

MAXX SERIES

MA16 LP²

MA24 LP²

MA32 LP²



DATASHEET

AUDIO

Power Stage	Half-Bridge GaN amplifier (Gallium nitride)		
Output Power (EIAJ Test Standard 1kHz 1% THD)	4Ω		8Ω Bridge-Mode
	50W		100W
Max output Voltage	24 V _{peak}		48 V _{peak}
Max output Current Limited	10 A _{peak}		
Emergency Shutdown Current	15 A _{peak}		
DC Offset	<25mV		
Frequency response	10Hz-20kHz / 4-8Ω: +0.0 -1.5dB		
S/N typ	108dBA		
Analog Gain	Software Adjustable, 0dBFS on any Input Interface: 20V _p - 60V _p (default: 32V _p)		
THD+N @ 4Ω	1W		10W
	< 0.05%		< 0.1%
SMPTE IMD	< 0.1%		
CCIF IMD	< 0.1%		
Output impedance	typ 60 mΩ		
Crosstalk	channel enabled		channel disabled
	typ < 70dB	typ 90dB (distant channels)	typ < 120dB
Protection	Overtemperature, DC and Overcurrent		

DSP

Architecture	FPGA based 32-bit fixed point
Inputs	16 x input matrix per channel (DANTE / AES67 via Dante Module / AES3 / MADI)
	sine, white- pink- brown-noise
Level Control	Mute, Volume, Phase
Filter per channel	32 x EQ / Highpass / Lowpass
Filter types	bell, notch, highshelf, lowshelf, allpass 1th / 2nd order
High- Lowpass types	6 - 48dB/Oct, Bessel, Butterworth, Linkwitz/Riley, Variable Q
FIR Filter	2048 Tabs, ASCII file import
Fraction Delay	48000 Samples / 330m / 1000ms (resolution 0.001 units) per channel
CurrentLimiter	Threshold [Ap]
VoltageLimiter	2 x Threshold [Vp], Attack, Release
Powerlimiter	Threshold [W], Attack, Release
SpeakerDetection	20kHz Pilot Tone generating with Volume, Threshold, Debounce
Master Volume	Volume control over all channels
Master Mute	Global Mute, can also be automatically set at every boot
Remote Mute	Feed a GPI state via a failsafe UDP protocol to use as an emergency hardware mute for multiple devices

	Latency @ 44k1 / 48kHz to Analog
digital input / without ASRC on AES3	41 samples, (24 samples DSP + 17 samples DAC)
Input	Latency @ 44.1kHz to Analog
DANTE / MADI	0.930 ms
AES3@44.1kHz	2.028 ms
AES3@48kHz	1.996 ms
AES3@88.2kHz	1.811 ms
AES3@96kHz	1.797 ms

Input	Latency @ 48kHz to Analog
DANTE / MADI	0.854 ms
AES3@44.1kHz	2.021 ms
AES3@48kHz	1.854 ms
AES3@88.2kHz	1.690 ms
AES3@96kHz	1.6875 ms
Input	Latency @ 88.2kHz to Analog
DANTE / MADI to Analog	0.896 ms
AES3@44.1kHz	2.008 ms
AES3@48kHz	1.916 ms
AES3@88.2kHz	1.432 ms
AES3@96kHz	1.416 ms
Input	Latency @ 96kHz to Analog
DANTE / MADI	0.823 ms
AES3@44.1kHz	1.952 ms
AES3@48kHz	1.856 ms
AES3@88.2kHz	1.365 ms
AES3@96kHz	1.330 ms

CONNECTOR

Control input connectors	RJ45 (1Gbit/s Ethernet)
Audio signal input connectors	RJ45 (DANTE / AES67), BNC 75R (MADI Coax, AES3id), SC Optic (MADI Fibre)
Speaker connector	Wuerth Elektronik 691352710002
	Phoenix Contact MSTB 2,5/ 2-ST - 1754449
	Phoenix Contact MSTB 2.5/16-ST-5,08 - 1757158
AC mains	IEC C14 inlet, IEC C13 plug

AC MAINS POWER

Power supply	Universal, regulated switch mode with PFC (Power Factor Correction)
Operating Voltage	90 - 264VAC 50/60Hz
AC Current typ.	4.85A
Inrush Current	60A max.
Suggested circuit breaker	B16
Earth Leakage Current	<0.75mA / 240V

32 CH Version		
Power Factor	@230V	@110V
amps power off	0.46	0.85
idle	0.64	0.95
1/8 power @ 4 Ohm	0.96	0.98
Consumption / current draw	@230V	@110V
amps power off	29W, 0.13A	29W, 0.26A
idle	56W, 0.24A	57W, 0.54A
1/8 power @ 4 Ohm	322W, 1.4A	332W, 3.0A

24 CH Version		
Power Factor	@230V	@110V
amps power off	0.44	0.83
idle	0.58	0.93
1/8 power @ 4 Ohm	0.94	0.99
Consumption / current draw	@230V	@110V
amps power off	26W, 0.11A	26W, 0.24A
idle	46W, 0.20A	38W, 0.35A

1/8 power @ 4 Ohm	241W, 1.05A	247W, 2.25A
16 CH Version		
Power Factor	@230V	@110V
amps power off	0.41	0.81
idle	0.52	0.90
1/8 power @ 4 Ohm	0.89	0.99
Consumption / current draw	@230V	@110V
amps power off	23W, 0.10A	24W, 0.22A
idle	36W, 0.16A	38W, 0.35A
1/8 power @ 4 Ohm	152W, 0.66A	164W, 1.49A

