zenitel

DATASHEET
PAVA
VIPEDIA Range

- ✓ Audio routing matrix and controller
- ✓ Compact 1U 19" rack mount
- ✓ High Quality 32 Bit 48khz audio processing
- ✓ IP enabled
- ✓ 12 Analogue audio inputs & outputs
- ✓ 6 IP Audio inputs & outputs
- ✓ General purpose inputs & outputs
- ✓ Flexible control options
- ✓ EN 54-16 certified part of Zenitel PAVA system

VIPEDIA Range

PAVA DSP **Audio Router**

Zenitel's VIPEDIA-12-NET is a compact, high-performance Public Address and Voice Alarm (PAVA) Audio Router, designed with advanced digital signal processing and control. Housed in a 1U 19" rack-mount enclosure, it seamlessly integrates with Zenitel's amplifier solutions and wall-mounted INTEGRA units, ensuring a reliable and adaptable PAVA system.

IP-enabled and equipped with a powerful audio routing matrix, the VIPEDIA-12-NET offers 12 analog audio inputs, 12 analog outputs, and six IP audio input/output streams. Up to four units can be interconnected via Ethernet and the Digital Backbone (DBB) within a single cabinet, creating a 48x48 audio routing matrix.
For larger deployments, the VIPEDIA supports IP networking either natively or through third-party switches. This allows up to 32 units to form a cluster, expanding the system to 384 audio inputs and outputs. Scaling further, integrating PAVA servers and Layer 3 switches enables the connection of up to 10 clusters, ensuring full compliance with EN 54 system standards.

EN 54-16 Certified

The VIPEDIA is EN 54-16 certified as part of the Zenitel PAVA system, ensuring full compliance with industry standards. It features dual powering and offers comprehensive monitoring of processors, power supplies, data ports, and audio inputs/outputs. Any faults detected on Zenitel devices managed by VIPEDIA are reported and categorized in accordance with EN 54-16 requirements.

Multi Input & 3rd party integration

Zenitel provides a range of compatible paging and emergency microphones, as well as wall controllers. The VIPEDIA-12-NET also supports line and mic-level inputs that can connect to various audio sources, including third-party microphones, music players, mixing desks, and other AV equipment. These connections utilise professional, noise-rejecting balanced connectors for optimal audio performance.

Volume control and source selection can be managed using Zenitel's WMC01 wall controller or third-party touchscreen devices supporting ASCII-based commands.

Powerful Digital Signal Processing

The VIPEDIA-12-NET's powerful 32-bit internal DSP delivers exceptional audio quality with advanced audio processing capabilities. Each analogue input channel features a parametric EQ for enhanced clarity and tonal balance, a noise gate to reduce background interference in challenging environments, and a compressor to maintain consistent levels while preserving natural voice characteristics.
On the output side, each analogue channel includes a parametric EQ for fine-tuning in complex acoustic spaces, a limiter to prevent clipping, night-time volume control for noise abatement, and a programmable audio delay to eliminate echo and phasing issues.

AUDIO INPUTS

Analogue Audio Inputs

The 12 audio inputs support 0dB balanced analogue audio, RS485 control, and DC power. Each of the inputs is compatible with the following:

- Zenitel Serial microphones (MPS / EMS / SAP)
- Zenitel legacy serial microphones (DMS / FMS / SMC / SAP)
- Mic-level audio or Line-level audio (e.g., CD players, radios and professional microphones)
- Zenitel IP microphones (MPS/ EMS / SAP)

Up to 6 Zenitel IP-enabled microphones can also be connected to each VIPEDIA-12-NET, with each IP microphone utilizing one of the analogue audio processing strips.

Pre-announcement Chimes

Standard one, two, and three-tone chimes are available and can be played before both live broadcasts and pre-recorded messages. Custom chimes can also be uploaded as WAV files.

