



EN 54-16

EN 54-4

# The smart approach to better understanding



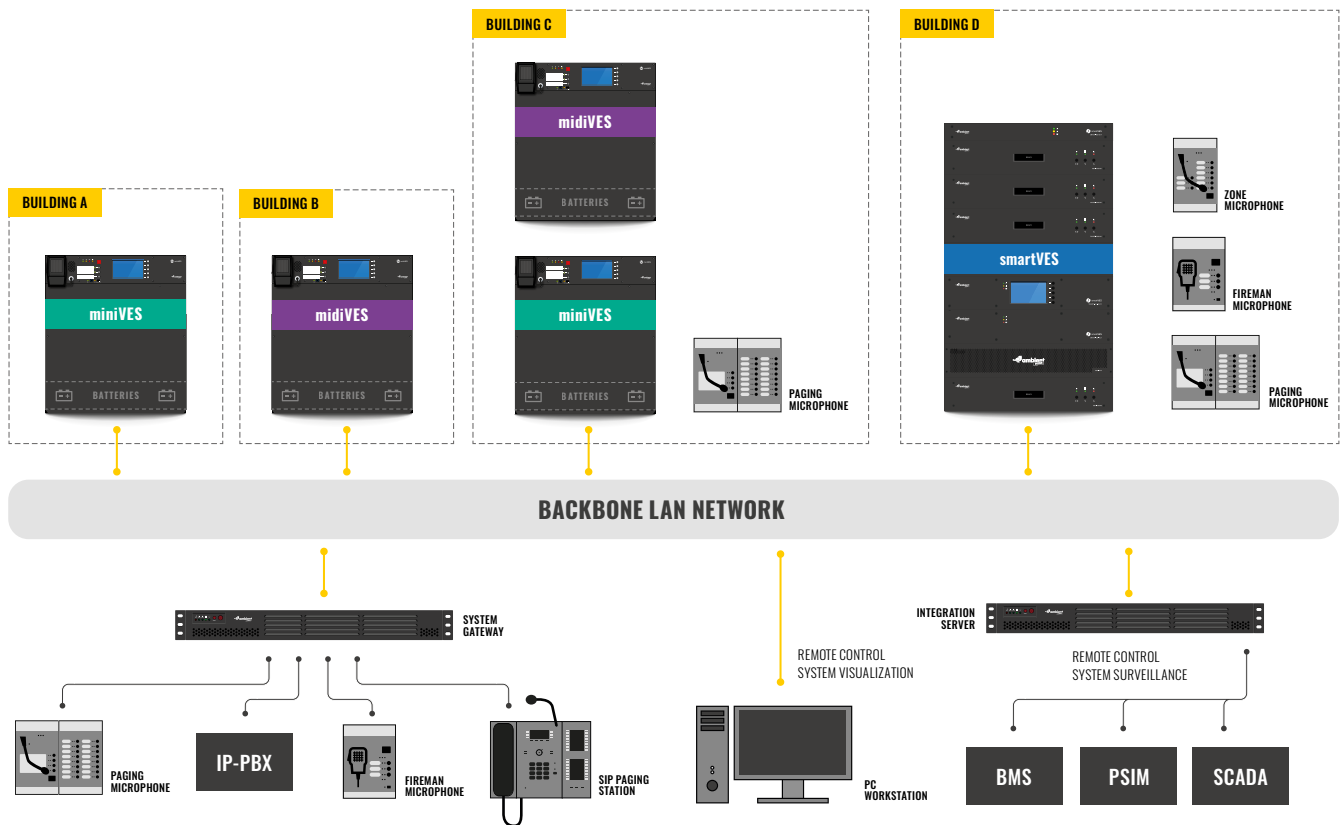
Unified Communication through Public Address / Voice Alarm and Intercom solution.



We make everyday life safer

# Integrated PAVA and SIP systems

Modern facilities require an integrated approach into their security and communication systems. Ambient System presents an integrated solution that combines the functionality of an EN 54 certified Voice Alarm System, fully digital SIP Intercom & PBX system, as well as a visualization and management platform, which shall allow to control over the above – and other system – in one unified fully configurable Graphic User Interface (GUI).



