MXE5-64 DSP matrix mix engine 76x72 channels
MXE Series

- Open architecture DSP matrix for high performance audio applications

- 12 mic/line inputs, 8 line outputs, 8 configurable GPIOs

- 64 x 64 Dante channels

- TaskEngine for sophisticated system control and integration

- Integrated into SONICUE Sound System Software

The MXE5-64 Matrix Mix Engine is an open architecture audio matrix and system controller with professional sound quality, Dante/AES67 audio network and AES70/OCA for 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, theaters, conference centers and clubs.
MXE5-64 is fully integrated into Dynacord's SONICUE Sound System Software for easy control. Dedicated user control panels can be designed in SONICUE Control and operated via SONICUE panel viewer app on PCs iOS-devices, the TPC-1 touch panel controller, or the WPN1 wall panel.

Parts included

Quantity	Component
1	MXE5-64 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	Important safety instructions booklet

Technical specifications

Description and features	
MXE5-64 DSP Matrix Mix Engine	Audio system manager with integrated matrix mixing, signal processing, network routing, system control and supervision. Free DSP configuration with up to 3840 x-points and 256 signal paths. TaskEngine for sophisticated system control and integration.
Audio	12 analog inputs, 8 analog outputs
	64 Dante network inputs and outputs
	64 flows
Safety and redundancy	Internal supervision, system monitoring, watchdog, fault output
	Redundant audio networking supported
Configuration and control software	SONICUE Sound System Software (>=1.4) for design, configuration, control and supervision.
	Creation of customized control panels and system automation with MXE's TaskEngine

Audio	
Frequency response	

Audio

ref. 1 kHz, analog in to analog out, 48 kHz	20 Hz to 20 kHz (±0.5 dB)
ref. 1 kHz, analog in to analog out, 96 kHz	20 Hz to 40 kHz (±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
EIN Equivalent Input Noise	
20 Hz to 20 kHz, A-weighted	< -128 dB
THD+N	
1 dB below max., @ 1 kHz	< 0.002 %
Crosstalk	
1 dB below max., @ 1 kHz	< -105 dB
Common mode rejection	
@ 1 kHz, nominal Level	> 70 dB
Phantom power	
Voltage @ Current	+48 V/10 mA, switchable per analog input
Input gain	
Analog inputs	0 dB to +60 dB

Digital signal processing

Sampling rate	48 kHz/96 kHz, OMNEO/Dante synchronized
CPU	2x SHARC ADSP-21469@450 MHz
Processing power	900 MIPS, 5.4 GFLOPS
Delay	348 seconds
Signal delay/Latency	
Analog In to Analog Out, 48 kHz/96 kHz	< 0.45 ms/< 0.22 ms
Signal processing	32/40 bit, floating point
Filter	PEQ, Lopass, Hipass, Loshelv, Hishelv, X-Over, FIR
Dynamics	Ducker, Compressor, Noisegate, AGC, ANC
Limiter	Peak (PA) limiter, RMS/TEMP limiter
Pilot tone	Generator, Detector with Notch
Generators	Sine, Pink noise, White noise
Mixer/Router	Router, Matrix mixer, auto mixer
Misc	VU Meter, Level, Polarity, Mute, Delay
Special algorithms	FIR-Speaker processing
Memory	
DSP presets	60

Connectivity

Analog audio input/output	
Type	12 mic/line level inputs, 8 line level outputs, electronically symmetric
Connectors	10x 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 kΩ
Output impedance, active balanced	47 Ω
Min. load impedance	600 Ω
Network	
Type	3x RJ45
Standards	1000base-T/100base-TX, integrated switch
Network audio inputs	64 channels, 48 kHz/96 kHz, Dante format, 64 flows
Network audio outputs	64 channels, 48 kHz/96 kHz, Dante format, 64 flows
GPIO control port	
Type	15-pole Euroblock connector
Ports and operating modes	8x 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: > 2.0 V, 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
Mains input	1x IEC appliance inlet

User interface

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)

User interface

Rear panel operating elements	Mains switch
Display	Black/white OLED 256 x 64 pixel

General specifications

Power requirements	100 V to 240 V, 50 Hz to 60 Hz AC
Power consumption	
Operating mode	50 W typical, 55 W max
Protections	High temperature, Mains over-/ undervoltage protection

