dB/octave Lo-Pass and Hi-Pass
Threshold	-46dBu to 18dBu
Compressor parameters	Threshold, Ratio, Attack, Release
Delay	Up to 683ms

ZONE PROCESSING

Up to 64 Zones	Configurable mono or stereo
Source Selector	Up to 20 sources, variable level, Fade In and Fade Out time <20s
Insert	In/Out, +4dBu/-10dBV level
GEQ	28 bands 31Hz -16kHz, +/-12dB, constant-Q
PEQ	See Input Processing
Compressor	See Input Processing
Delay	Up to 683ms
ANC	
Ambient Level	Selectable source and metering point, Gain Differential -18dB to 40dB
Gap	Selectable source and metering point, Threshold -62dB to -20dB, Time 0-5000ms
Gain Element	Min / Max Gain, Rate 0-30dB/s
Limiter	Variable Threshold, Attack and Release

SPEAKER PROCESSING

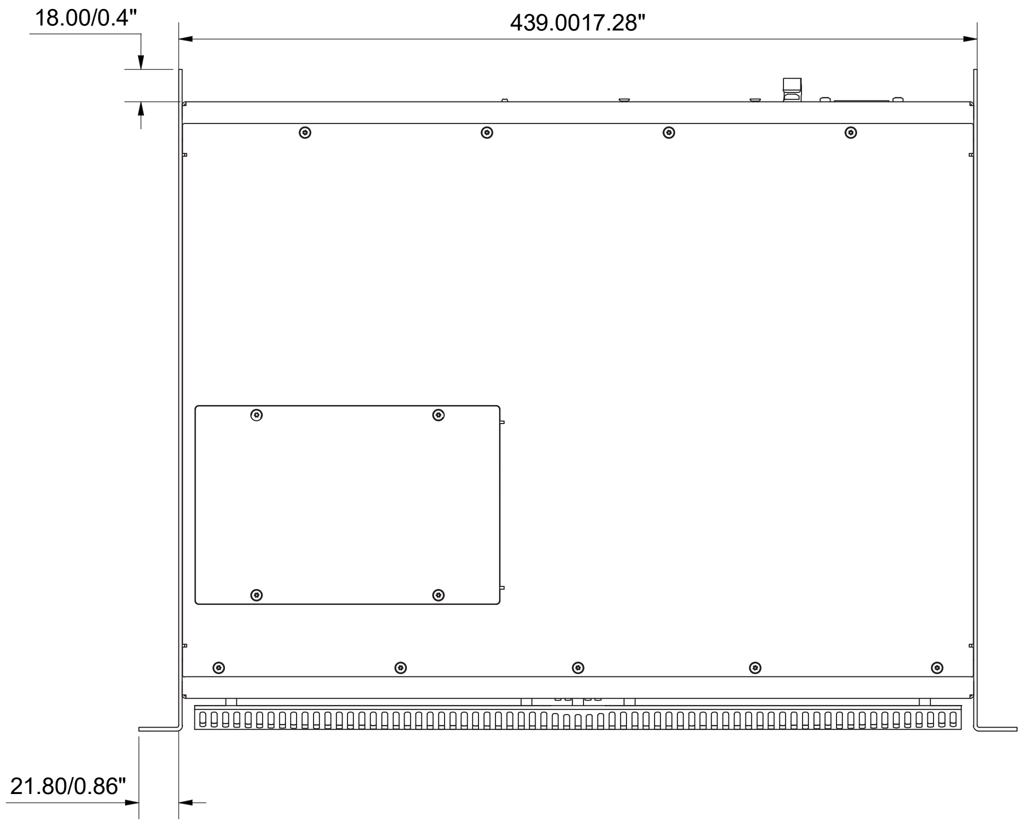
Crossovers	Configurable 2, 3, 4 way
Filters	Asymmetrical, selectable 1st order, Butterworth 12/18/24 db/octave, LR 12/24 dB/octave
PEQ	4-Band fully parametric
Delay	Up to 683ms
Limiter	See Zone Processing

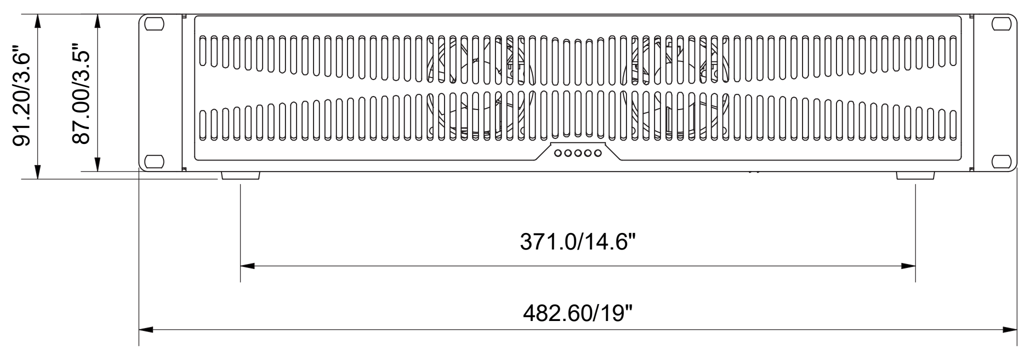
AMM

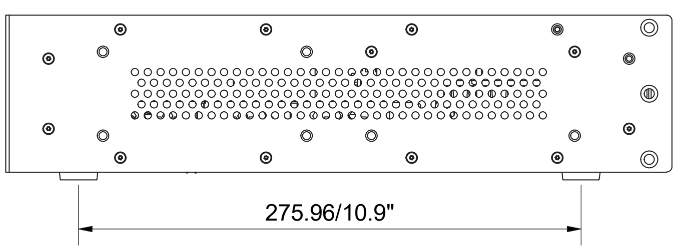
Channels	1x64, 2x32, 4x16 or 8x8
Modes	D-Classic gain sharing or NOM

AHM64 — ALLEN&HEATH

DIMENSIONS







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