



# ***Ambient System***

*We make everyday life safer*



# Table of contents

## MULTIVES

Public Address & Voice Evacuation System.....	5
Control Units .....	8
Microphones .....	11
Exchangeable modules .....	12
MULTIVES system configuration .....	14

## S4T – Safety for Tunnel

Voice Evacuation System with Specialized Tunnel Loudspeakers.....	17
---	----

Power Amplifiers .....	21
------------------------	----

Power Supply Equipment .....	25
------------------------------	----

Fire Alarm Loudspeakers .....	29
-------------------------------	----

Line Array Loudspeakers Columns .....	30
Wall-mounted Loudspeakers .....	32
Sound Projectors .....	36
Horn-type Loudspeakers .....	38
Ceiling-mounted Loudspeakers .....	40
Highly Directional Tunnel Loudspeaker .....	46
High Power Loudspeaker .....	47





EN 54-16	EN 54-4
1488-CPR-0500/W	

### *Intelligent Voice Evacuation Investment*

- ✓ *Flexible and scalable configuration*
- ✓ *Fully digital audio transmission*
- ✓ *Distributed intelligence of the system*
- ✓ *Redundant communication between control units and fireman microphones*
- ✓ *Modular construction of control units*
- ✓ *Fully integrated with Fire Alarm Systems*
- ✓ *Remote management via Ethernet and WAN connection*
- ✓ *Intercom function between all fireman and zone microphones*
- ✓ *A unique system of dynamic allocation of spare amplifiers*
- ✓ *Advance DSP functions*

# MULTIVES

## FLEXIBLE STRUCTURE

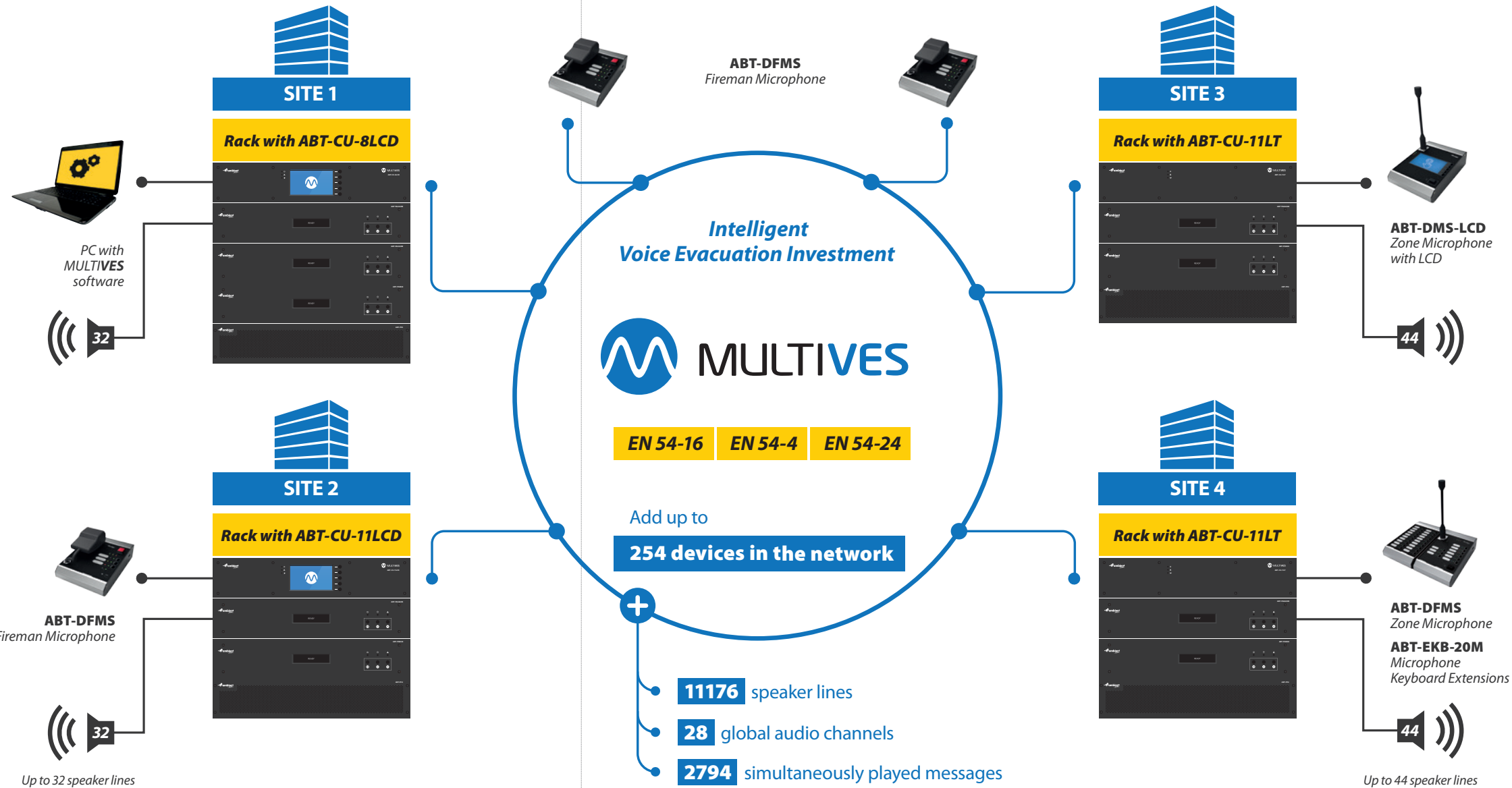
MULTIVES system is designed with a view to a possibility of its versatile application – it is extremely suitable for both decentralized and centralized systems. The architecture of this system is based on fibre optic Ethernet connections between control units and other elements of the system which allows for its application in structures most extensive in terms of area and functionality such as air terminals, oil fields and refineries, commercial centers and office complexes.

At the same time while offering control units tailored to our Clients' needs and requirements in respect of design, development and making as well as multi-channel and multi-net amplifiers Ambient System is able to create compact systems for individual small and medium sized structures as well as for more complex projects connected by a digital network.

MULTIVES is based on the fiber optic technology of digital transmission of voice messages, inclusive of alarm messages, commercial messages and music. The primary task of the system is to cooperate with fire alarm systems and automatic broadcasting of fire hazard messages in the buildings.

The functionality of the system is designed in accordance with EN-54-16, a mandatory standard which has been applicable in Europe since 31st March 2011 and the equivalents of which have also been implemented in many other parts of the world, inclusive of the Middle East.

