ecler

HUB1616

DIGITAL MATRIXES

16 outputs digital zoner with DSP

PRODUCT OVERVIEW

HUB1616 is a digital zone manager with 16 inputs and 16 outputs, an evolution of its predecessor eMIMO1616. It has the HANGAR embedded web-server application (control from standard web browser in Windows / MacOS, etc.) for its configuration; remote control from physical wall installation panels, call (paging) stations and applications for mobile devices (Android, iOS). Includes DSP with specific functions for both inputs and outputs.

HUB Series offers multiple possibilities, being intuitive and easy to configure. From the least experienced user to the most expert, you can set up a professional audio installation in a matter of minutes (Plug & Play). It is the perfect solution for any type of sound that requires managing and controlling different zones.

KEY FEATURES

- 16 inputs, 16 outputs digital zoner with integrated DSP
- Easy programming and control by embedded web application, HANGAR, and standard web browser
- Control from the front panel and user remote control by:
  - eMCONTROL1 wall panels (up to 8)
  - eMPAGE paging consoles (up to 2)
  - Ecler pilot application, compatible with Android and iOS: control graphic panels set to user needs (pilot panels)
  - TP-NET protocol (RS-232 interface with DB9 connector) for control and integrating with third party systems
- Control available, by zone (output): selection of audio source (input), volume adjustment and MUTE, 3 band tone adjustment and general volume
- Four priority levels, ducker/pager functions
- Available DSP: frequency shifter, link stereo, delay, crossover filters, 8-band graphic EQ, compressor/limiter and much more
- Predefined setups for a quick installation (plug and play)
- MUTE port can be activated by closing the external dry contact, affecting programmed outputs to this effect

APPLICATIONS

- Commercial
- Hospitality
- Education
- Corporate
- Sports and wellness

ACCESSORIES & COMPATIBLE DEVICES

- eMPAGE
- eMCONTROL1

eMPAGE

eMCONTROL1

TECHNICAL SPECIFICATIONS

HUB1616

DIGITAL	
DSP	
CPU	Floating point 32/64bit
Sampling rate	48 kHz
Latency	<1.5 ms.
Converters	
Resolution	24 bit, AKM
Dynamic range	AD:111dB, DA: 115dB
ANALOGUE	
Input 1, 2, 3, 4 (Line)	
Sensitivity	+5 / -15dBV External potentiometer adjust
Impedance	>13k
Input headroom	12dBV
Connector	RCA female. Input 1 and 2 with Euroblock stack
Type	Unbalanced
Input 5, 6, 7, 8 (Mic/Line)	
Sensitivity	+0 / -50dBV External potentiometer adjustment
Impedance	>24k electronically balanced
Input headroom	12dBV
Connector	Euroblock (Symmetrical)
Type	Balanced
Pagers	Input 7 and 8 (by RJ45 connector)
Phantom	+48VDC (rear panel switch)
CMRR	>60dB (20Hz - 20kHz)
Input 9 to 16 (Remote Input)	
Sensitivity	0 dBV without adjustment
Impedance	>24k electronically balanced
Input headroom	12dBV
Connector	RJ45 Connector
Type	Balanced
CMRR	>60dB (20Hz - 20kHz)
Outputs 1 to 16 (Line)	
Max output level	12dBV
Connector	Euroblock 3-pin
Type	Balanced
Headphones output	
Selectable output	From Out1 to Out16
Power	>200mW – 200Ω
Connector	Mini-Jack 3,5mm

General	
External mute	Normally open. Assignable to any output zone
Frequency response	<10Hz ~ 20kHz (+0dB / -0.5dB)
Output noise floor (FFT)	>110dB (from 20Hz to 20kHz)
THD + Noise)	< 0.005% (1kHz, 1Vrms)
Crosstalk	>90dB, 20Hz - 20kHz
CMRR	>60 dB Typical
Flatness	Better than ±0.1dB

PROCESSING	

Input level (x16)	
Volume	From Off to 0 dB
Mute	On-Off
Metering	Vumeter post fader
Stereo	On-Off (Inputs 5 to 8)
Polarity	On-Off
High pass filter	50Hz to 150Hz (Inputs 5 to 8)
Frequency shifter	On-Off ; 5Hz (Inputs 5 to 8)

