

# MXE5 DSP matrix mix engine 24x24 channels



- DSP matrix mixer focused on performance audio
- Combining matrix control with mixing functionality
- 24x24 matrix with Dante/OCA
- Controlled via SONICUE
- 12 mic/line inputs, 8 line outputs

The MXE5 Matrix Mix Engine is a 24 x 24 audio matrix and system controller with professional sound quality, intuitive zone mixing features, Dante network and AES70 control. Featuring leading-edge 48 / 96 kHz signal processing, extremely low audio signal latencies, professional routing and mixing functionalities, it is the perfect fit for venues requiring high quality foreground music, such as stadiums and sports facilities, live music venues, contemporary churches, performing art centers, theatres, conference centers and clubs.

MXE5 is completely integrated into Dynacord's SONICUE Sound System Software for easy control. Dedicated user control is possible via the Touch Panel Controller with intelligent zone control and unique universal wall box compatibility.

## Parts included

Quantity	Component
1	MXE5 DSP Matrix Mix Engine
10	6-pin Euroblock-type connector, inputs/outputs
1	15-pin Euroblock-type connector, control port/ GPIO
2	Mains input AC power cables, US- and EU-types
1	Installation manual
1	Safety instruction booklet

## Technical specifications

### DESCRIPTION AND FEATURES

<b>MXE5 DSP Matrix Mix Engine</b>	Audio system manager with integrated matrix mixing, signal processing, network routing, system control and supervision
<b>Audio</b>	24 x 24 channel audio mix matrix 12 analog inputs, 8 analog outputs 24 OMNEO / Dante network inputs and outputs
<b>Safety / Redundancy</b>	Internal supervision, system monitoring, watchdog, fault output Redundant audio networking supported
<b>Configuration and Control Software</b>	SONICUE audio system design and control application Integration of MXE series, remote amplifiers, loudspeakers, peripheral devices Configuration, control, and monitoring for complete audio systems Programmable user control panels and access levels

### AUDIO SPECIFICATIONS

#### Frequency Response

ref. 1 kHz, analog in to analog out, 48 kHz	20 Hz to 20 kHz ( $\pm 0.5$ dB)
---	---------------------------------

ref. 1 kHz, analog in to analog out, 96 kHz	20 Hz to 40 kHz ( $\pm 0.5$ dB)
---	---------------------------------

#### Signal to Noise Ratio

A-weighted, analog input	> 118 dB
--------------------------	----------

A-weighted, analog output	> 118 dB
---------------------------	----------

A-weighted, analog input to analog output	> 115 dB
---	----------

<b>EIN</b> Equivalent Input Noise	< -128 dB
-----------------------------------	-----------

20 Hz to 20 kHz, A-weighted	
-----------------------------	--

<b>THD+N</b>	< 0.002 %
--------------	-----------

1 dB below max., @ 1 kHz	
--------------------------	--

<b>Common Mode Rejection</b>	> 70 dB
------------------------------	---------

@ 1 kHz, nominal Level	
------------------------	--

<b>Phantom Power</b>	+48 V / 10 mA, switchable per analog input
----------------------	--

Voltage @ Current	
-------------------	--

<b>Input gain</b>	0 dB to +60 dB
-------------------	----------------

Analog inputs	
---------------	--

### DIGITAL SIGNAL PROCESSING

<b>Sampling rate</b>	48 kHz / 96 kHz, OMNEO / Dante synchronized
----------------------	---

#### Signal Delay / Latency

Analog In to Analog Out, 48 kHz / 96 kHz	< 0.45 ms / < 0.22 ms
--	-----------------------

<b>Signal Processing</b>	32/40 bit, floating point
--------------------------	---------------------------

Filter	PEQ, Lopass, Hipass, Loshelv, Hishelv, X-Over, FIR
--------	--

Dynamics	Ducker, Compressor, Noisegate
----------	-------------------------------

Limiter	Peak (PA) limiter, RMS / TEMP limiter
---------	---------------------------------------

Pilot tone	Generator, Detector with Notch
------------	--------------------------------

Generators	Sine, Pink noise, White noise
------------	-------------------------------