MULTIVES system comprises control devices, multi-channel amplifiers as well as fireman microphone consoles and zone microphones. The ambiTEC platform is the heart of the system. It enables digital scaling communication not only among all the elements of the system but among other integrated safety systems as well.



### Main Parameters of the MULTIVES System:

- » Compliance with EN 54-16, EN 60849
- » 28 global audio channels
- » Max 254 units in the network
- » Up to 32 GB SD flash memory dedicated for playback and recording messages (48 kHz, 16 bit)
- » Maximum number of simultaneously played messages limited to the number of xCtrlN-4 and xCtrlN-2 cards in the system
- » Intercom function between all microphones
- » External audio inputs in every control units and zone microphones
- » Up to 12 secured amplifiers supported
- » 4 common 100 V audio buses in every Control Unit for spare amplifiers and budget solutions with maximum 4 at the same time played messages
- » DSP with implemented 3 band parametric EQ on all inputs on control units, 8 band parametric EQ, delay lines, audio limiter and feedback eliminator on each of the audio outputs
- » Complex control inputs / outputs and RS485 interfaces for Fire Alarm Systems and BMS integration
- » 8 x 80, 8 x 160 and 2 x 650 W bridgeable Class D amplifiers

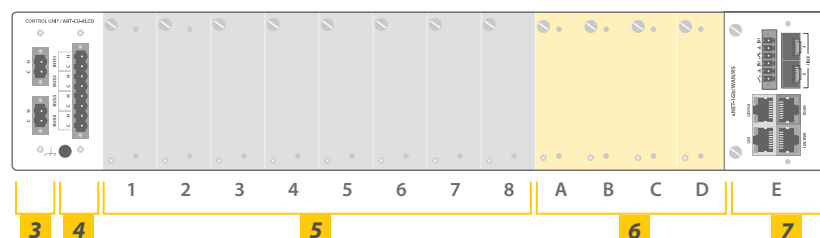
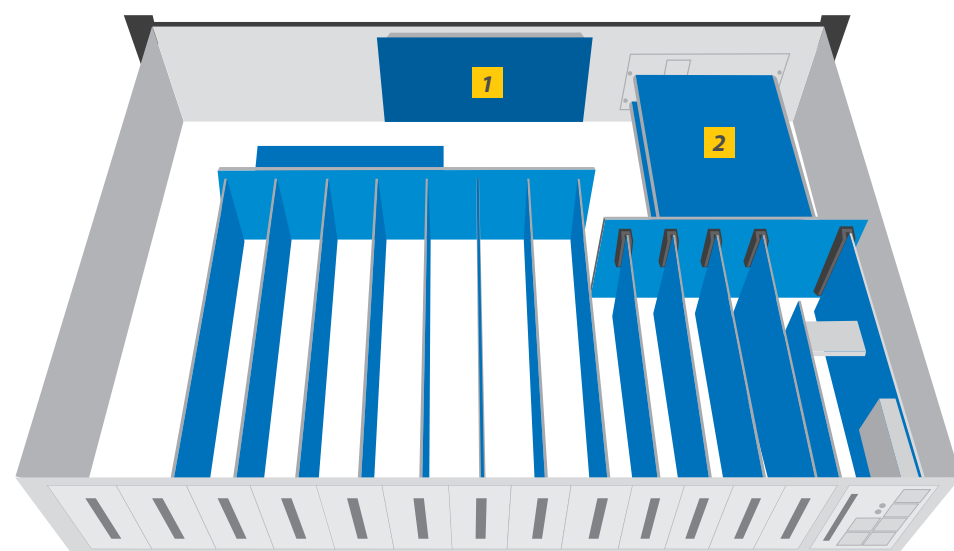
### Elements of Integrated MULTIVES System

MULTIVES Devices		MULTIVES Exchangeable modules	
ABT-CU-8LCD	control unit – 8 zones with touch screen	ABT-xCPU	CPU card
ABT-CU-11LT	control unit – 11 zones LIGHT	ABT-xNET-1Gb/WAN/RS	communication card
ABT-CU-11LCD	control unit – 11 zones with touch screen	ABT-xLogIN-8f	logical Input card for function slot
ABT-DFMS	desktop fireman microphone station	ABT-xLogIN-8c	logical Input card for control slot
ABT-DMS-LCD	desktop zone microphone with touch screen	ABT-xLogOUT-8f	logical output card for function slot
ABT-DMS	desktop zone microphone station	ABT-xLogOUT-8c	logical output card for control slot
ABT-EKB-20M	extension keyboard 20 keys	ABT-xAudio-4/8-RS	audio card 4 IN / 8 OUT AUDIO / RS485
ABT-ISLE	interface communication module and audio signal splitter with RS485 for external systems	ABT-cAudio-4/12	audio card 4 IN / 12 OUT AUDIO
		ABT-xAudi-8	audio card 8 IN AUDIO
		ABT-xCtrlN-2	2 loudspeaker line control card
		ABT-xCtrlN-4	4 loudspeaker line control card



## Control Units

<b>EN 54-16</b>	<b>EN 54-4</b>	<b>1488-CPR-0500/W</b>
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The main feature of the architecture of MULTIVES is versatility, exchangeability of the devices which control its operation of this system such as ABT-CU-8LCD, ABT-CU-11LT, ABT-CU-11LCD – three types of Control Units (CU) that function in a redundant communication ring. Each CU is equipped with unique features so configured as to execute Public Address & Voice Evacuation functions in any point of the system and in any type of the buildings optimally in terms of costs and equipment required. These Control Units may both perform the major function of system control and be a minor element of a local character. What is more, functions performed by central units which control the functioning of the system can be taken over by fireman microphone panels. This is an extremely flexible and scaled structure aimed at functional and cost

optimization of construction of every project, include of the most complex ones.

A Control Unit is the main element of the system which receives an audio signal from sources and broadcasts it to the whole system. A Control Unit is a central unit managing all the remaining elements of the system and enabling flexible configuration of routes for audio signals from any source of signal to any outlet. Global switching of audio routes occurs on the basis of a programmable logic system as well as Ethernet 1G network (UDP/IP, TCP/IP).