THERMAL

Enviromental operating temperature	0 - 40°C			
Thermal dissipation	Fan, variable speed, temperature controlled front to rear airflow / passiv cooled			
	32 CH			
	@230V		@110V	
amps power off	24 kcal/h	95 BTU/h	24 kcal/h	95 BTU/h
idle	49 kcal/h	194 BTU/h	50 kcal/h	198 BTU/h
1/8 power @ 4 Ohm	104 kcal/h	412 BTU/h	105 kcal/h	416 BTU/h
	24 CH			
	@230V		@110V	
amps power off	22 kcal/h	87 BTU/h	22 kcal/h	87 BTU/h
idle	40 kcal/h	159 BTU/h	40 kcal/h	159 BTU/h
1/8 power @ 4 Ohm	78 kcal/h	309 BTU/h	79 kcal/h	313 BTU/h
	16 CH			
	@230V		@110V	
amps power off	19 kcal/h	75 BTU/h	19 kcal/h	75 BTU/h
idle	30 kcal/h	119 BTU/h	32 kcal/h	127 BTU/h
1/8 power @ 4 Ohm	43 kcal/h	171 BTU/h	44 kcal/h	174 BTU/h

USER INTERFACES

Hardware	Multicolor LED, LCD Display with 6 navigation Keys
Software	Webpage, RESTful-API
Third Party Plugins	Q-SYS, Loxone

GPI / General Purpose Input	Failsafe remote mute protocol via external GPI device to mute the amplifier via an GPI
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DIMENSIONS / WEIGHT

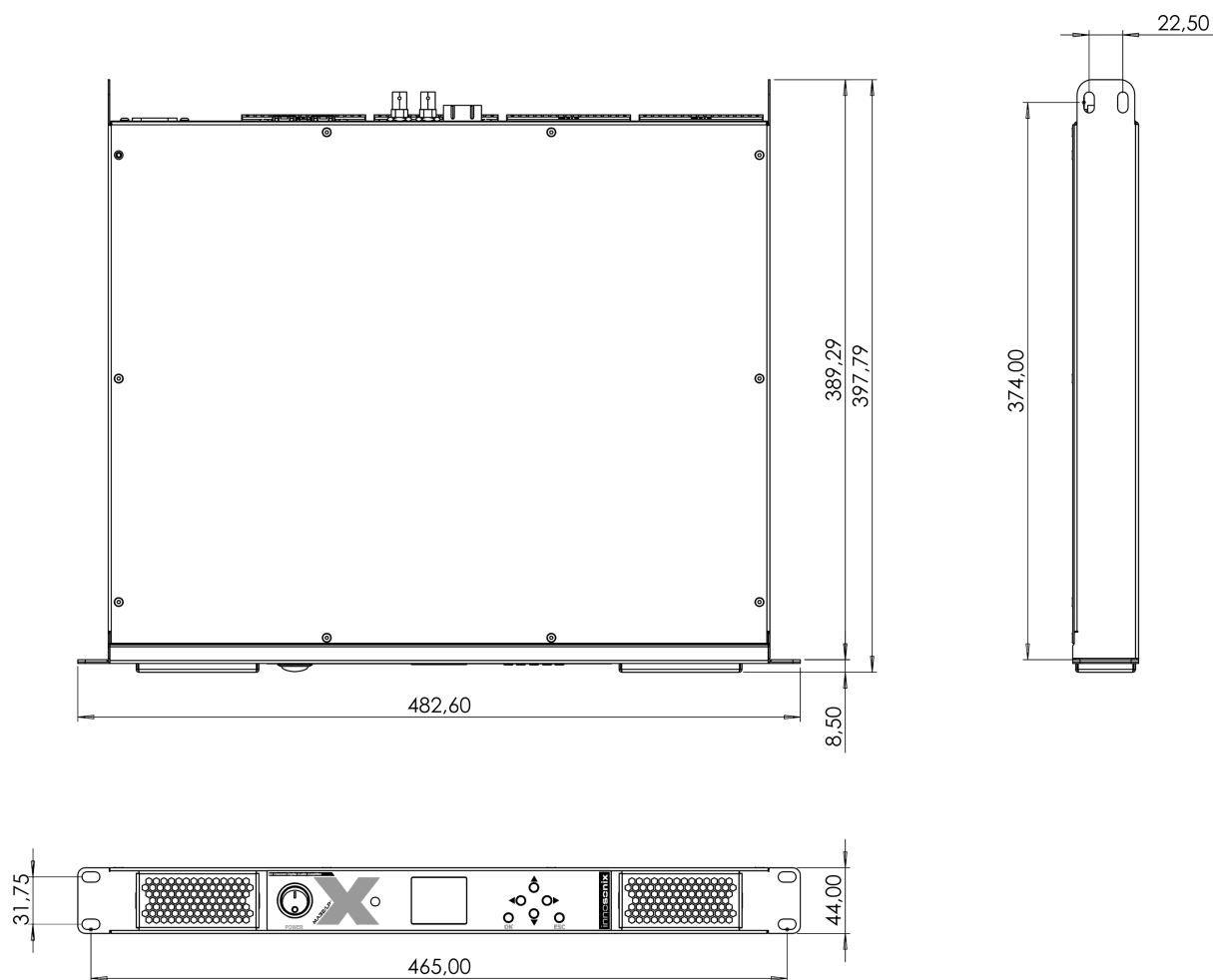


Figure 1. MAXX/LP² dimensions

Dimensions	W 482.60mm (19") H 44.00mm (1 RU), D 389.29mm		
	32CH	24CH	16CH
Weight	6.0 kg	5.7 kg	5.4 kg
Dimensions Boxed	68 x 53 x 25 cm		
Weight Boxed	9.0 kg	8.7 kg	8.4 kg