## Benefits of the integrated Voice Alarm (PAVA) & Intercom (SIP) System

Automated emergency broadcasts controlled by the FIRE ALARM SYSTEM and BUILDING MANAGEMENT SYSTEM, scheduled daily broadcasts, ad-hoc messages spoken by the facility staff.

### ONE WAY COMMUNICATION

EN54 compliant Voice Alarm offers high reliability by implementation of built-in redundancies and self-monitoring functions ensuring the system works at all times.

Intercoms located throughout the facility allow the staff to communicate and other facility users to quickly receive information or call for aid.

### TWO WAY COMMUNICATION

Seamless operation - facility staff is equipped with desktop SIP paging station, used in dual role of: paging microphone & intercom.

# PAVA solutions

Ambient System offers a portfolio of 3 types of EN 54 certified PAVA systems.

- ✓ All our systems operate the same software platform and are thus fully compatible in terms of audio and control signals exchange allowing to build large audio networks.
- ✓ One shared family of TCP/IP based remote paging microphone, including a Fireman's Microphone.
- ✓ One common software used to program and monitor each system.

## smartVES



smartVES is a fully digital, IP based, Public Address & Voice Alarm (PAVA) system designed to bring speech intelligibility to the next level. smartVES is the successor of the acclaimed MULTIVES system, having full backward compatibility and expanding the list of system features with new advanced DSP algorithms and an AUDIO BUS feature allowing for amplifier sharing. smartVES is the next step in Ambient System development of Voice Alarm Systems, designed to meet the requirements of even most acoustically challenging applications.

### MAIN FEATURES

- » **Designed to work in large networks – scaling up to 375 IP devices and allowing to meet the requirements of even the biggest installations.**
- » **Fully compliant and EN54-16/4 certified, ensuring high performance and reliability under emergency situations.**
- » **Modular Architecture allowing to optimize system costs.**
- » **Can be configured up to No Single Point of Failure.**
- » **DSP with implemented: 3-band parametric EQ on all inputs; 8-band parametric EQ, delay, audio limiter and feedback eliminator on each of the audio outputs.**
- » **Equipped with unique proprietary DSP algorithms ensuring real-time SPEECH INTELLIGIBILITY optimization.**
- » **Easy to use configuration and management software.**
- » **Fully compatible with miniVES and midiVES all-in-one network amplifiers.**



### ADVANCED AUDIO DSP PROCESSING FEATURES

- ✓ Automatic, multi-point process of adjusting the sound of the loudspeakers and their level to the changing conditions in listening area.
- ✓ A unique algorithm that changes the pace and length of speech in real time maximizing the intelligibility of the transmitted messages.
- ✓ Playback of voice messages at optimal volume level, with maximum achievable speech intelligibility under given conditions.

# smartVES system components



EN 54-16



## SMART-CU11-LCD/LT / SMARTVES CONTROL UNITS

- » *Control Units are net-workable audio matrix responsible for controlling the PAVA system amplifier stacks.*
- » *Modular architecture - 11 slots for loudspeaker line cards, I/O cards, etc.*
- » *Integrated DSP (EQ, delay, feedback eliminator, audio limiter).*
- » *SD flash memory card up to 32 GB dedicated for playback and recording of automatic messages (48 kHz, 16 bit).*
- » *Built-in networking: interface with 2x1Gbit Ports, 1x POE port, 2x SFP - fiber connector SC, LC, single or multimode.*



## SMART-DU1604 / ADAPTIVE SOUND PROCESSOR

- » *The SMART-DU1604 is responsible for improving quality of speech signal transmitted by the smartVES system.*
- » *The SMART-DU1604 applies two patented algorithms improving speech intelligibility: Adaptive Filtration (AF) and Speech Temporal Transposition Algorithm (STTA).*
- » *Operation of both algorithms is calibrated to the site-specific background noise and acoustic fingerprint of the room, unique for every acoustic zone.*
- » *SMART-DU1604 operates by collecting and analysing real-time data from the SMART-ANSM-01 sensor microphones, adjusting the output signal for maximum speech clarity.*



## SMART-PSM48 / SMARTVES POWER SUPPLY EQUIPMENT

- » *Modular power supply built around the SMART-PSM48 power manager.*
- » *The SMART-PSM48 controls battery charging and distributes power supply to all system devices, up to at max. 60 A.*
- » *Each SMART-PSM48 allows to connect up to 4x smart-PS48800 PSU units.*
- » *Allows for N+1 PSU redundancy.*
- » *Each SMART-PS48800 Power Supply Unit provides 48VDC and 800W to power system devices (CU, Power Amplifiers, call stations etc.).*