A CU is controlled by ABT-xCPU processor card which task is to reproduce audio communications from a SD card and make them available locally and globally. This card exercises system

**MULTIVES CONTROL  
UNIT ELEMENTS:**

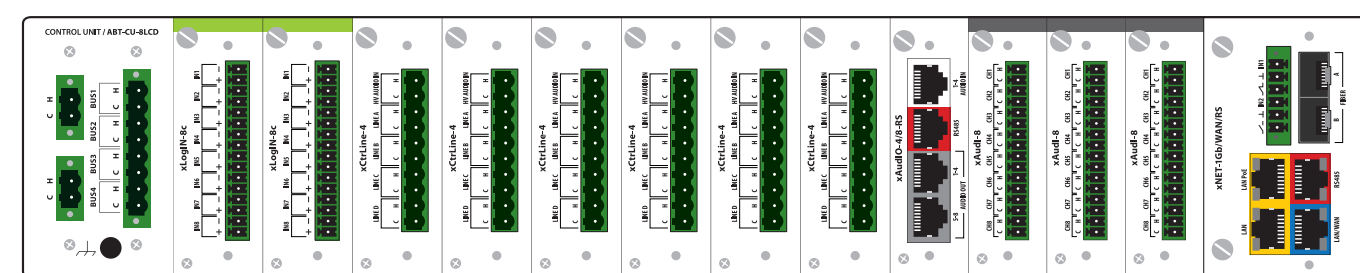
1. **GUI Card** for ABT-CU-8LCD
2. **ABT-xCPU card**
3. **Power Supply**
4. **100 V audio global BUS**
5. **1 – 8 slots** for loudspeaker line control cards and logical output and input cards
6. **A – D slots** for logical and audio output and input cards
7. **E slot** for communication card with SFP modules and copper RJ45 connectors

## ABT-CU-8LCD Control Unit

Front panel



Back panel



ABT-CU-8LCD Control Unit (CU) is a matrix mixer of the input signals which routes signals to four 100 V internal audio buses, a 28-channel digital system buses or directly to audio outputs in a unit. Additional, it is equipped with the unique feature – dual (redundant) processor card (2x ABT-CPU).

CU is equipped with the slots on the rear panel for connecting four input modules, output audio modules or logic modules: ABT-xAudiIO-4/8-RS, ABT-xAudi-8, ABT-xLogIN-8f, ABT-xLogOUT-8f and up to 8 modules of loudspeaker line control or logical inputs / outputs: ABT-xCtrlLine-4 (ABT-xCtrlLine-2), ABT-xLogIN-8c, ABT-xLogOUT-8c.

LCD colour and touch display gives a direct access to the managerial function and monitoring of the whole system. ABT-CU-8LCD is a matrix mixer of the input signals which routes such signals to four 100 V internal audio buses, a 28-channel digital system buses or directly to audio outputs in a unit.

## CHARACTERISTICS

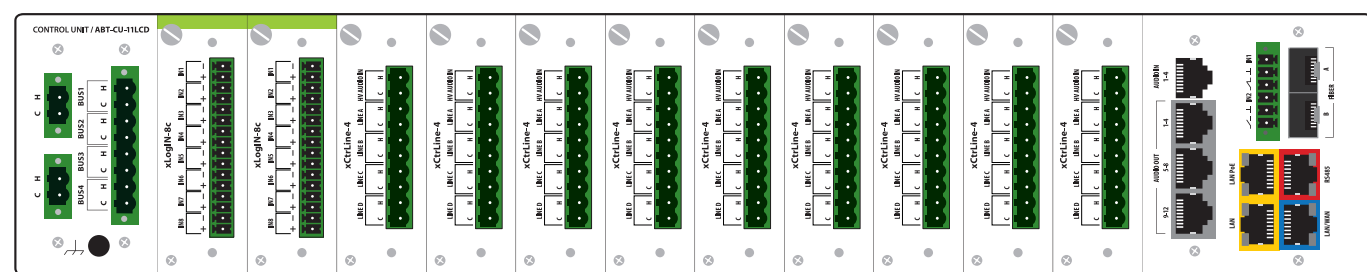
- » **EN 54-16 // 1488-CPR-0500/W certified system**
- » **Fully network-based system allowing for configuration, control and diagnostics via Ethernet**
- » **A possibility of managing up to 254 devices in the network**
- » **8 slots available for any configuration of loudspeaker control cards, control inputs and outputs cards**
- » **Additional 4 slots dedicated only for audio input/output cards and control input/output cards**
- » **8 messages played simultaneously into different zones**
- » **Up to 12 secured amplifiers supported**
- » **Built in 2 control inputs and outputs**
- » **2x1Gbit ports available for system extension**
- » **1x POE port**
- » **Up to 32 GB SD flash memory dedicated for playback and recording messages (48 kHz, 16 bit)**
- » **DSP implemented on each ABT-xAudio-4/8-RS card with 3 band parametric EQ on 4 inputs, 8 band parametric EQ, delay lines, audio limiter and feedback eliminator on each of the audio outputs**
- » **Comprehensive solution based on RS485 allowing for integration MULTIVES system with devices offered by other producers thanks to implementation of standard and proprietary communication interfaces**

## ABT-CU-11LT / ABT-CU-11LCD Control Unit

Front panel



Back panel



ABT-CU-11LT control unit is a matrix mixer of the input signals which routes signals to four 100 V internal audio buses, a 28-channel digital system buses or directly to audio outputs in a unit.

ABT-CU-11LT is designed to work for minor PA & VE systems or as an extension unit in more complex systems. It means that CU can function independently as the central unit of a minor system or be an element of a large complex system for which it represents another level of either territorial extension (operation in a remote structure) or functional extension (operation of further fire zones and loudspeaker lines in such a structure). The flexibility of this CU allows for optimization of both equipment and costs of operation in both minor and major structures as well as scattered groups of buildings.

While working in the network system and when losing connection with a superior unit ABT-CU-11LT is able to carry out fire fighting scenarios independently thanks to the locally recorded configuration. If attached to the main communication ring of the system ABT-CU-11LT can not only control amplifiers and power supply managers but receive alarm and digital signals and send them to other devices in the system as well.

ABT-CU-11LT control unit distributes audio signals to individual zones and supervises the correctness of functioning of individual zones. It also controls the condition of a loudspeaker line and amplifiers. It detects and signals defects and insets a backup amplifier. This CU is equipped with an ABT-cAudio-4/12 card offering 4 audio

inputs and 12 audio outputs intended for connection of amplifier inputs.

ABT-CU-11LT can be equipped also with an LCD colour and touch display that gives a direct access to the managerial function and monitoring of the whole system – in this way we obtain additional configuration called ABT-CU-11LCD.