General specifications

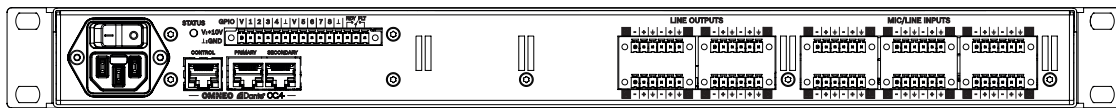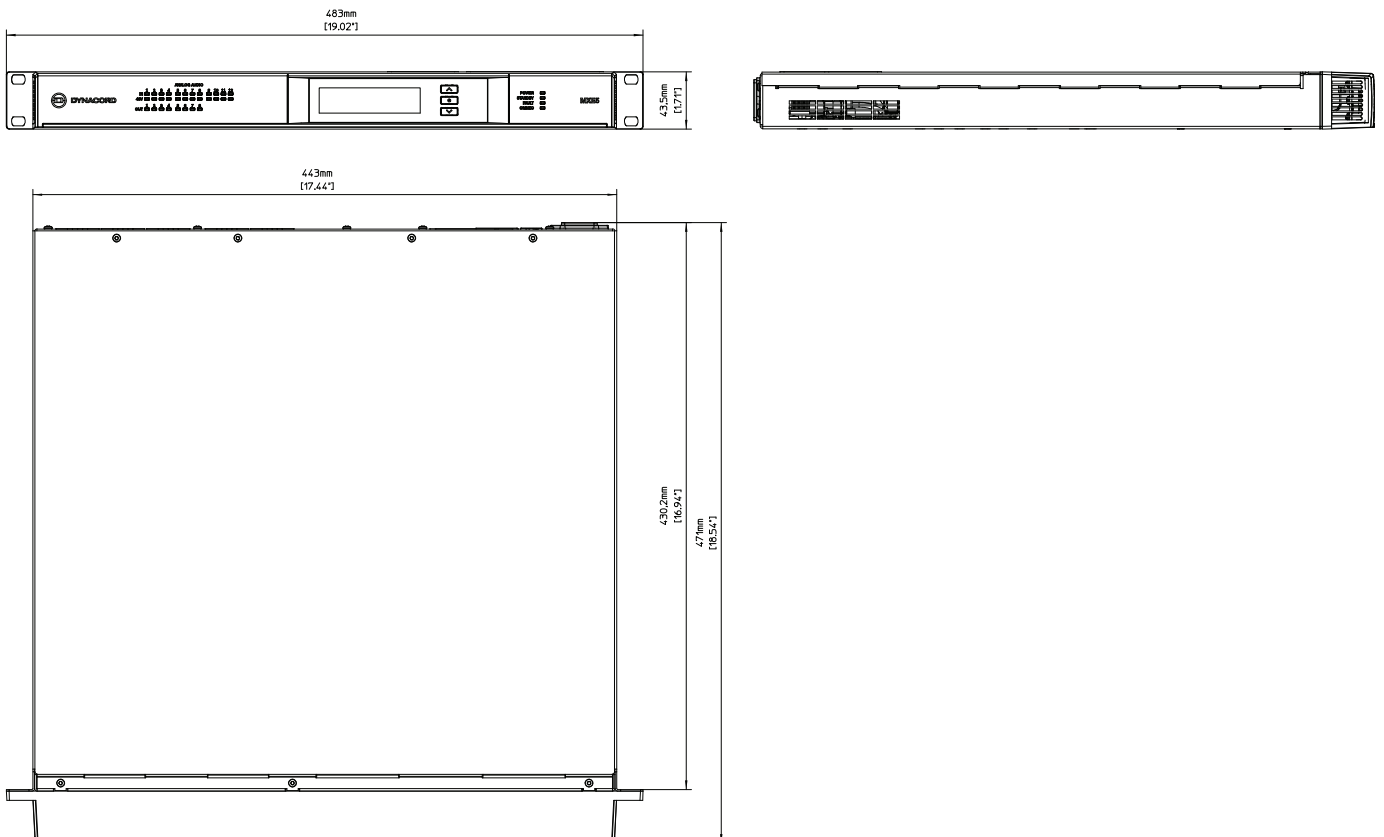|	
Cooling	Front-to-rear, temperature controlled fan
Ambient temperature limits	-5 °C to +45 °C (+23 °F to +113 °F)
Operating altitude	2000 m
IEC protection class	Class I (grounded)
Electromagnetic environment	E1, E2, E3
Color	Black
Dimensions (W x H x D)	483 x 43.5 x 471 mm (19", 1 RU)
Weight	6.0 kg (13.2 lb)
Shipping weight	8.1 kg (17.9 lb)

Fig. 1: Rear panel

Fig. 2: Dimensions

Ordering information

MXE5-64 DSP matrix mix engine 76x72 channels
Twelve mic/line, 8 outputs, 64 x 64 Dante channels,
48/96 kHz sample rate, 8 GPIO, OCA controller.
Order number **MXE5-64 | F.01U.424.586**

Accessories

CP-MXE Professional connector panel for MXE
Professional connector panel for MXE
Order number **CP-MXE | F.01U.385.745**

TPC-1 Touch panel controller 5.7"
Full HD TFT touch panel, POE, for control panels created
in SONICUE sound system software
Order number **TPC-1 | F.01U.384.715**

WPN1-EU Wall panel controller networked, EU
Wall panel controller with 1.77-inch display and encoder
for use with SONICUE Control Server devices, PoE, ships
with white and black front covers and wall plates
Order number **WPN1-EU | F.01U.388.087**

WPN1-US Wall panel controller networked, US
Wall panel controller with 1.77-inch display and encoder
for use with SONICUE Control Server devices, PoE, ships
with white and black front covers
Order number **WPN1-US | F.01U.394.578**