Pre-recorded Messages (DVA)

Up to 64 monitored pre-recorded messages can be stored internally, with a total duration of up to 40 minutes at a 12kHz sample rate, 20 minutes at 24kHz, or 10 minutes at 48kHz. DVA messages use the standard 16-bit, mono WAV file format. Each VIPEDIA-12-NET can play up to eight messages simultaneously. Messages can be triggered via microphone buttons or GPIO input contacts, typically controlled by a fire alarm system.

SIP Interface

The built in SIP interface supports a single SIP incoming call using the G.711 audio codec. In addition the SIP interface can be used to trigger on board pre-recorded messages. The SIP capability of the system can be expanded with the addition of Connect-PRO. Please contact Zenitel for further details.

AUDIO OUTPUTS

Zenitel Amplifiers

VIPEDIA interface directly with Zenitel's V400, X400 and V2000 amplifier ranges, which provide fully monitored Voice Alarm compliant audio amplification. Audio outputs to the amplifiers are provided as nominal 0dB balanced analogue audio. Control & monitoring data is made using either CAN (V400 / X400) or Ethernet (V2000)

Active Speakers or Third Party PA Amplification

In large or complex acoustic environments, active intelligent loudspeakers are often used to optimize intelligibility. For large-scale PA applications, such as stadiums, high-power low-impedance amplifiers are required to achieve the necessary SPL. The VIPEDIA supports these configurations without the need for additional third-party hardware. Its analogue outputs can drive levels up to 20dBu while simultaneously superimposing a 24kHz monitoring tone for cable supervision. Remote faults can also be reported back to VIPEDIA via on-board GPI contacts. Additionally, the VIPEDIA-12-PRO variant offers full Audinate Dante integration for seamless audio networking.

AUTOMATIC GAIN CONTROL

Night Volume Control Gain Reduction

The Night Time Volume Control (NVC) facility automatically limits the volume of announcements at configurable times based on a daily schedule. If an announcement is configured to be controlled by NVC, then either the nominal output gain or the configured maximum gain for NVC is used, whichever is lower. The nominal output gain for an output is the configured output gain minus any ANS attenuation and volume control attenuation.

Ambient Noise Sensing

The automatic processing and control of announcement levels based on ambient noise measurements is supported. This includes both ANS with typical Fix and Hold functionality, and DANS offering dynamic adjustment. These features ensure that announcements remain audible in high-noise environments while minimizing environmental noise spill in quieter settings. Note that noise sensors are sold separately.

GPIO

On board GPIO functions include, DVA Message Routing, Music / Line Input Routing, External System Fault Input, Route Silence, Route Cancellation, Route Busy Indication, General Fault Indication and VA Indication. GPIO capability can be expanded using Zenitel's BMB if required. Each VIPEDIA supports up to 9 BMB01 devices.

TYPICAL ARCHITECTURE

For more detailed information, please refer to Zenitel's System Design Guidelines.

TYPICAL STANDALONE WITH SINGLE AUDIO ROUTER

This example illustrates a single VIPEDIA-12-NET paired with a variety of Zenitel accessories including the V2000 Amplifier Mainframe.

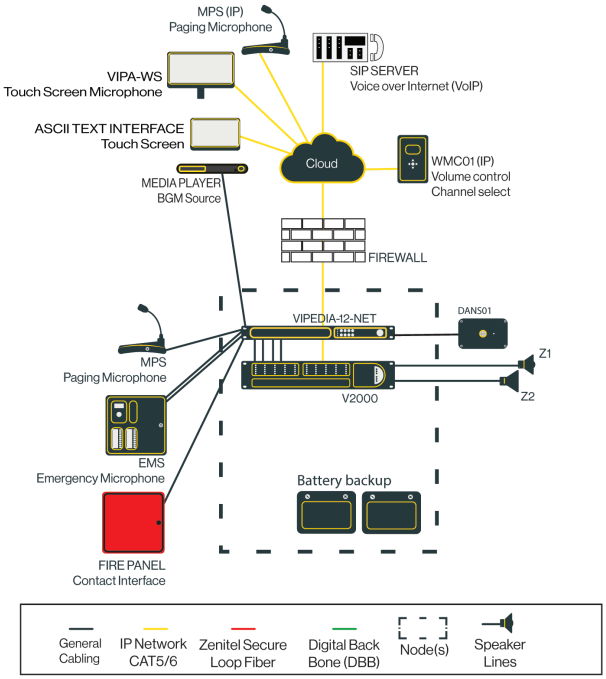
Inputs
- 12x analogue / serial microphones
- 6x IP microphones
- 6x simultaneous IP Audio Streams (PMC)
- 2 hardware bypass microphone inputs (serially connected MPS or EMS) on inputs 1 and 2