Mixer/Router	Router, Mixer, Matrix Mixer
--------------	-----------------------------

Misc	VU Meter, Level, Polarity, Mute, Delay
------	--

Special Algorithms	Speaker Processing
--------------------	--------------------

#### Memory

DSP Presets	60
-------------	----

### CONNECTIVITY

#### Analog Audio Input / Output

Type	12 mic/line level inputs, 8 line level outputs, electronically symmetric
------	--

Connectors	10 x 6-pole Euroblock connectors, 2 channels each
------------	---

Nominal Input / Output Level	+6 dBu / 1.55 V
------------------------------	-----------------

Maximum Input / Output Level	+22 dBu / 9.7 V
------------------------------	-----------------

Reference level equal to digital input	+22 dBu for 0 dBFS
--	--------------------

Input Impedance, active balanced	2.2 k $\Omega$
----------------------------------	----------------

Output Impedance, active balanced	47 $\Omega$
-----------------------------------	-------------

Min. Load Impedance	600 $\Omega$
---------------------	--------------

#### Network

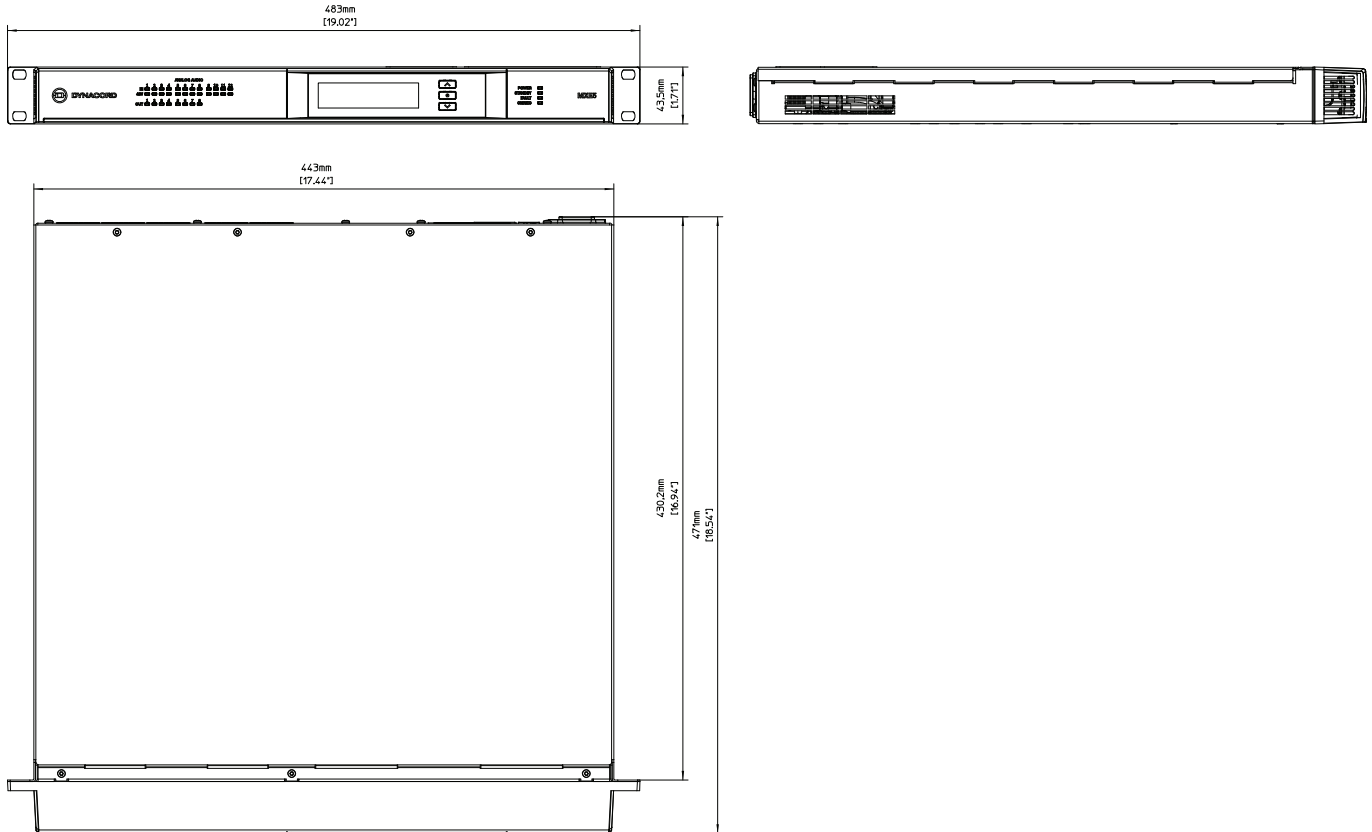
Type	3 x RJ45
------	----------

Standards	1000base-T / 100base-TX, integrated switch
-----------	--

Network Audio Inputs	24 channels, 48 kHz / 96 kHz, OMNEO/Dante format
----------------------	--

Network Audio Outputs	24 channels, 48 kHz / 96 kHz, OMNEO/Dante format
<b>GPIO Control Port</b>	
Type	15-pole Euroblock connector
Ports and Operating Modes	8 x GPIO, switchable Analog In / Digital In / Digital Out
Analog Input Range	0 V to +11 V, 110 kΩ input resistance
Digital Inputs	ON: < 1.5 V OFF: > 2.0V, internal pull-up (10 kΩ)
Digital Outputs	ON: Output switched to GND, max. 200 mA OFF: Open Collector (110 kΩ to GND)
Reference Voltage Output	+10 V, max. 200 mA, supervised, short circuit protected