### CHARACTERISTICS

- » **EN 54-16 certified system**
- » **Fully network-based system allowing for configuration, control and diagnostics via Ethernet**
- » **A possibility of managing up to 254 devices in the network**
- » **11 slots available for any configuration of loudspeaker control cards, control inputs and outputs cards**
- » **Built in audio card with 4 inputs and 12 audio outputs**
- » **12 messages played simultaneously into different zones**
- » **Up to 32 GB SD flash memory dedicated for playback and recording messages (48 kHz, 16 bit)**
- » **Up to 12 secured amplifiers supported**
- » **Built in 2 control inputs and outputs**
- » **1x POE port**
- » **2x 1Gbit ports available for system extension**
- » **Integrated DSP with implemented 3 band parametric EQ on all inputs on control units, 8 band parametric EQ, delay lines, audio limiter and feedback eliminator on each of the audio outputs**
- » **Comprehensive solution based on RS485 allowing for integration MULTIVES system with devices offered by other producers thanks to implementation of standard and proprietary communication interfaces**

# Microphones



**ABT-DFMS**  
FIREMAN MICROPHONE



**ABT-DMS-LCD**  
ZONE MICROPHONE WITH LCD



**ABT-DMS**  
ZONE MICROPHONE

A MULTIVES fireman microphone is a monitored external device cooperating with control units in a redundant communication ring. It can thereby perform a superior function of a system control unit, too.

A fireman microphone is used to induce alarm announcements as well as general announcements, to choose individual zones and to broadcast live voice announcements. It is equipped with programmable function buttons with the help of which functions chosen may be arbitrarily assigned. Up to five ABT-EKB-20M extensions with additional function buttons may be attached to a fireman microphone.

A CPU switch enables immediate and direct broad casting of announcements to all zones without any involvement of the control system (even during a failure of the central processor). The microphone is able to automatically detect a button failure and an audio path to the microphone capsule (inclusive) to ABT-CU-8.

A fireman microphone is also equipped with an intercom function and is able to communicate with each other microphone in the system.

This microphone performs the same role as an ABT-DMS zone microphone. In order to facilitate its operation and to make it more intuitive the microphone is additionally equipped with an LCD touch screen.

### CHARACTERISTICS

- » **4,5" LCD touch screen for fast and clear matricing and system managment**
- » **monitored connection of the unit to the system**
- » **five fully programmable buttons with a possibility of extension up to five 20-button modules**
- » **four non-symmetrical audio inputs, (1/8") stereo jack connector**
- » **built-in speaker**
- » **stereo jack socets for Headset**
- » **implemented intercom function**
- » **power supply via POE**

This zone microphone is used to induce general announcements, to choose individual zones and to broadcast live voice messages.

It is connected directly to a selected control unit or via an additional Ethernet switch. A zone microphone is supplied with power locally or from a control unit via POE.

It is equipped with programmable function buttons which may arbitrarily be assigned selected functions. All the parameters needed for operation of a worksite can be programmed: assignment of zones to various buttons, naming of zones and zone groups, priorities, access to various announce-ments, voice level adjustment, "push to talk" button, music on / music off and music routing. LEDs on the ABT-DMS give also information about existing fault in the system, fault in specific speaker zone, evacuation mode on and type of announcement on the zone (BGM, EVAC, Warning, Fireman microphone).

A zone microphone offers a possibility of connecting up to five ABT-EKB-20M extension with additional function buttons to it.

As a fireman microphone it is also equipped with an intercom function and is able to communicate with each other microphone in the system.

### CHARACTERISTICS

- » **monitored microphone and connection of the microphone module to the system**
- » **dedicated evacuation button**
- » **three fully programmable buttons and a possibility of connecting up to five 20-button extensions**
- » **built-in 2 contact inputs and 2 relay outputs**
- » **POE or external feeder based power supply**
- » **black-box function – recording all announcements played back during an alarm**
- » **built-in SFP modules and CAT5e for simplicity of implementation of the loop topology**
- » **RS 485 for communication with external systems**
- » **Intercom function between all fireman and zone microphones**

## ABT-EKB-20M / MICROPHONE KEYBOARD EXTENSION

Each extension attached to a fireman microphone or a zone microphone offers an additional 20 function buttons.



### CHARACTERISTICS

- » **monitored connection of the unit to the system**
- » **nine fully programmable buttons with a possibility of extension up to five 20-button modules**
- » **four non-symmetrical audio inputs, (1/8") stereo jack connector**
- » **built-in speaker**
- » **stereo jack socets for Headset**
- » **implemented intercom function**
- » **power supply via POE**



# Exchangeable modules

EN 54-16

## GUI CARD ABT-xLCD



It is a 4,5" TFT LCD touch screen with a control module. It allows to get fast and easy access to interactive system menu's such as: loudspeaker zones control, defect detection, alarm cut off, dynamic routing, log archives, intercom and many others.

## CPU CARD ABT-xCPU



It is a card which integrates ABT-CU8 and ABT-CU8LCD control units with other elements of the MULTIVES system. CPU controls whole network traffic from ABT-xNET card and manages audio routing, digital matrix (8x8) as well as all DSP functions.

ABT-xCPU has a built-in server which enables remote access to the configuration parameters of each element of the system. Individual messages as well as logs of events, defects or system update files are recorded in an industrial SD memory card. Two ABT-xCPU cards can be installed in each of ABT-CU8 and ABT-CU8LCD control units.

## ABT-ISLE



The ABT-ISLE is a communication module and audio signal splitter with RS485 for external systems integration.

Address settings – Number of addresses in the range of 0-F (16 addresses).

Local AUDIOIN – 4 input channels on the 8 pin connector. For easier and faster connection of audio sources a Phoenix-type connectors can be used. LOCAL AUDIO IN jack (8 pin connector Phoenix) is bridged with LOCAL AUDIO OUT (RJ-45).

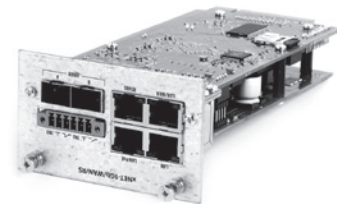
Output amplifiers – RJ-45 connector for the 4-channel amplifier. // Local AUDIOOUT – RJ-45 connector for input signals to the system // PSM – RJ-45 connector for the power manager. the power manager.

## 8 AUDIO INPUT CARD FOR FUNCTION SLOT ABT-xAudi-8



This audio input extension card is destined for a function slot of ABT-CU-8/LCD. It offers 8 symmetrical line audio inputs via a Phoenix-type connector.