## SMART-PA / SMARTVES POWER AMPLIFIERS

- » *100 / 50 Volt available via terminal blocks at the rear*
- » *Output channels can be linked into:*
  - » *SMART-PA8080B/BE, SMART-PA4160B/BE, SMART-PA8160B/BE: 4 × 160 W, 2 × 320 W or 4 × 320 W by daisy-chaining 50 V tapping (input on parallel).*
  - » *SMART-PA2650B/BE: 1 × 1300 W by daisy-chaining 50 V tapping (input on parallel).*
- » *SMART-PAXXXB/BE series combines with the SMART-PSM48/E Power Supply Manager (charger and back-up supply).*

# All in one – independent rack mount EN 54-4 /16 PA/VA unit



miniVES and midiVES are scalable Public Address & Voice Alarm units suitable for multi-purpose architectures. Devices from miniVES and midiVES series are voice alarm compact control units containing all components within one compact housing, which meet all the requirements of EN 54-16 and EN 54-4 (certificate of constancy of performance 1438-CPR-0527).

## MAIN FEATURES

- » **Designed to work in large networks – scaling up to 250 IP devices and allowing to meet the requirements of even the biggest installations.**
- » **Fully compliant and EN54-16/4 certified, ensuring high performance and reliability under emergency situations.**
- » **Modular Architecture allowing to optimize system costs.**
- » **Can be configured up to No Single Point of Failure.**
- » **DSP with implemented: 3-band parametric EQ on all inputs; 8-band parametric EQ, delay, audio limiter and feedback eliminator on each of the audio outputs.**
- » **Equipped with unique proprietary DSP algorithms ensuring real-time SPEECH INTELLIGIBILITY optimization.**
- » **Easy to use configuration and management software.**



SPECIFICATION	miniVES 2001	miniVES 4001	miniVES 4002	miniVES 8002	midiVES 8003	midiVES 2x8003
No of AB zones	2	4	4	8	8	16
No of speaker lines	4	8	8	16	16	32
No of logical inputs	7+2*					14
No of relay outputs	3+2*					6+2*
Total audio load of the system	320 W	640 W	640 W	640 W	1500 W	3000 W
Backup amplifier	Yes					
No of messages	1	2		3	6	
Audio inputs	1					2
Audio outputs	1				0	

\* Units with network cards with 2xSFP modules and PoE

# Paging microphones for smartVES, miniVES and midiVES

The following TCP/IP paging and analogue microphones are compatible with all of the Ambient System EN54 certified PAVA systems. The product range consists of ABT-DMS and ABT-DMS-LCD paging microphone, the ABT-DFMS Fireman's microphone and ABT-EKB-20M expansion keyboard compatible with all these units.

## ABT-DFMS



- » *Monitored microphone and connection of the microphone module to the system.*
- » *A dedicated evacuation key.*
- » *3 fully-programmable keys with a possibility of connecting up to five 20-key extensions.*
- » *Built-in 2 contact inputs and 2 relay outputs.*
- » *POE or external feeder based power supply.*
- » *Black-box function – recording all announcements played during an alarm.*
- » *Built-in SFP modules and CAT5e for simplicity of implementation of the loop topology.*
- » *Intercom function between all fireman and zone microphone.*

## ABT-DMS



- » *Monitored connection of the unit to the system.*
- » *9 fully-programmable keys with a possibility of connecting up to five 20-key extensions.*
- » *4 non-symmetrical audio inputs, (1/8") stereo jack connector.*
- » *Built-in speaker.*
- » *Stereo jack sockets for a headset.*
- » *Implemented intercom function.*
- » *Power supply via PoE.*

## ABT-DMS-LCD



- » *4.5" LCD touch screen for fast and clear matricing and system management.*
- » *Ability to select zones and messages to be played (pre-recorded or 'live') and other audio input.*
- » *Monitored connection of the unit to the system.*
- » *5 fully-programmable keys with a possibility of connecting up to five 20-key extensions.*

## ABT-EKB-20M



- » *Each extension attached to a fireman microphone or a zone microphone offers additional 20 function keys which can be programmed as required.*