READY / FAULT contact	Galvanic isolated relay, max. 30 VDC / 500 mA
<b>Mains Input</b>	1 x IEC appliance inlet
<b>USER INTERFACE</b>	
Display	Black/white OLED 256 x 64 pixel
Front panel indicators	12 x Input LEDs (Signal/Clip) 12 x Phantom Power LEDs (+48 V) 8 x Output LEDs (Signal/Clip) 4 x status LEDs (POWER, STANDBY, FAULT, OMNEO)
Front panel operating elements	3 push buttons (UP, ENTER, DOWN)
Rear panel indicators	1 x status LED (STATUS)

Rear panel operating elements	Mains Switch
<b>GENERAL SPECIFICATIONS</b>	
<b>Power Requirements</b>	100 V to 240 V, 50 Hz to 60 Hz AC
<b>Power Consumption</b>	
Operating Mode	50 W typical, 55 W max
Standby Mode	< 27 W
<b>Protections</b>	High Temperature, Mains Over-/Undervoltage Protection
<b>Cooling</b>	Front-to-rear, temperature controlled fan
<b>Ambient Temperature Limits</b>	-5 °C to +45 °C (+23 °F to +113 °F)
<b>Operating Altitude</b>	2000 m
<b>IEC Protection Class</b>	Class I (grounded)
<b>Electromagnetic Environment</b>	E1, E2, E3
<b>Certifications</b>	CE, IEC 62368, IEC 60065, CAN/CSA 60065:16, UL Std No. 60065-2015, EN55032, EN61000-3-2, EN61000-3-3, EN55103-2, FCC Part 15 Class B, ICES-003, RoHS/WEEE compliant
<b>Color</b>	Black
<b>Dimensions (W x H x D)</b>	483 x 43.5 x 471 mm (19", 1 HU)
<b>Weight</b>	6.0 kg (13.2 lb)
<b>Shipping Weight</b>	8.1 kg (17.9 lb)



Dimensions: MXE5

## Ordering information

### MXE5 DSP matrix mix engine 24x24 channels

12 mic/line, 8 line outputs, 24x24 Dante channels,  
48kHz / 96 kHz sample rate, GPIO and OCA controller  
Order number **MXE5**

#### Germany:

Bosch Sicherheitssysteme GmbH  
Robert-Bosch-Ring 5  
85630 Grasbrunn  
Germany

Bosch Security Systems, Inc.  
130 Perinton Parkway  
Fairport, NY 14450  
USA

[www.dynacord.com](http://www.dynacord.com)