Outputs / Zones
- 12x analogue outputs / zones
- 2x Listen-in outputs for zone monitoring.

Pre recorded Messages (DVA)
- 64x pre-recorded audio files 40 minutes (12kHz), 20 minutes (24kHz), 10 minutes (48kHz)
- 8x simultaneous pre-recorded message players

General Purpose Input / Outputs (GPIO)
- 12x On-board analogue/digital inputs & 12 digital outputs
- 2x Output relays
- 9x BMB IO expansion units

Ambient Noise Control
- 48x ANS04-ES (Up to 4x ANS04-ES per output, all 12 outputs controlled)
- 12x DANS01 (Up to 4x DANS per output, 4 outputs controlled)



TYPICAL STANDALONE WITH MULTIPLE AUDIO ROUTERS

This example demonstrates the use of the built-in Digital Backbone (DBB) high-speed digital audio bus and Ethernet ports to link two, three, or four Audio Routers, enabling them to function as a single audio matrix. All analogue audio inputs, noise sensors, and other sources connected to any VIPEDIA unit are accessible across the entire combined routing system.

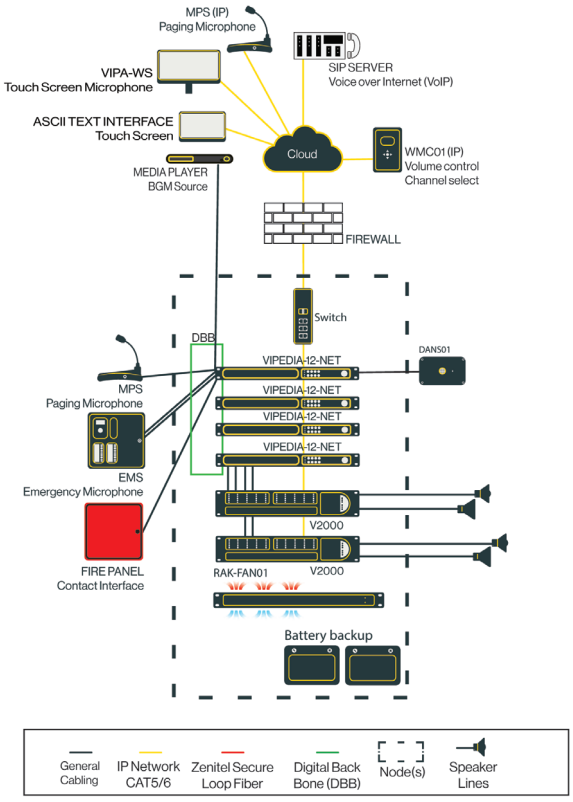
Inputs
- 48x analogue / serial microphones
- 24x IP microphones
- 6x simultaneous IP Audio Streams per VIPEDIA (PMC)
- 2 hardware bypass microphone inputs (serially connected MPS or EMS) on inputs 1 and 2

Outputs / Zones
- 48x analogue outputs / zones
- 8x Listen-in outputs for zone monitoring.

