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MAXX-SERIES

DIGITAL POWER AMPLIFIERS

MA32/LP

DATASHEET

FEATURES

- MA32/LP is a cutting edge 32 channel power amplifier combining FPGA-based signal processing with advanced Class D power stages and universal power supply for global use in a 1U 19” package. The cooling is 100% passively, no fans needed.
- Each channel can deliver a power of 20W at 4 Ohm load with less than 1% THD.
- Despite the extremely compact design, the MA32/LP achieves a channel separation of more than 55dB between adjacent channels. Distant channels typically reach 80dB.
- Each channel can be disabled in software. The even low IDLE power consumption of 67W can be further decreased by disabling unused channels.
- Advanced DSP-controlled power supply with PFC for almost sinusoidal current draw an all common line voltages (90 - 264V 50/60Hz).
- Web-based remote control makes usability straightforward and platform-independent. We reveal the complete protocol definition for integration in third party controller. We offer mDNS (Bonjour) and a proprietary simple UPD protocol to discover devices on your network.
- IP settings can be changed across IP subnet borders by the UDP implementation as well.
- The amplifier accepts MADI optical, 2x MADI coaxial, 2x AES3id and DANTE TM (Option IF1) as input. Channels can be patched smoothly between all interfaces. All inputs can also be used as the clock source.
- The optional DSP functionality (D1) offers per channel: 5 EQs, High- Lowpass up to 48dB/Oct, Peak limiter, Volume and Delay. For more advanced filtering FIR filters can be used (D2).
- The output current of all channels is measured and feed to a 20kHz detector. By adding a pilot tone by either the internal generator or an external source, the connection and voice coil of your speakers can be monitored. Threshold and debounce time is adjustable per channel. (M1)
- The “ramp volume at startup” feature with adjustable time and the panic mute via UDP/IP functionality helps to react when errors in complex installations occur.
- IP and mute settings can be changed on the front panel. In normal operation, the LCD shows level meters of all 32-channels.
- The amplifier is protected against DC, overcurrent and overtemperature. A compressor with slow release time is responsible for limiting the maximum power drawn from the power line. The limitation smoothly reduces the gain at all channels simultaneously so that no acoustic picture distortion will occur in overload situations.
- The Fans are temperature controlled and switchable between low noise and high power mode.

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General			
	Number of Channels	32	
	Output Power (EIAJ Test Standard 1kHz 1% THD)	4Ω	8Ω
		20W	20W
	Max output Voltage	21 V_{peak}	
	Max output Current	5 A_{peak}	
Audio			
	DC Offset	< 90mV	
	Frequency response	10Hz-20kHz / 4-8Ω: +1.0 -2.0dB	
	S/N typ	100dBA	
	Gain	28dB (Input dBFS + Gain = Output dBV)	
	THD+N @ 4Ω	1W	20W
		< 0.05%	< 0.2%
	SMPTE IMD	< 0.06%	
	CCIF IMD	< 0.06%	
	Output impedance	typ 190 mΩ	
	Crosstalk	channel enabled	channel disabled
		typ < 55dB / typ 80dB (distant channels)	typ < 100dB
	Latency	48kHz	44.1kHz
		0.541ms	0.594ms
	Protection	Overtemperature, DC and Overcurrent	
DSP			
	Architecture	FPGA based 48-bit fixed point	
	Filter per channel	5x EQ, 1x Highpass, 1x Lowpass	
	Filter types	bell, notch, highshelf, lowshelf	
	High- Lowpass types	6 - 48dB/Oct, Bessel, Butterworth, Linkwitz/Riley, Variable Q	
	Peaklimiter	Threshold, Attack, Release	
	Cliplimiter	1-20V peak	
	Delay	48000 Samples per channel	
	FIR Filter	2048 Tabs, ASCII file import	
	Test Tone generator	sine, white- pink- brown-noise	
Frontpanel			
	Indicators	Multicolor LED, LCD Display	
	Controls	Power switch, 6 navigation Keys, rotary encoder	
	Maintenance	None	
Rearpanel			
	Control input connectors	RJ45 (100Mbit/s Ethernet)	
	Audio signal input connectors	RJ45 (DANTE), BNC 75R (MADI Coax, AES3id), SC Optic (MADI Fibre)	
	Speaker connector	Wuerth Elektronik 691361300016	
		Phoenix MC 1,5/16-ST-3,81 - 1803714	
	AC mains	Neutrik Powercon True1	

