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Introduction to PAVA

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Elektronik

What is PA/VA?

PA/VA solutions bridge the gap between the unregulated Paging and Multimedia content and the broadcast of safety critical Voice Alarm messages for evacuation.

Voice Alarm is part of “Life Safety systems” umbrella-term related to the protection of people during emergencies

Public Address

- **Unregulated market**
- Primarily **paging and multimedia** content
- Focus on **high audio quality**

Voice Alarm (VACIE):

- **Regulated Market** specifically related to Fire Evacuation.
- Live announcements and Pre-recorded Voice messages
- **High availability** and **Speech Intelligibility** are key

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Operational PA

- Operational information, security and employee announcements helps keep everyone informed.
- Speakers used to issue pre-recorded reminder messages and distribute Background Music.
- Live messages (+ S&F)
- Stored and triggered messages
  - Store closing
  - Staff allocation
  - Advertising
  - events

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Security PA

- Control rooms monitor behavior via security systems and use the PA to interact directly

- Staff can trigger warning messages, or issue live instructions to potential intruders.

- Anti-theft/vandalism in stores, parking lots and more. Staff can intervene proactively via the PA to deter criminal behavior, while keeping staff at a safe distance.

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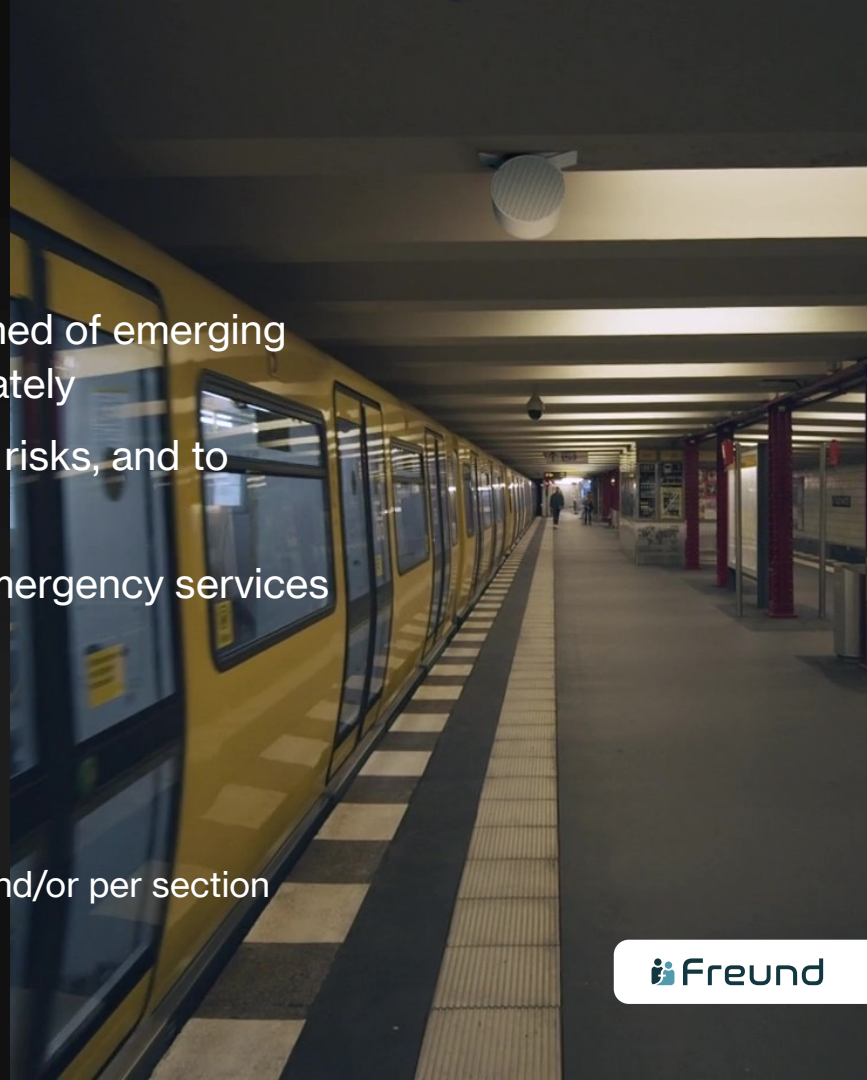
Voice Alarm & Life Safety

- Paging announcements helps keep staff informed of emerging situations ensuring they can respond appropriately
- Voice Alarm message direct people away from risks, and to muster points
- Emergency mics allow First responders and emergency services to issue direct instructions over the PA.
- Much more efficient than just alarm tones
  - Reason of alert/warning
  - What to do
  - Evacuation can be scheduled and done in phases and/or per section
  - Much quicker evac compared to alarm tones



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Zenitel Offerings

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because communication is critical

Product Positioning

Our main focus is to present ourselves as a reliable and trusted provider of high-quality and robust Safety & Security solutions.
By life safety capabilities to our security offering we can offer a “Unified Audio platform” of PA/VA & intercom which is a unique position within the market.