## ABT-M04N



- » *The ABT-M04N is a 4 button analogue microphone with push to talk and LED indicating the ready-to-speak status.*

# Additional devices

## WMC / WALL-MOUNTED CONTROLLER

- » **4,3" LCD touch screen for fast and clear matricing and volume change.**
- » **Non-symmetrical audio input, (1/8") stereo jack connector.**
- » **Stereo jack socets for Headset / Audio out.**
- » **Power supply via PoE or locally 48 VDC.**



For intuitive and easier operation, WMC has been equipped with a touch-screen display. Navigation in the menu and change of settings is possible by means of both control buttons located next to LCD display, and touch-screen display. Wall mounted controller is equipped with Bluetooth audio module which provides wireless audio connection for up to 40 meters between WMC and other Bluetooth source like mobile phone. WMC has 2 local audio inputs

on board and 1 audio output which allows for further system extension. Communication with control units takes place via Ethernet 10/100BASE -TX, 1 LAN port. The WMC controller, via a touchscreen colour display, allows convenient and quick selection of the audio source, volume control of audio inputs and sending to selected zones in the system.

## ABT-DFMS-A PP / PLATFORM ANNOUNCEMENT POINT

- » **Monitored microphone and connection.**
- » **Dedicated evacuation button.**
- » **Three fully programmable buttons.**
- » **IP 65 housing.**
- » **Lock with double-bit insert-5 mm.**



The ABT-DFMS-A PP is a monitored emergency microphone unit designed to operate a platform announcement point. The device connects to the core paging system via TCP/IP network, using either copper or redundant fibre optic interface. The ABT-DFMS-A PP can be used to make live broadcasts to pre-programmed zones or zone groups. It shall also allow to trigger alarm mode and broadcast pre-recorded messages from the systems memory.

The ABT-DFMS-A PP is able to detect and report a button failure and audio path failure, including that of the microphone capsule (the unit supports acoustic surveillance of the microphone component). The ABT-DFMS-A PP is equipped with an intercom function, allowing to communicate with other emergency microphones in the system.

# Yellow Security System Visualization Software

A very important aspect for advanced life-safety and security systems is how the system shall interact with its Operator. The more complex the system, the higher demand for customised and simplified User Interface.



YELLOW is a software for system visualisation, management and third party integration. It allows to constantly monitor multiple connected PAVA system and present their status information via a GUI and a shared operation log. YELLOW can be used as an integration server for third party system, allowing to control the PAVA via SNMPv2 protocol.

## MAIN FEATURES

- » **Activation of virtual and local control inputs in smartVES / miniVES / midiVES.**
- » **Visualisation of statuses Virtual outputs, Zones, Group zones, System statuses.**
- » **Identification of playing sources in all visualized zones.**
- » **Automatic presentation of the alarm location.**
- » **Activation of evacuation or other scenarios.**
- » **SNMP, OPC, Modbus interfaces.**

# EN 54-24 certified Fire Alarm Loudspeakers



	<b>ABT-LA10B</b>	<b>ABT-LA40B</b>	<b>ABT-S136</b>	<b>ABT-S206B</b>
	LINE ARRAY LOUDSPEAKERS		CEILING SPEAKERS	
Power	10W, 100V	40W, 100V	6W, 100V	6W, 100V
Net weight, kg	2	3	0,82	1,13
Enclosure material	Aluminium	Aluminium	Steel	Steel
Dimensions, mm	95 × 268 × 100	92 × 738 × 100	Height 113, ø 134	Height 115, ø 199



	<b>ABT-W6</b>	<b>ABT-P20/P20P</b>
	WALL SPEAKERS	SOUND PROJECTORS
Power	6W, 100V	20W, 100V
Net weight, kg	1,75	2,4
Enclosure material	Steel	Aluminium
Dimensions, mm	260 × 180 × 80	Length 210, ø 143



	<b>ABT-SW176</b>	<b>ABT-T1510</b>
	WALL/ CEILING SPEAKERS	HORN SPEAKERS
Power	6W, 100V	10W, 100V
Net weight, kg	1,2	1,75
Enclosure material	Steel	ABS UL94V0
Dimensions, mm	Height 80, ø 170	Length 236, ø 156