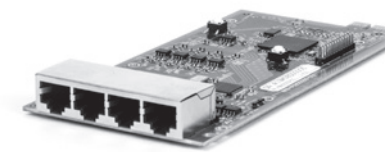
## COMUNICATION CARD ABT-xNET-1Gb/WAN/RS



ABT-xNET is a communication card consists of two independent 1 GB network switches. Network switch no. 1 is destined solely for transition of data connected with the basic functionality of the MULTIVES system, i.e. working of the emergency sound system and AVB operation whereas network switch no. 2 is used for remote connections. This card operates TCP/UDP/PTP/DHCP protocols and assures CPU-OFF based audio data exchange by means of a protocol developed by Ambient System.

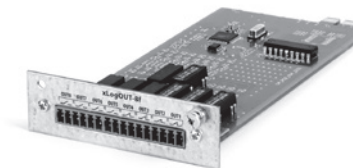
In addition the card has an RS485 port enabling implementation and integration of the MULTIVES system with any other systems, e.g. FAS, by means of exchangeable libraries with protocol descriptions. Another functionality is a POE splitter for providing power to, among others, fireman microphones.

## 4 AUDIO INPUT / 8 AUDIO OUTPUT CARD ABT-xAudiO-4/8-RS



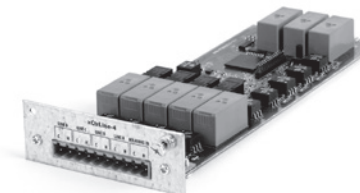
This audio input/output card is destined for a function slot of ABT-CU-8/LCD. It offers 4 line audio inputs via an RJ45 connector as well as 8 symmetrical outputs via an RJ45 connector for leading out audio signals to the external devices or amplifiers of the MULTIVES system. The card is also equipped with an RS485 interface with the help of which the MULTIVES system can be controlled or integrated with devices offered by other producers.

## LOGICAL OUTPUT CARD FOR FUNCTION / CONTROL SLOT ABT-xLogOUT-8f / ABT-xLogOUT-8c



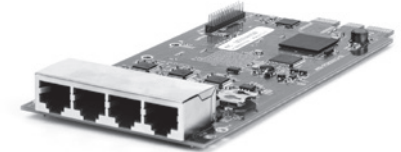
The logical output card has 8 relays: 4 – normal closed and 4 – normal open. Each of them is fully programmable in terms of the way of functioning (NC/NO) as well as functions correlation.

## 4 LOUDSPEAKER LINE CONTROL CARD ABT-xCtrlN-4



This card is destined for a control slot of every control unit and it offers 4 independent loudspeaker line outlets. Measurement of the lines can be done by 2 methods: the impedance method or the EOL module method. The card detects failure of the amplifier and switches the 100 V signal between internal buses and individual amplifier input on the card. Thanks to built-in dedicated measuring component on an ABT-xCtrlN-4 card monitors the status of the internal rail.

## 4 AUDIO INPUT / 12 AUDIO OUTPUT CARD ABT-cAudiO-4/12



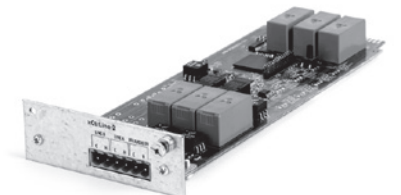
This card is destined solely for an ABT-CU-11LT Control Unit. It offers 4 symmetrical line audio inputs (RJ45 connector) and 12 symmetrical outputs to lead out audio signals to the external devices or amplifiers of the MULTIVES system.

## LOGICAL INPUT CARD FOR FUNCTION / CONTROL SLOT ABT-xLogIN-8f / ABT-xLogIN-8c



The logical input card a function or control slot has 8 control inputs which may receive signals from other systems in order to trigger a desired reaction of MULTIVES system. Inputs of an ABT-xLogIN-8f card offer two modes of work: a non-potential mode (normally shorted /normally opened) and a voltage mode. Moreover, the card monitors shortings and openings of cables connected to inputs.

## 2 LOUDSPEAKER LINE CONTROL CARD ABT-xCtrlN-2



An ABT-xCtrlN-2 card is destined for a control slot of every control unit and it offers two independent loudspeaker line outlets (A, B). Measurement of the lines can be done by two methods: the impedance method or the EOL module method.

The card detects failure of the amplifier and switches the 100 V signal between internal buses and individual amplifier input on the card.

# MULTIVES system configuration

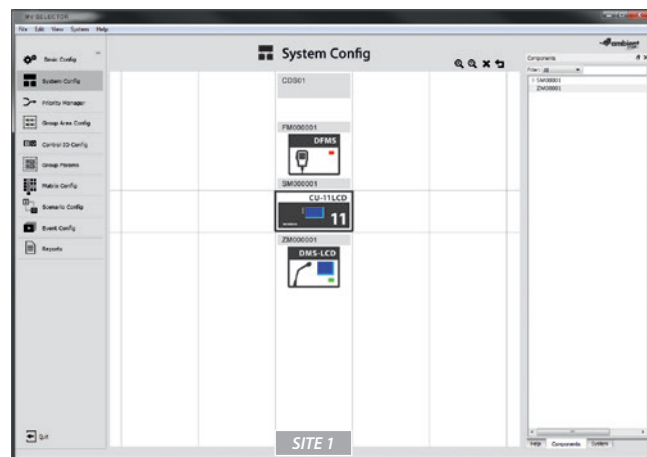
## software / system examples

### MULTIVES SELECTOR

MULTIVES SELECTOR is an essential tool for MULTIVES system configuration via PC. MV SELECTOR allows to select and match Public Address & Voice Evacuation MULTIVES Systems with a great number of similar or different devices to be configured, supervised and controlled centrally from a single user interface.

MV SELECTOR supports all IP-based MULTIVES devices offering control and configuration for control units (ABT-CU-8LCD, ABT-CU-11LT, ABT-CU-11LCD) and microphones (ABT-DFMS FIREMAN MICROPHONE, ABT-DMS-LCD ZONE MICROPHONE WITH LCD, ABT-DMS ZONE MICROPHONE).