Pre recorded Messages (DVA)
- 64 pre-recorded audio files 40 minutes (12kHz), 20 minutes (24kHz), 10 minutes (48kHz)
- 8 simultaneous pre-recorded message players per VIPEDIA

General Purpose Input/Output (GPIO)
- 48x On-board analogue/digital inputs & 12 digital outputs
- 8x Output relays
- 36x BMB IO expansion units

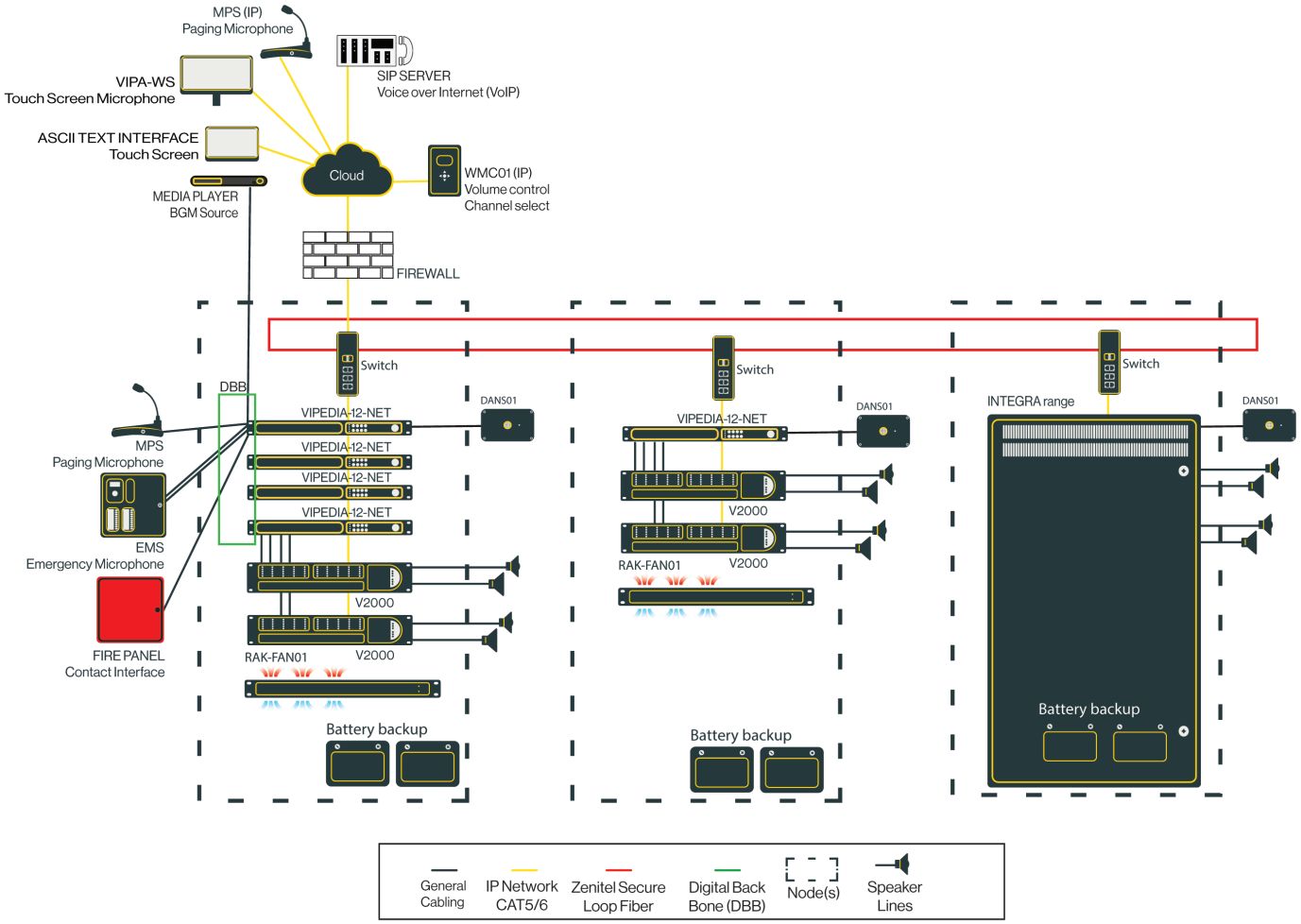
Ambient Noise Control
- 192x ANS04-ES (Up to 4x ANS04-ES per output, all 12 Audio Router outputs controlled)
- 48x DANS01 (Up to 4x DANS per output, 4 Audio Router outputs controlled)



SECURE LOOP - IP NETWORK

For medium to large system deployments, Zenitel's VIPEDIA-12-NET supports IP networking via standard CAT5/6 cables or with the addition of SFPs, both multi-mode and single-mode fiber. The system allows networking of up to 32 VIPEDIA-12-NET or INTEGRA units within a single cluster, making it ideal for large-scale and complex installations such as transport hubs, stadiums, tunnels, arenas, and exhibition halls.