	<b>ABT-HP240EN</b>	<b>ABT-TNL100</b>
	HIGH POWER LOUDSPEAKERS	TUNNEL LOUDSPEAKERS
Power	240W, 100V	100W, 100V
Net weight, kg	29	34,2
Enclosure material	Glass fiber	Stainless steel
Dimensions, mm	500 × 500 × 735	1714 × 1020 × 450

# Special application loudspeakers



**ABT-BS140/ABT-BS220**



**ABT-P20A**

	<b>ABT-P20A</b>
	ACTIVE SOUND PROJECTOR
Power	20W
Net weight, kg	2,1
Enclosure material	Aluminium
Dimensions, mm	Length 210, ø 143 mm



**ABT-OMN100**



**ABT-TNL100-1**

	<b>ABT-BS140</b>	<b>ABT-BS220</b>	<b>ABT-OMN100</b>	<b>ABT-TNL100-1</b>
	ACTIVE BEAM STEERING LINE ARRAY		OMNIDIRECTIONAL LOUDSPEAKER	TUNNEL LOUDSPEAKER
Power	140W	220W	100W, 100V	10W, 100V
Net weight, kg	4,6	5,8	24	14,5
Enclosure material	Aluminium	Aluminium	Aluminium	Stainless steel
Dimensions, mm	900 × 95 × 119	1450 × 95 × 113	Ø 750 × 400	729 × 365 × 253

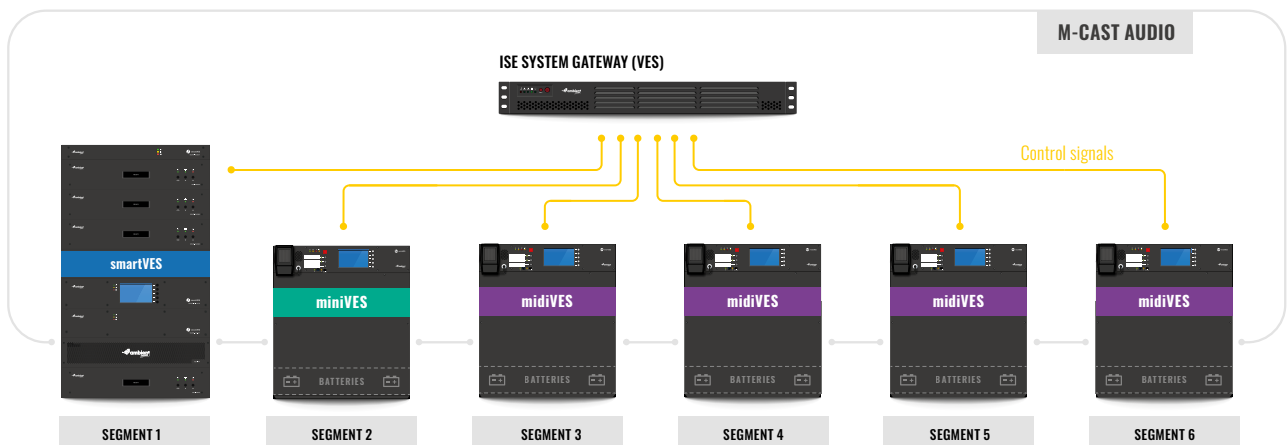
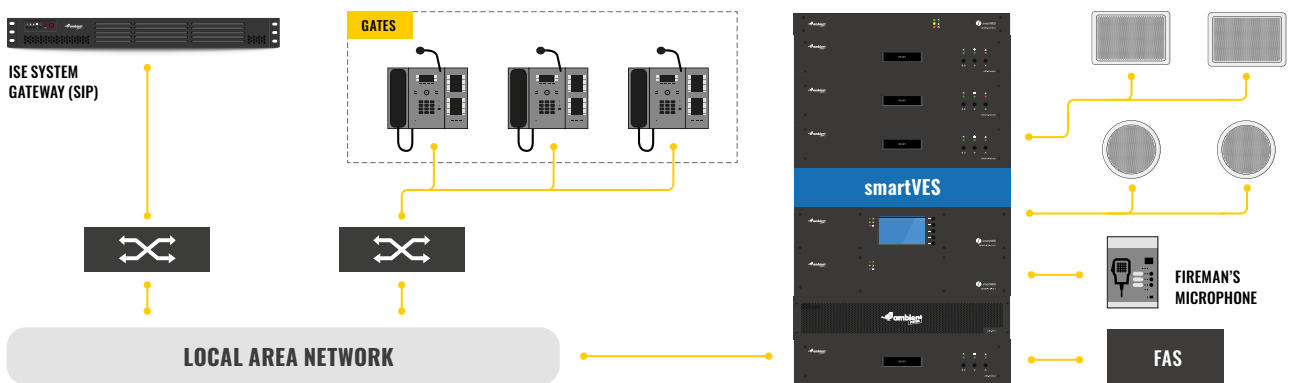
# VES System GATEWAY