### EXAMPLE 1 / HOTEL

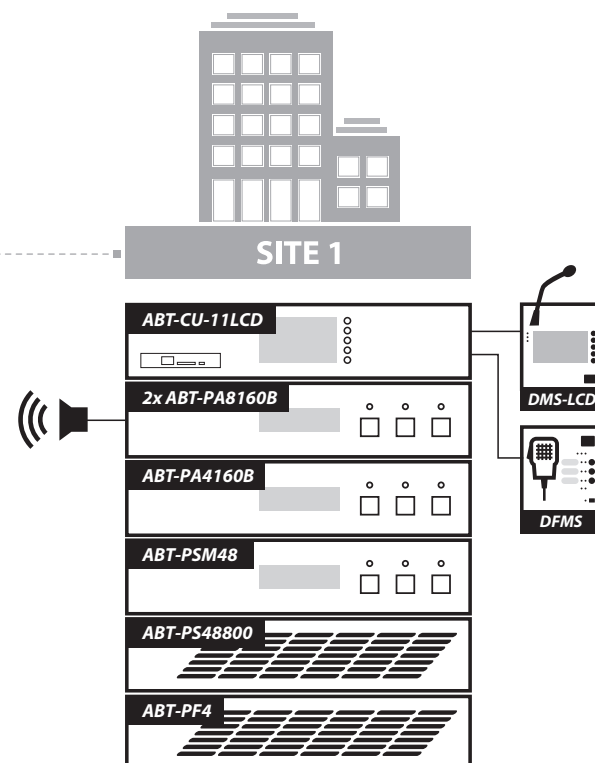


#### Exemplary configurations of the small MULTIVES system:

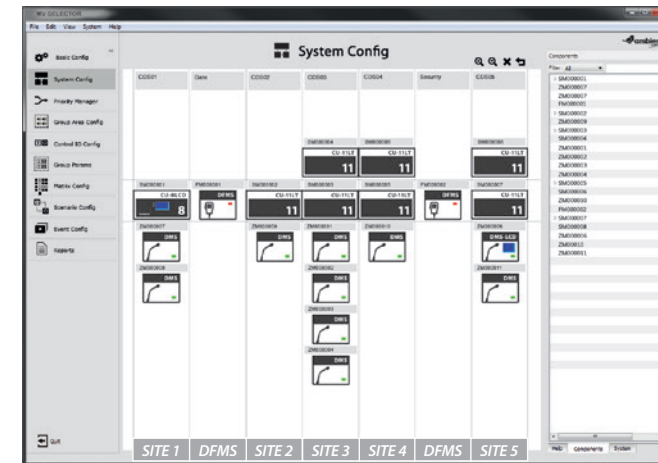
- » 1 building / Hotel
- » 32-loudspeaker lines (16 AB)
- » 8 audio channels

#### with the dedicated devices:

- » ABT-CU-11LCD (8xABT-xCtrlN-4)
- » 2 x 4 channels x 320 W (2xABT-PA8160B) amplifier
- » 1 x 2 channels x 320 W (1xABT-PA4160B) backup amplifier
- » Power Supply Equipment
- » 1 x ABT-DFMS fireman microphone
- » 1 x ABT-DMS-LCD zone microphone with LCD



### EXAMPLE 2 / OIL RAFFINERY

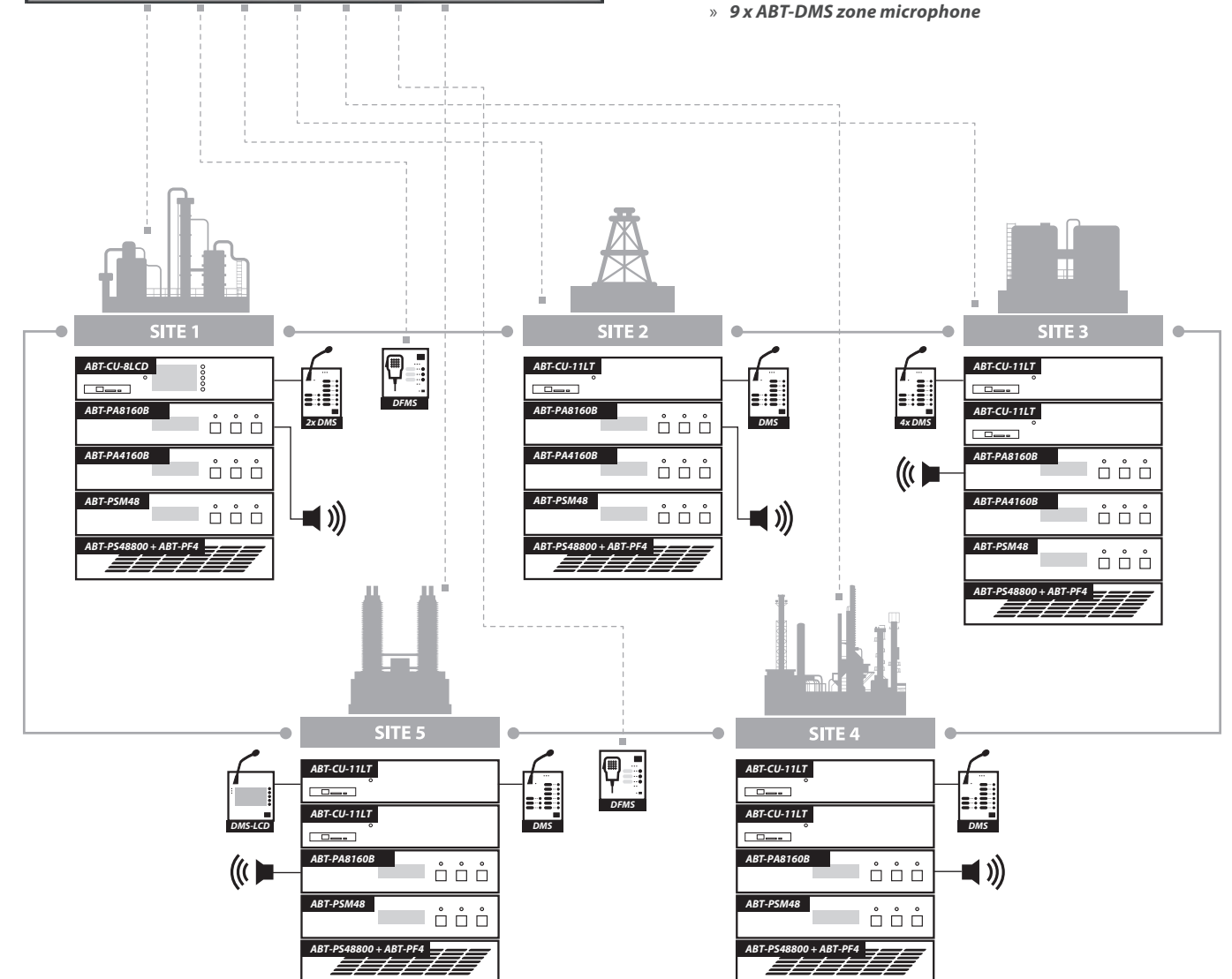


#### Exemplary configurations of the big MULTIVES system:

- » 5 buildings / Oil Refinery
- » 292-loudspeaker lines (146 AB)
- » 28 audio channels