Life Safety

- Regulated market
- Reliability and High availability are key
- High Intelligibility a must
- Integration with other safety systems

Operational

- Unregulated market
- The ability to integrate with ICX through IP-kits.
- modularity/limited rack space to lower cost of install/ownership
- Integration with other security systems

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On-shore solutions

- Integra systems are the go-to solution for the immediate On-shore markets. They are pre-built EN54 systems that lower complexity for all stages of our Value Chain.

- Vipedia systems are built for 19” racks and offer even greater flexibility and scalability but requires more consideration towards specification.

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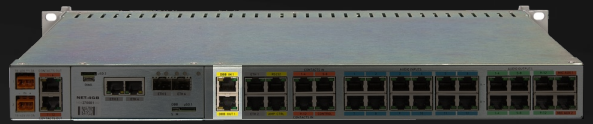
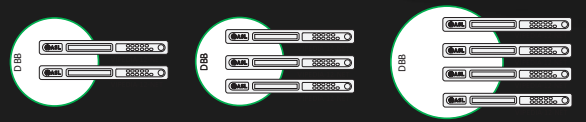
VIPEDIA-12-Net

Audio Router

EN 54 16

- EN 54-16 compliant Audio Router
- IP-networkable (UDP / TCP) (Multicast / Unicast)
- Pro sound performance with 24 bit 48kHz audio processing –
  - Vox Gates,
  - Parametric EQ – Inputs 3-band, outputs 10-band
  - Limiters, Filters,
  - Delays – 1 – 5.000 ms (1ms-steps)
  - Frequency Response 20 Hz to 20 kHz (-3dB)
- 12 Analogue inputs and 12 Analogue audio outputs
- 64 pre-recorded messages (10 / 20 minutes)
  - 8 messages can be played back simultaneously
- Hardware bypass for emergency mic inputs
- On-Board GPIO - 12 contact inputs and 12 contact outputs





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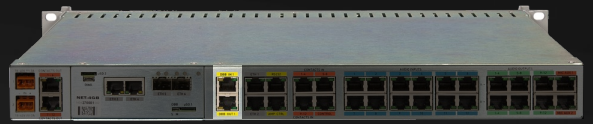
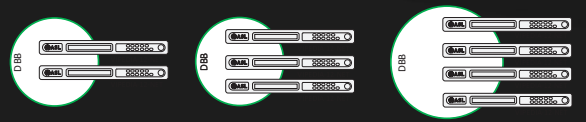
VIPEDIA-12-Net

Audio Router

EN 54 16

- Supports global distribution via ASL IP Secure Loop (up to 32x Audio Routers = 384 In- and Outputs/Zones) in one cluster. Almost unlimited cluster can be managed by VIPA software.
- Support local expansion via ASL Digital Backbone (DBB) (up to 4x Audio Routers).
- Feeds up to 32 V2000 mainframes
- 3 Chime-tones to be played in front of stored and live messages. Customized tones can be uploaded and played in front of live-messages
- Dante-Version available on request
- Programmable volume lowering (night shift)
- ANS – Ambient noise sensing with optional sensors





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V2000

Amplifier mainframe

EN 54 16

EN 54 4

- EN 54-16 compliant amplifier mainframe
- Dual power supplies: 230V AC and 24V DC
- Up to whopping 2000W
- Houses up to 10 separate hot swap amplifier cards
- Software Audio Router amplifier power partitions, to optimize power usage
- High efficient
  - Idle / standby current: Mainframe 80mA, per Amp-card 16mA
  - Amp card efficiency: >86%
- Integrated battery charger
- Internal-external standby options
- Do not exceed more than 4 x V2000 in a single 43U cabinet.