The ABT-VES SYSTEM Gateway enables integration of miniVES / midiVES and smartVES platforms with IP telephony systems, in the digital domain. This allows to call in to selected zones and triggering prerecorded messages by any SIP compatible VoIP system. The gateway also incorporates a digital voice announcer controller via an easy-to-operate web browser interface.

## MAIN FEATURES

- » *Dynamically assigning audio zones to SIP numbers.*
- » *Scheduler and audio files directory.*
- » *Call registration.*
- » *16 simultaneous connections.*



# SIP Audio Intercoms

## ICO EMERGENCY / IP AUDIO INTERCOM

- » **Dedicated emergency button.**
- » **Frangible glass plate.**
- » **Echo cancellation.**
- » **HD audio quality.**
- » **Up to 3 fully programmable standard buttons.**
- » **Two relay outputs and one input.**
- » **Audio output for hearing loop driver.**



## ICO EMERGENCY / IP AUDIO INTERCOM

- » **Echo cancellation.**
- » **HD audio quality.**
- » **Up to 3 fully programmable standard buttons.**
- » **Two relay outputs and one input.**
- » **Audio output for hearing loop driver.**
- » **High vandal resistance IK08.**



## ICO STRONG / IP AUDIO INTERCOM

- » **High volume.**
- » **Double microphones.**
- » **Resistance to the environment – IP67.**
- » **Vandalproof - IK10.**
- » **Full duplex.**
- » **Noise reduction.**
- » **Echo cancelation.**
- » **Variouse versions.**



### ICO CLEANROOM / IP AUDIO INTERCOM

- » **Antibacterial Coating.**
- » **Functional Keyboard.**
- » **Resistance to the environment – IP67.**
- » **HD audio.**
- » **Noise reduction.**
- » **Acoustic Echo cancelation.**
- » **Automatic volume control.**
- » **Automatic equalization control.**
- » **Automatic gain control.**
- » **6 programmable (I/O) ports.**



### ICO MAM / IP AUDIO INTERCOM

- » **20 W amplifier.**
- » **Automatically optimised output level.**
- » **Automatic equalisation adjustments.**
- » **Status monitoring for electronics and speaker.**
- » **SNMP reporting of faults and status.**
- » **Electret microphone sensor on cord (1,5m).**



### ICO CUBE / IP AUDIO INTERCOM

- » **Powerful amplifier output.**
- » **Compact dimensions.**
- » **6 programmable I/O.**
- » **2 Relays.**
- » **Active switch.**
- » **Noise reduction.**
- » **Echo cancellation.**
- » **Various versions.**



# References

**Varso Tower**  
Warsaw, Poland



**Mercure Szczyrk Resort**  
Szczyrk, Poland



**Gorzow Arena**  
Gorzow Wielkopolski, Poland



**World War II Museum**  
Gdansk, Poland



**Gdansk Airport**  
Gdansk, Poland



**Pomeranian Metropolitan Railway**  
Gdansk, Poland



**Wroclaw Train Station**  
Wroclaw, Poland



**Tunnel under Swina**  
Swinoujscie, Poland



**Headquarters of Bank Santander**  
London, UK



**BBC White City**  
London, UK



**Security Forces Hospital**  
Rijad, Saudi Arabia



**AFC Sunderland Stadium**  
Sunderland, UK



**Opap Arena**  
Nea Filadelfeia, Greece



**Delhi Metro**  
Delhi, India



**Zeleznica Tunnel**  
Zeleznica, Bulgaria



**Quassim Airport Terminal**  
Buraidah, Saudi Arabia





*We make everyday life safer*

*Ambient System products are constantly being improved. All specifications are therefore subject to change without prior notice.*

EN / 02.2025