#### with the dedicated devices:

- » 1 x ABT-CU-8LCD Control Unit (8xABT-xCtrlN-4)
- » 7 x ABT-CU-11LT Control Unit (8xABT-xCtrlN-4)
- » 5 x 4 channels x 320 W (5xABT-PA8160B) amplifier
- » 4 x 2 channels x 320 W (4xABT-PA4160B) backup amplifier
- » Power Supply Equipment
- » 2 x ABT-DFMS fireman microphone
- » 1 x ABT-DMS-LCD zone microphone with LCD
- » 9 x ABT-DMS zone microphone







Safety for Tunnel

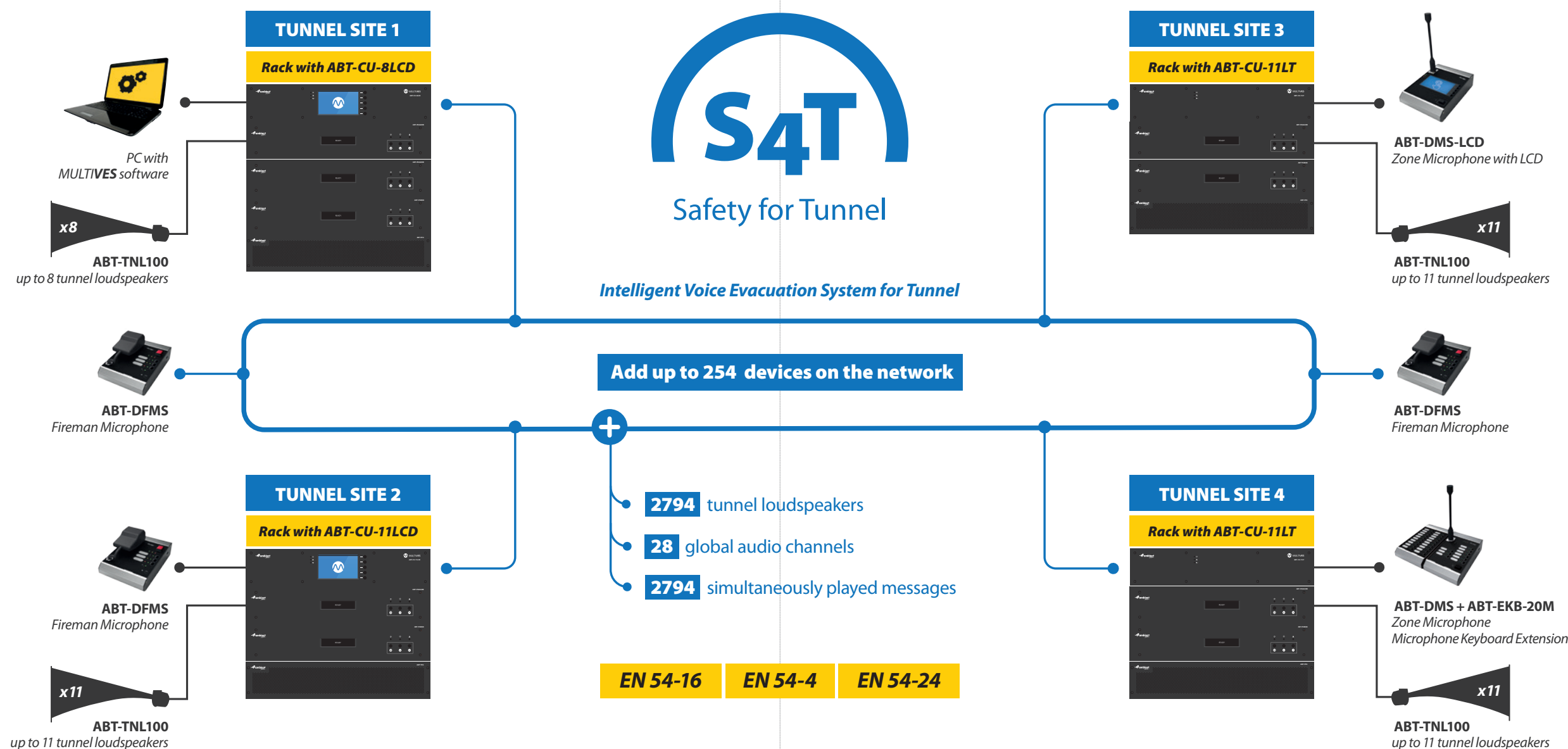
EN 54-4

EN 54-16

EN 54-24

**ADVANCED Voice Evacuation System  
with Specialized Tunnel Loudspeakers**

- ✓ *Advanced DSP for best audio transmission in harsh acoustic conditions*
- ✓ *Communication redundancy between control units and fireman microphone*
- ✓ *Distributed intelligence of the system*
- ✓ *Flexible and scalable configuration*
- ✓ *Specially designed for tunnel applications*
- ✓ *Highly directional asymmetric horn*
- ✓ *Excellent speech intelligibility*
- ✓ *Stainless steel construction*



# Safety for Tunnel

ADVANCED Voice Evacuation System with specialized Tunnel Loudspeakers

## Main Parameters of the MULTIVES System:

- » Compliance with EN 54-16, EN 60849
- » 28 global audio channels
- » Max 254 units on the network
- » Up to 32 GB SD flash memory dedicated to playback and recording messages (48 kHz, 16 bit)
- » Maximum number of simultaneously played messages dependent on the number of xCtrlN-4 and xCtrlN-2 cards in the system
- » Intercom function between all microphones
- » External audio inputs in every control unit and zone microphones
- » 4 common 100 V audio buses for budget solutions with maximum 4 messages played simultaneously
- » Up to 12 monitored amplifiers supported on each control unit
- » DSP with implemented 3 band parametric EQ on all inputs and 8 band parametric EQ, delay line, audio limiter and feedback suppressor on all audio outputs
- » Complex control inputs / outputs and RS485 interfaces for Fire Alarm Systems and BMS integration
- » 8 x 80, 8 x 160 and 2 x 650 W bridgeable Class D amplifiers