For typical Voice Alarm applications, the VIPEDIA-12-NET or INTEGRA supports a dedicated Secure Loop IP network, providing full redundancy and supervision to meet EN 54-16 requirements. Additionally, for complex Voice Alarm-compliant networks, Zenitel offers third-party-approved Ethernet switches for enhanced flexibility and control.



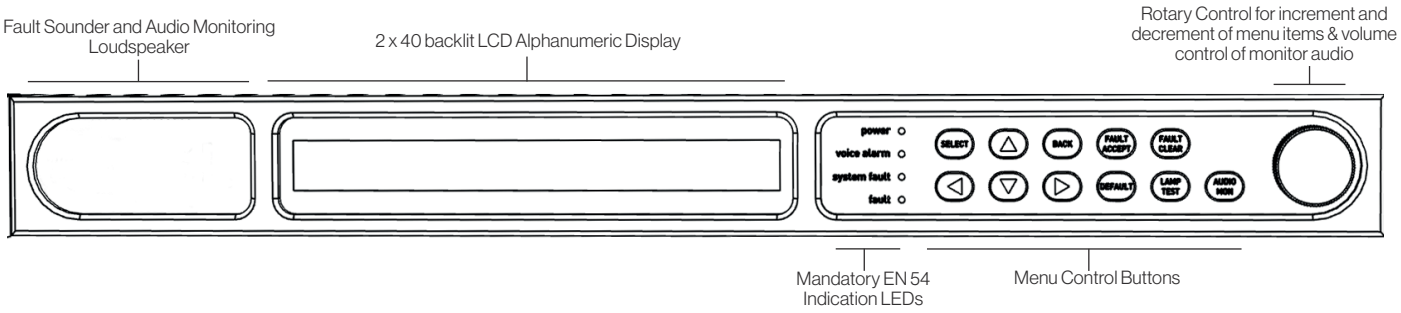
Furthermore, for larger multi site applications VIPEDIA or INTEGRA support Zenitel's PMC audio over IP technology; providing uncompressed, low bandwidth, multi-channel, high quality audio. Using PMC, VIPEDIA offers simple remote Public Address, where operators can simultaneously address or control multiple sites from a central location.

PMC can be deployed over a standard Layer 2/3 IP network, which enables systems to be installed using existing infrastructure.

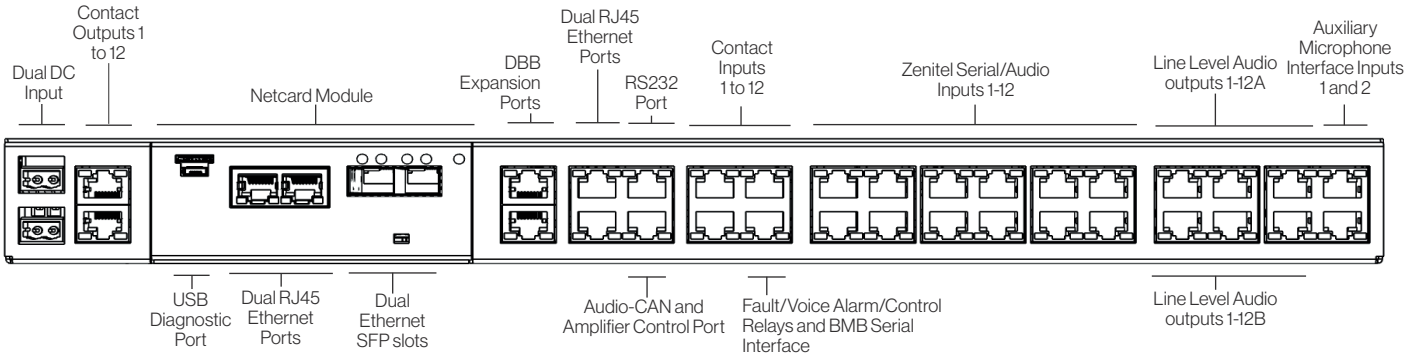
Please refer to Zenitel System Design Guidelines for detailed information.