Noise gate (x4)	
Inputs	Input 5 to 8, Bypass ON - OFF
Threshold	From -80dBV to +12dBV
Depth	From 0 dB to 80 dB
Attack	From 0.1ms to 500ms
Hold	From 10ms to 3000ms
Release	From 10ms to 1000ms

Input EQ (x16)	
Type	Baxandall 3 way EQ
Gain	-10dB ~ +10dB in 0.1dB steps
Frequency	Low 200Hz Mid 1kHz High 6.3kHz

Output level (x16)	
Volume	From Off to 0 dB
Mute	On-Off
Metering	Vumeter post fader
Stereo	On-Off
Polarity	On-Off

Output EQ (x16)	
Type	Baxandall 3 way EQ
Gain	-10dB ~ +10dB in 0.1dB steps
Frequency	Low 200Hz Mid 1kHz High 6.3kHz

Output graphic EQ (x16)	
Type	8-Band Graphic EQ
Gain	-10dB ~ +10dB in 0.1dB steps
Frequency	63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz
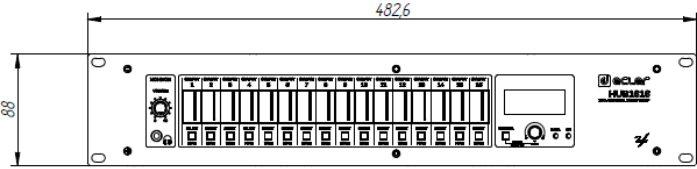
Output compressor (x16)

Bypass	On-Off
Mode	Compressor / Limiter
Threshold	-36 dB to +12 dB
Ratio	1 to 100
Knee	Soft / Hard
Attack	0.1ms to 500ms
Release	10ms to 1000ms
Make-up gain	0 dB to 10 dB

Output delay (x8)

Outputs	1 to 8
Bypass	On-Off
Delay	0 to 300ms
Unit	ms, meters, feet

Output crossover (x8)

Outputs	1 to 8
Bypass	On-Off
Mode	High Pass Filter / Low Pass Filter
Frequency	20Hz to 20kHz

General volume

Volume	From Off to 0dB
Selectable outputs	Out 1 – Out 16

Ducker

Input	IN5 to IN8. In 7 and 8 selectable: DUCKER or PAGER
Outputs	Selectable: 1-16 zones
Priority	Four levels (1max-4min)
Priority volume	-40 dB to +6 dB
Threshold	-80dB to +12dB
Depth	0dB to 80 dB
Attack	5ms to 2000ms
Release	50ms to 3000ms
Hold	10ms to 3000ms

Pager

Input	IN7 and IN8 selectable: DUCKER or PAGER
Outputs	Selectable: 1-16 zones
Functions	Two function buttons (F1, F2)
Priority	Four levels (1max-4min)
Priority volume	-40 dB to +6 dB
Chime volume	-12dB to +0dB
Chime melody	None, Melody 1, Melody 2
Depth	0dB to 80 dB
Attack	5ms to 2000ms
Release	50ms to 3000ms

Pilot panels

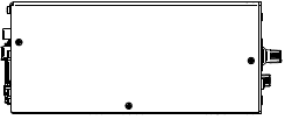|	
General	On-Off, Public, Label, Users and Zone
Volume control	On-Off, Label and Style
Source selection	On-Off, Label and Allowed sources
Equalizer	On-Off, Label, and Style
Color	Controls, Text and Background