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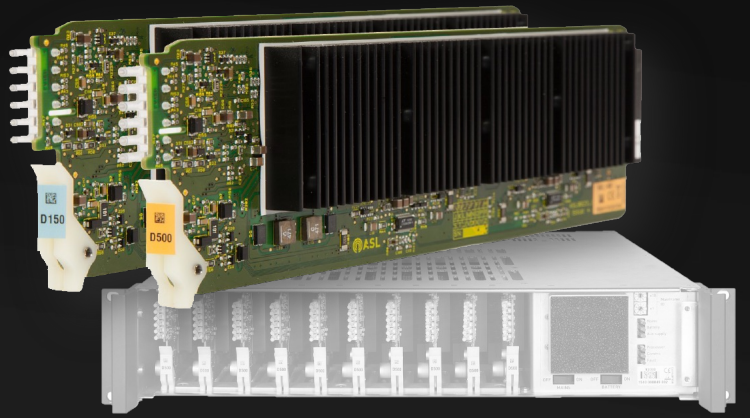
D150 and D500

Amplifier cards for the V2000

EN 54 16

- EN54-16 compliant
- Class D transformerless amplifiers
- Available in either 150W or 500W
- 100V, 70V 0r 50V output
- Very high efficiency and low standby current
- Requires just one V2000 slot
- Compatible with the V2000 mainframe and INTEGRA



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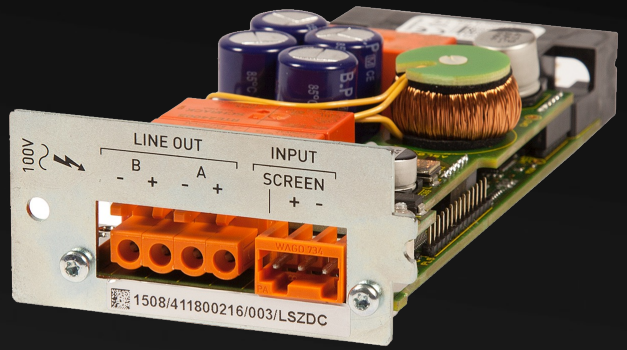
LSZDC

Amplifier interface card for the V2000

EN 54 16

- EN54-16 compliant amplifier interface card
- Powerful on-board DSP (digital signal processing) capability
- DC / Impedance / Loop monitoring (A to B) / Intelligent
- Independently monitored a / b line output fed from a single amplifier
- Automatic control of changeover to standby
- Requires just one V2000 slot
- LSZDC required per D-series amplifier
- Compatible with the V2000 mainframe and INTEGRA



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Differences between Integra and Vipedia

- The hardware core between the two is the same
- The Integra is prebuilt so no worry about connection material. You do need to consider connection material for the Vipedia
- Can be mixed in one secure loop

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Microphones

EMS, MPS and SAP

EN 54 16

- EMS
  - Up to 50 buttons
  - Wall mounted
  - Analog or IP
  - Fist mic
- MPS
  - Up to 50 buttons
  - Wall mounted or desk mounted
  - Analog or IP
  - Gooseneck or fist mic
- SAP
  - 10 selection buttons
  - Fist mic

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Common accessories

EN 54 16

Few of the common accessories

- BMB-01 to expand the number of GPIO
- Wallmount controllers to change BGM and Volume, different variants
- EOL Impedance monitoring of the speaker line
- Noise sensing ANS / DANS

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IP Speaker solutions

- Intended to offer simplified, robust, cost-effective coverage for small areas or areas with granular zoning needs.
- Zenitel IP-speakers offer the same high-quality audio and intelligent audio processing and self-testing as our intercoms.
- All speakers can be configured in ICX mode, EDGE mode, and as SIP devices.
- Offer scalability depending on customer needs; from single speakers over ONVIF/SIP, to Edge-systems to Hybrid PA as an extension of the ASL product line.

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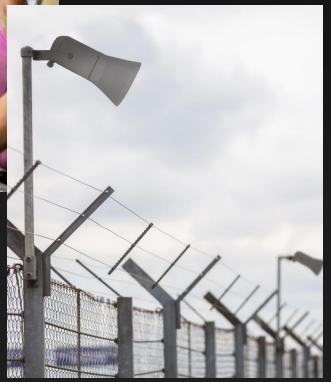
IP Speaker solutions: Applications & Use cases

- Operational Messages; Typically live messages
- People Management; Normally triggered pre-recorded messages
- Perimeter & Asset protection; A combination of Pre-recorded and Live communication



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IP Speaker solutions: Benefits

- System simplicity: easier to install and expand than 100V line
- Saves on Rackspace: Speakers have built in amplifier and DSP. Reduces environmental impact of Aircon etc.
- No centralized DSP, each speaker is an individual end-point – No central point to fail, and speaker failures do not affect overall system.
- Granular Paging Zones are Easy to Create and manage
- Built-in mics for self-testing, AVC, increased situational awareness, and Two-way communication
- Update Existing installations: Replace 100V line transformers on existing speakers with IP-kits.