MECHANICAL

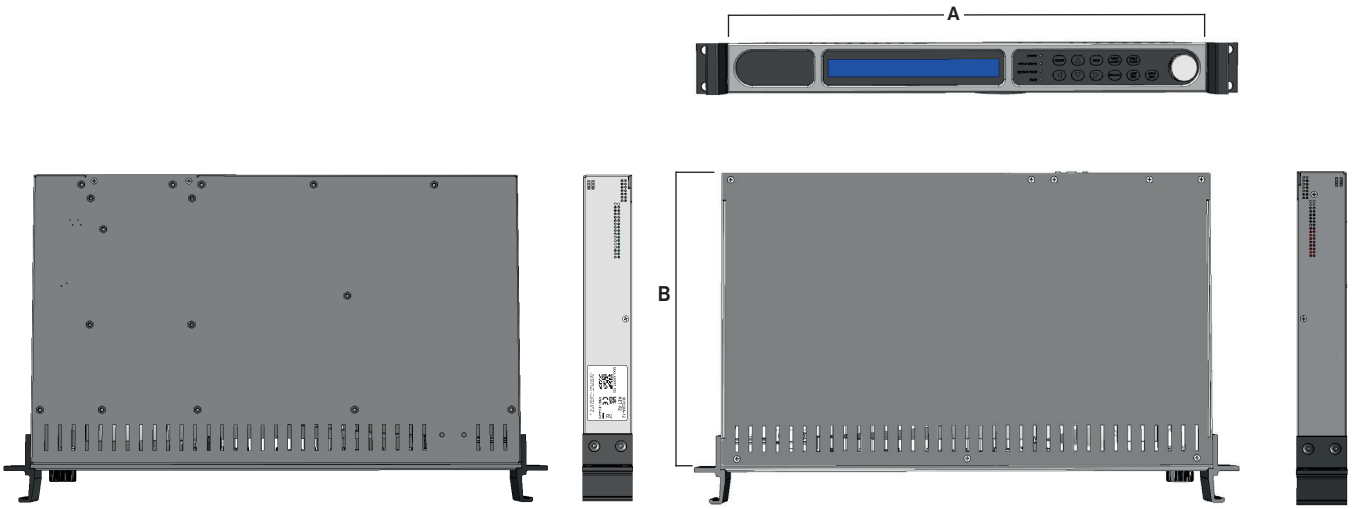
Front Panel



Rear Panel



Views & Dimensions



Dimension (Excludes Handles)		
A	Width	436 mm
B	Depth	260 mm
C	Height	41.8 mm

SPECIFICATIONS

Audio Performance	
Digital Format	48kHz / 24-bit PCM
THD	<0.01% at 1 kHz
Crosstalk	>70 dB at 1 kHz
Residual Noise	<90 dBu (A)
Frequency Response	20 Hz to 20 kHz ±0.5 dB
Audio Outputs	
IP Audio Streams	6 Concurrent
Analogue Output Channels	12
Nominal Output Level	0 dBu
Maximum Output Level	20 dBu
Output Impedance.	660 Ω
Master Level	+10 to - 90 dB (1 dB steps)
Delay (per output)	1 ms to 5000 ms (1 ms steps)
EQ	10 Band Parametric
Dynamics	Limiter / Hard Clipper
Hardware Bypass Gain	-31.5 dB to 0 dB (1 dB steps)
Audio Inputs	
IP Audio Streams	6 Concurrent
Analogue Input Channels	12
Input Sensitivity	-60 / - 40 / -20 / 0 dBu
Max Input Level	+20 dBu
Input Trim	–90 dB to +10 dB (1 dB steps)
Switchable HPF	20 to 500 Hz / Slope: 12 dB/oct
EQ	4 Band Parametric
Dynamics	Gate/Compressor/Limiter
Chime	Off / 1 note / 2 note / 3 note / Custom
Chime Level	-60 dB to +10 dB (1 dB steps)
SIP Interface	1 Call (G.711 Codec)*
IP Connectivity	
Number of Audio Routers	32 per Cluster
Ethernet Ports	4 x 100BASE-T
SFP Slots	2 x 1GB Slots Copper or Fibre
Audio and Control Protocol	PMC (48 kHz, 16 bit) & VIPA
Zenitel Management Options	VIPA-API / iVENCS / Connect-Pro
NTP	Built in or Supports an External Source
Protocols	TCP IP / Layer 2+3 / RSTP / Multicast / Unicast / SNMP Single General Alarm
I/O Interfaces	
Input Contacts	12 x Combined Digital and Analogue
Output Contacts	12 x Open-collector
V400 Amplifier	1 x Audio-CAN
General Fault Relay	1
Voice Alarm Indicator Relay	1
Legacy Serial Host Control (HCP) Interface RS-485	1 (Software package ≤ V4)
I/O Expansion Interface	1 (Connect up to 9 BMB)
Digital Backbone Ports (DBB)	2 (Loop In and Loop Out)