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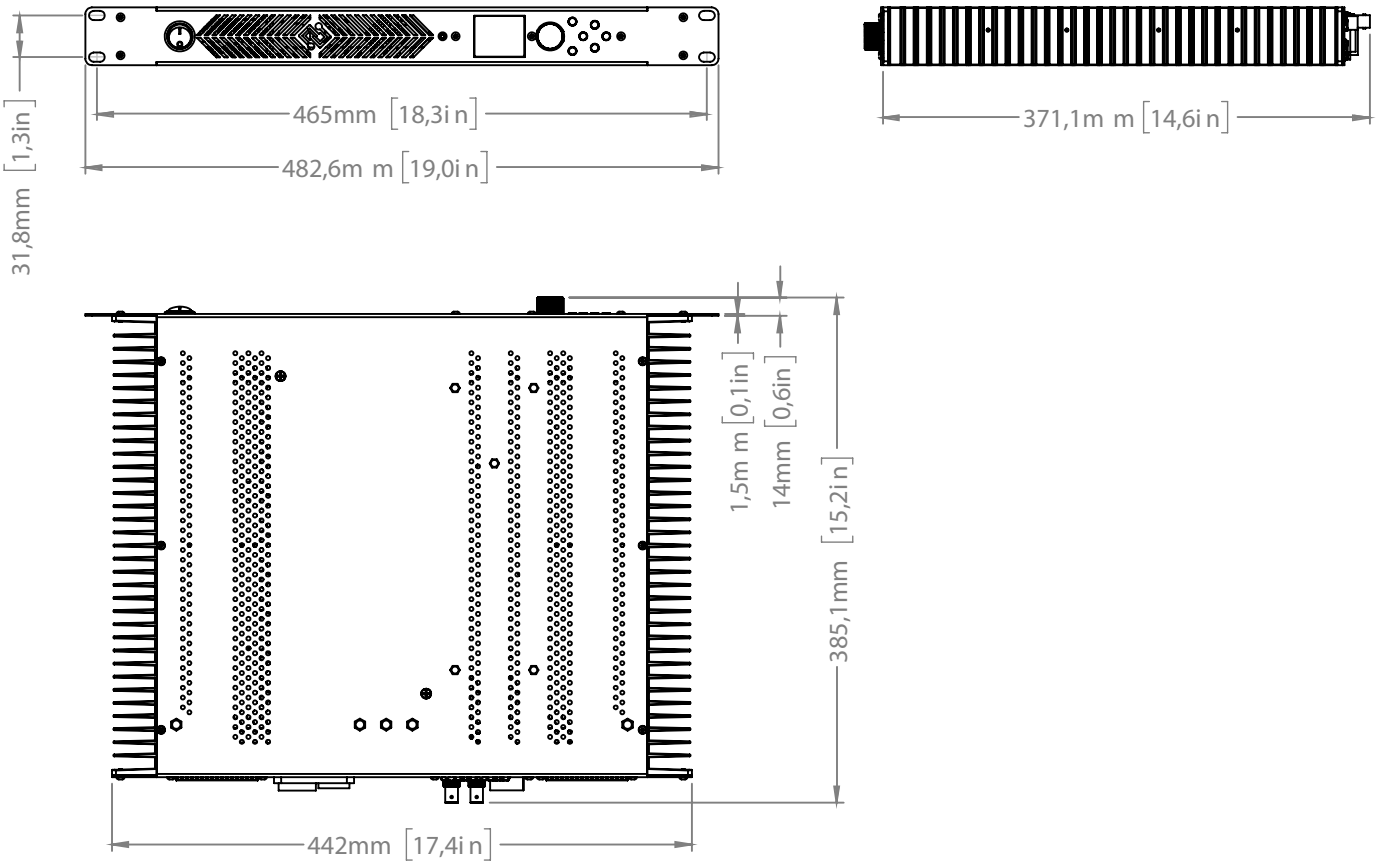
AC Mains Power					
	Power supply	Universal, regulated switch mode with PFC (Power Factor Correction)			
	Operating Voltage	90 - 264VAC 50/60Hz			
	AC Current max.	6A			
	Inrush Current	50A max			
	Suggested circuit breaker	B16			
	Earth Leakage Current	< 2mA / 240V			
	Power Factor	@230V		@110V	
	full load	0.95		0.98	
	idle	0.68		0.94	
	Consumption / current draw	@230V		@110V	
	Idle	58W	0.37A	57W	0.55A
	1/8 power @ 4 Ohm	113W	0.58A	118W	1.10A
Thermal					
	Enviromental operating temperature	0 - 40°C / 32 - 104°F			
	Thermal dissipation	Passive cooled, bottom to top airflow needed			
		@230V		@110V	
	idle	50 kcal/h	198 BTU/h	49 kcal/h	195 BTU/h
	1/8 power @ 4 Ohm	97 kcal/h	386 BTU/h	102 kcal/h	403 BTU/h
Construction					
	Dimension	W 482.6mm (19“), H 44mm (1RU 1.75“), D 371.1 (14.61“)			
	Weight	6.4 kg, 14 lb			



Address : innosonix GmbH
Hauptstr. 35
D-96482 Ahorn (Germany)
Phone : +49 (0) 9561 74599-80
Telefax : +49 (0) 9561 74599-89
E-Mail : info@innosonix.de

innosonix GmbH
Executive board: Markus Bätz, Steffen Bätz
USt.-IdNr.: DE 266020313
HRB 5192 Coburg
WEEE-Reg.-Nr. DE 88021242

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www.innosonix.de
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