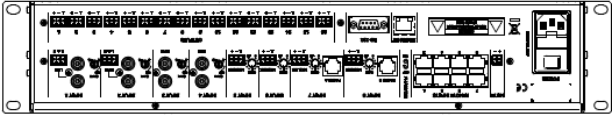| OTHERS	
Mechanical	
Dimensions (WxHxD)	482.6 x 88.0 x 200.0 mm / 19.0 x 3.5 x 7.9 in.
Weight	3,66kg / 8.07 lb.
Power supply	
Mains	90-240 VAC, 50-60Hz
Power consumption	20W
Connectivity	
Management Connectivity	Ethernet Base-Tx 10/100Mb Auto X-Over CAT5 up to 100m
Remote bus	RS485
Aux. Power Supply for Remotes	+12VDC, 0,6A max. (short circuit protected)
Programming and control	Hangar (embedded web application), Ecler pilot (Android/iOS application), TPNET (UDP/RS232)
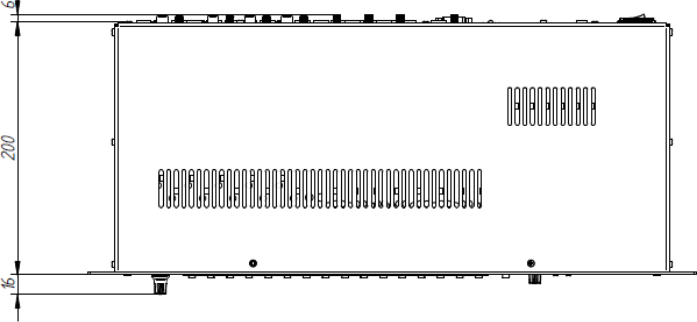
MECHANICAL DIAGRAMS
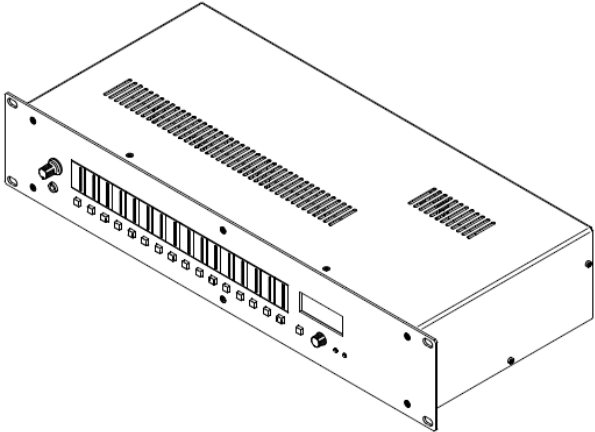
Ecler HUB1616 Mechanical Diagram

All the measurments are in mm

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A&E SPECIFICATIONS

The Multi-Zone audio system shall comprise of 8 independent controllable output zones, 8 audio inputs, containing 4 balanced microphone inputs with priority function and phantom power possibility, and 8 remote audio inputs with RJ45 connection. The zone outputs shall be balanced and equipped with Terminal Block connectors.

Remote management shall be available via mobile devices. Remote control from third-party systems shall be available using TP-NET control protocol through Ethernet o RS-232 ports. The digital zoner shall include a factory setup and predefined configuration management for a plug & play installation. The system shall include an integrated webserver on which a fully functional web-based user interface is running, which can be accessed through a web browser without any special software requirement. Standard functions of the device shall be controllable via additional connected wall-panels and mobile devices, while the configuration settings of the device shall be controllable via third party devices using the TCP/IP, RS-232 connectivity possibilities.

On the front panel, the zoner shall include Power ON and Data status LEDs, outputs signal level indicator, monitor output jack and monitor level knob. On the rear panel, the matrix shall include power on switch, 2 analogue balanced (Euroblock connector) or unbalanced (RCA connectors) inputs, 2 unbalanced (RCA) line inputs,   4 balanced mic/line inputs, 2 pager RJ45 ports, phantom switch, 8 RJ45 remote inputs and 16 zone outputs (Euroblock connector). Also, a MUTE dry contact, RS-232 port (DB9 connector) and Ethernet RJ-45 port.

All internal processing shall be digital (DSP). Audio conversion shall have a resolution of 24-bit, and sampling rate should be 48 kHz in an architecture of 32/64 bit. The dynamic range shall not be lower than 111 dB for AD conversion and 115 dB for DA conversion. The DSP shall include treatment of channels in mono or stereo mode, level, mute, vumeters and phase adjustment in inputs and outputs, polarity test), 8 band parametric EQ, delays, noise gate, compressor on input channels, compressor / limiter on outputs, 4 priority levels (ducking) between input channels, and management of 2 physical paging consoles.

The zoner shall operate on a 100-240V AC - 50/60 Hz mains network and shall be equipped with a removable power cord having a standard shuko (CEE 7/7) AC plug. The connector on the zoner chassis shall be a fused IEC C14 type. The zoner chassis shall be a two rackspace 19" housing. Depth from mounting surface to rear supports shall be 200 mm and the weight shall not exceed 3,66 Kg.

The digital zoner shall be the ECLER HUB1616.