Power Supply	
Input Voltage	18 - 40 V DC
Number of Inputs	2
Current Consumption (maximum)	490 mA
Current Consumption (nominal)	445 mA
Mechanical	
Dimensions (H x W x D)	41.8 mm x 436 mm x 260 mm
Weight	3.75 kg
Mounting	19-inch Rack Mounting (1U)
Environmental	
Temperature (storage)	-20°C to +55°C
Temperature (operating)	-10°C to +55°C
Humidity (Operational & Storage)	0% to 95% non-condensing
IP Rating	IP20
Approval and Standard Compliance	
Railway Applications	EN 50121-4
Voice Alarm	EN 54-16
Low Voltage Directive (Safety)	EN / IEC / UL 62368-1 / EN 54-16
Electromagnetic Compatibility (Immunity)	EN 55103-1 / EN50130-4
Electromagnetic Compatibility (Emissions)	EN 55032 / EN 6100-6-2 / EN 6100-6-3 / EN 6100-6-4 / FCC-47 part 15B Class A
Environmental	RoHS / REACH
Conformity Europe	CE / CPR / UKCA
Product Part Code	
VIPEDIA-12-NET	PAVA DSP Audio Router
VIPEDIA-12-PRO	PAVA DSP Audio Router Dante enabled
Compatible Products	
INTEGRA and INTEGRA-PRO Range Available with 0, 3, 5, 7 & 10 amplifiers pre Installed	Wall Mount PAVA System
BOA01	RJ45 DIN Terminal breakout Adapter
BOA02	RJ45 DIN Terminal breakout Adapter
BMB01 / BMB02	GPIO Expander
EMS Range	Wall Mount Emergency Microphone
MPS Range	Desk Mount Paging or Emergency Microphone
SAP Range	Wall Mount Paging Microphone
VRMS Range	Desk Mount Paging Microphone
ICX-510	Intelligent Communication Gateway
Compatible Amplification	
X400 (Obsolete)	Up to 64 Amplifier Mainframe per VIPEDIA
V400 (Obsolete)	Up to 64 Amplifier Mainframe per VIPEDIA
V2000	Up to 32 Amplifier Mainframe per VIPEDIA

*SIP capability can be further enhanced with the addition of Connect-Pro.

Manufactured by Zenitel GB Limited
Unit 17, Cliffe Industrial Estate, Lewes, East Sussex, BN8 6JL, UK

www.zenitel.com
sales@zenitel.com

Created: 2016.05
Revised: 2025.02 | V4

U-0641-3965
VIPEDIA Range Datasheet