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IP Speaker solutions: Challenges

- Limited by distance and PoE: End devices need to be 90 m from Switch. PoE limits speakers to 10-15W of power.
- Requires distributed battery back-up or local Power, if failover is a requirement
- Cannot be used for EN54 VACIE messaging. The current standard does not accommodate active speakers
- Cybersecurity concerns. Multiple physically accessible end-points could be seen as higher vulnerability.
- Can become costly for larger applications – there is a tipping point whereby IP-based 100V-line systems are more cost effective

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Benefits of a Zenitel solution

Deliver reliable, high-quality Audio solutions

EN54-16
CERTIFIED PRODUCTS

Rigorous Safety Standards

Integrations for Reduced complexity

Exceptional Audio Performance

Scalable Deployments and Flexible Zoning

Monitoring, Maintenance & Control

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Information Points

We recommend that Tier 1 or Tier 2s source their Racks, Batteries and switches locally.

Batteries: https://www.power-sonic.com/product/ps-12750/

Schroff 800mm Racks: https://schroff.nvent.com/en-de/search#q=eurorack&t=Tab_All

Hirschmann Switches:
RS20-0400M2M2SDAE 12/19
RS20-0800M2M2SDAE
RS20-0400S2S2SDAE 12/19
RS20-0800S2S2SDAE
https://catalog.belden.com/index.cfm?event=browse&c=Category_187181&n=10&sr=1&sby=relevancy

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Sales Guidance

Where does our product does fit best?

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because communication is critical

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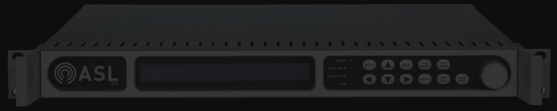
Sales guidance



High potential areas

1. Medium and above projects especially where EN54 is required

2. Need for Medium to Large unified communication solutions (PA/VA + Intercom)
   - Industry
   - Light rail environment
   - Office complexes
   - Projects that require EX-solutions if ICX is included.

3. Where install space is limited, and high-power density is key
   - Multiple occupancy commercial buildings

4. Projects with Distributed systems i.e. single site with number of buildings

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Not focused areas for the first market launch

1. Small non-EN54 projects that can easily be served by IP speakers and are projects i.e. single area with less than 4 low-power zones.

2. Project or Audio design and Engineering works expected from Zenitel or Zenitel subsidiaries.

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Segment prioritization

Initial market launch - **Focused Market verticals:**

- Excellent product-market fit
- Better competitive positioning
- High growth potential and market size
- Manageable project complexity*

* High complex transportation projects will be handled by BU TS

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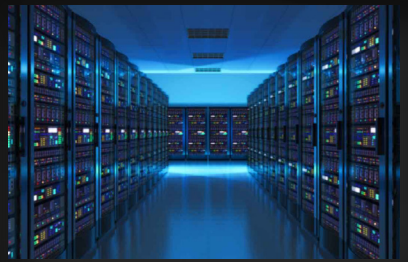
Corporate and Public

Sub-segments

Banking and Finance

Office complexes



Data Center

Governmental

Parking

Audio may not always part of the security system.
It is about convincing the customer the need for it.

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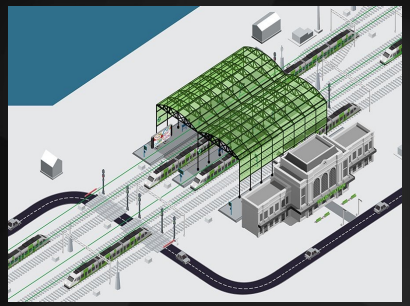
Transportation

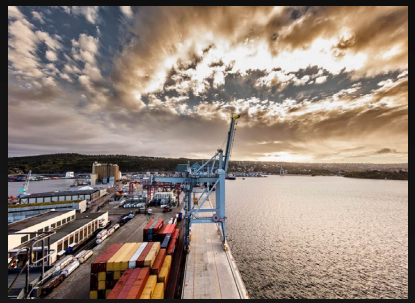
Sub-segments



Rail Infrastructure

Highways and Road Tunnels

Airports



Ports/harbors

Audio is always part of the safety and security systems.
It is about convincing the customer who to choose from

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Industry
Sub-segments

Power plants and power distribution

Manufacturing facilities

Cleanroom facilities

Audio is usually part of the security system.
It is about convincing the customer who to choose from

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communication
is critical
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