

## AMN-P15-SIP Amplifier module 15W, SIP



The AMP-P15-SIP is an IP amplifier module intended to drive passive loudspeakers directly or through an external amplifier. The IP amplifier module is a compact unit and can be mounted on a surface or on a DIN rail via the additional adapter (included).

### Functions

- Power over Ethernet (PoE) allowing easy and cost effective single cable operation.
- ONVIF backchannel supported for 1-way audio integration with VMS.
- SIP support for connection to external SIP system.
- Low impedance connection for passive loudspeakers.
- Line-out for connection to an external amplifier.
- Supporting Bosch Alarm Task Script Language (ATSL) for direct camera integration.
- Internal storage for pre-recorded messages.
- Third party integration by easy to use HTTPS REST API.
- GPIO for generic third party integration.
- Audio line-in for supporting live speech from other devices.
- Discoverable via ONVIF.
- Digital Signal Processing (DSP) on board.

### Architects' and engineers' specifications

- For SIP integration it shall support on premise IP-PBX servers as well as cloud based IP-PBX servers for 2-way audio communication.
- For integration with VoIP systems it shall support SIP with the following audio codes: G.711 (u-law and a-law), G.722 and Opus.

- ▶ 1-way audio communication using SIP systems and/or ONVIF based VMS
- ▶ Low impedance loudspeaker connection and amplifier line out
- ▶ Class D amplifier and Digital Signal Processing (DSP)
- ▶ Remotely configurable via Web-GUI

- For VMS integration it shall support ONVIF audio backchannel allowing 1-way audio communication.
- The ONVIF audio backchannel (talk down) shall support the following audio codecs: G.711 and AAC.
- For ONVIF integration it shall support up to 32 ONVIF outputs for direct triggering and playback of stored messages.
- The IP amplifier module shall support PoE IEEE 802.3af Class 3 and PoE+ IEEE 802.3at Class 4.
- The built-in amplifier shall be a class D delivering up to 8 watt with PoE and up to 15 watt with PoE+.
- The IP amplifier module shall have a line-level audio input and output.
- The IP amplifier module shall have one GPI and one GPO for generic interfacing to other devices.
- It shall offer a Web-GUI for configuration and uploading messages.
- It shall have built-in Digital Signal Processor (DSP) for adjusting volume level, equalization.
- User shall be able to create their own recorded messages and store them in the module. It shall support the following formats: WAV, MP3, Ogg Vorbis and Opus. The storage capacity for recorded messages should be 300 MB.
- Pre-recorded message can be virtually triggered based on alarm condition or via contact input.

### Parts included

Quantity	Component
1	Amplifier module

Quantity	Component
1	DIN adapter plate with 2 screws
1	Quick installation guide
1	Safety information

### Technical specifications

Electrical		
Power transfer		
Power over Ethernet	PoE IEEE 802.3af Class 3 PoE+ IEEE 802.3at Class 4	
Power consumption	PoE	<5 W in Idle <7 W at 1/8 <sup>th</sup> of rated power <13 W at rated power
	PoE+	<6 W in Idle <9 W at 1/8 <sup>th</sup> of rated power <26 W at rated power

Network	
Ethernet	100BASE-TX, 1000BASE-T
Protocols	IPv4, SIP, NTP, TCP, UDP, HTTP, HTTPS, IPv4 link local, UPnP
SIP audio codecs	G.711 (u-law and a-law), G.722, Opus
Ports	1x RJ45

Amplifier	
Type	Class D amplifier
Rated power (W)	7 W with PoE (4-8 Ω) 15 W with PoE+ (4-8 Ω)
Maximum output level	10.95 V
THD+N (3 dB below max., @1 kHz)	<0.03%
Signal-to-Noise Ratio (A-weighted)	>95 dB

Analog audio input/output	
Type	1 line-level input, 1 line-level output; unbalanced
Connector	3-pin screw terminals
Accepted Wire gauge	AWG 28—AWG 14
Maximum level line input	1 V

Analog audio input/output	
Maximum level line output	1 V
Line input impedance	>10 kΩ
Line output impedance	<100 Ω

Digital signal processing (DSP)	
Sample rate	48 kHz
Signal latency (typically)	<45 ms
Processing	User PEQ (3 bands), Speaker PEQ (6 bands), Compressor, Noisegate, RMS-limiter, Peak limiter, Level, Mute, Delay

Reliability	
MTBF (calculated according to Telcordia SR-332 Issue 3)	2.300.000 h

Stored messages	
Uploadable	Via Web-GUI
Capacity	300 MB
Supported file formats	WAV, channels: mono, stereo; sampling rates: 44.1 kHz, 48 kHz MP3, channels: mono, stereo; sampling rates: 44.1 kHz, 48 kHz Ogg Vorbis, channels: mono, stereo; sampling rates: 44.1 kHz, 48 kHz Opus, channels: mono, stereo; sampling rates: 44.1 kHz, 48 kHz

GPIO	
Type	Terminal block with screw terminals
Connector	3-pin screw terminals
Wire gauge	AWG 28—AWG 14
Ports and operating modes	1x supervised/non-supervised GPI, 1x GPO
Digital inputs	Non-supervised Normal: On: =<0.75 V Off: >0.75 V Inverted: On: =>2 V Off: <2 V
	Supervised

GPIO	
	Normal: Shorted: $\leq 0.75\text{ V}$ Open: $> 2\text{ V}$ On: $0.75\text{ V} - 1.25\text{ V}$ Off: $1.25\text{ V} - 2\text{ V}$ Inverted: Shorted: $\leq 0.75\text{ V}$ Open: $> 2\text{ V}$ On: $1.25\text{ V} - 2\text{ V}$ Off: $0.75\text{ V} - 1.25\text{ V}$
Digital outputs	On: Output switched to GND, max. 48 V/500 mA Off: Open collector ( $> 10\text{ M}\Omega$ to GND)

**Mechanical**

Enclosure	
Material	Acrylonitrile Butadiene Styrene (ABS)
Dimension (HxWxD) (mm)	92 mm x 146 mm x 40 mm
Dimension (HxWxD) (in)	3.62 in x 5.75 in x 1.57 in
Weight (g)	215 g
Weight (lb)	0.474 lb
Ingress Protection (IP)	IP30
Color	Black

DIN rail adapter	
Material	Aluminum

**Environmental**

Climatic conditions	
Operating temperature (°C)	$-40\text{ °C} - 55\text{ °C}$
Operating temperature (°F)	$-40\text{ °F} - 131\text{ °F}$
Storage temperature (°C)	$-40\text{ °C} - 70\text{ °C}$
Storage temperature (°F)	$-40\text{ °F} - 158\text{ °F}$

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Climatic conditions	
Operating relative humidity, non-condensing (%)	5%–95%

**Ordering information**

**AMN-P15-SIP Amplifier module 15W, SIP**  
 IP Amplifier module 15 W, Integrated class D amplifier, DSP  
 Order number **AMN-P15-SIP | F.01U.389.866**

**Services**  
**EWE-AMPMOD-IW 12 mths wrty ext amp module**  
 12 months warranty extension  
 Order number **EWE-AMPMOD-IW | F.01U.417.536**