## Elements of S4T System

MULTIVES Devices		Fire Alarm Loudspeakers	
ABT-CU-8LCD	control unit – 8 zones with touch screen	ABT-TNL100	highly directional tunnel loudspeaker
ABT-CU-11LT	control unit – 11 zones LIGHT	Power amplifiers	
ABT-CU-11LCD	control unit – 11 zones with touch screen	ABT-PA8080B	8x 80 Watt class-D power amplifier
ABT-DFMS	desktop fireman microphone station	ABT-PA8160B	8x 160 Watt class-D power amplifier
ABT-DMS-LCD	desktop zone microphone with touch screen	ABT-PA2650B	2x 650 Watt class-D power amplifier
ABT-DMS	desktop zone microphone station	Power Supply Equipment	
ABT-EKB-20M	extension keyboard 20 keys	ABT-PSM48	Power Supply Manager
ABT-ISLE	interface communication module and audio signal splitter with RS485 for external systems	ABT-PS48800	Power Supply Unit 48 V / 800 W





# ***Power Amplifiers***

**EN 54-16**

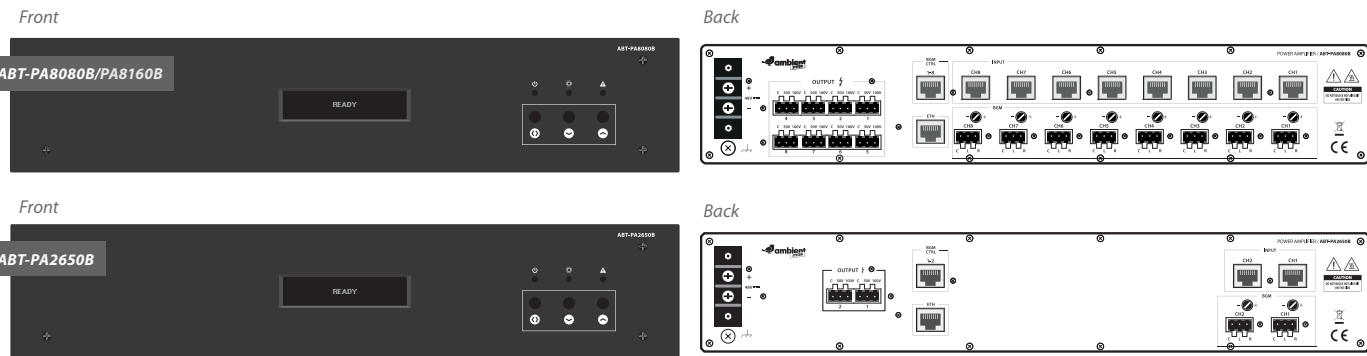
***ABT-PA8080B / ABT-PA8160B / ABT-PA2650B***

- ✓ *Designed in accordance with EN 54-16 standards applicable to Voice Evacuation Systems*
- ✓ *Can be used in every Public Address System*
- ✓ *Destined for MULTIVES system*

# ABT-PA8080B/8160B/2650B

EN 54-16

## Power Amplifiers



The Amplifiers are designed for perfect integration into the Ambient System solutions. Thanks to their flexibility, they can also be used for any other Public Address and Voice Evacuation applications. These amplifiers have been developed to meet the specific requirements of the EN 54-16 standard for safety installations.

The ABT-PAXXXXB is a family of 2U, rack mountable, 8-channel (ABT-PA8080B, ABT-PA8160B) and 2-channel (high power ABT-PA2650B) class-D transformer isolated power amplifiers for 50V and 100V distributed loudspeaker systems. Amplifier ABT-PA8080B can deliver up to 8x 80W, for ABT-PA8160B and ABT-2650B delivering power increases respectively to the 8x 160 W and 2x 650 W. In a bridged mode amplifier channels are combined and can deliver 4x 160 W for ABT-PA8080B, 4x 320 W for ABT-PA8160B and 1x 1300 W for ABT-PA2650B.

These amplifiers have 48 VDC input which allows to connect with battery backup system for maximum availability and durability in a voice evacuation system.

The ABT-PAXXXXB amplifiers are powered from external power supply module ABT-PS48800 working in a block. The current from block is distributed to individual amplifiers through the „power manager“ ABT-PSM48 (device includes a battery charger and is in compliance with EN 54-4).

The ABT-PAXXXXB amplifiers are prepared to connect an external audio source by using up to the eight BGM inputs (1 per channel) with the sensitivity level regulation. In the alarm mode the BGM inputs have to be muted by shorting the lines from BGM CTRL to the ground.

## CHARACTERISTICS

- » **Front panel indicators include:**
  - › **Supply**
  - › **Active**
  - › **Fault**
- » **100 / 50 Volt available via terminal blocks at the rear**
- » **Output channels can be linked into:**
  - › **ABT-PA8080B, ABT-PA8160B:**  
4 x 160 W or 4 x 320 W by daisy-chaining  
50 V tapping (input on parallel)
  - › **ABT-PA2650B:**  
1 x 1300 W by daisy-chaining  
50 V tapping (input on parallel)
- » **ABT-PAXXXXB series combines with the ABT-PSM48 Power Supply Manager (charger and back-up supply)**
- » **At the rear of the ABT-PAXXXXB you will find:**
  - › **Individual level adjusters**
  - › **General fault contact**  
(Dry contact)
  - › **BGM inputs**

### ABT-PA8080B

8 x 80 Watt class-D power amplifier.

Can be bridge into: 1 x 160 W + 6 x 80 W; 2 x 160 W + 4 x 80 W; 3 x 160 W + 2 x 80 W or 4 x 160 W

### ABT-PA8160B

8 x 160 Watt class-D power amplifier.

Can be bridge into: 1 x 320 W + 6 x 160 W; 2 x 320 W + 4 x 160 W; 3 x 320 W + 2 x 160 W or 4 x 320 W

### ABT-PA2650B

2 x 650 Watt class-D power amplifier

Can be bridge into: 1 x 1300 W

ABT-PAXXXXB casings: are 2U high, 19-inch rack mountable.

	unit	ABT-PA8080B	ABT-PA8160B	ABT-PA2650B
Power supply				
Nominal DC input voltage	V	48		
DC input voltage range	V	42 – 57		
Idle current DC channels in standby	mA	570	570	330
DC fuse rating (internal)	A	2x 7.5 AF-H	2x 15 AF-H	2x 15 AF-H
Overall power efficiency nominal DC input max output power at 1 kHz	%	80%		
Power consumption				
Sleep	A	0.15	0.15	0.15
Active		0.57	0.57	0.33
Max. nominal current		20	38	38
Amplifier				
Continuous nominal output power per channel, all channels driven into nominal load at 1 kHz 30°C ambient	W	80 125 Ω / 100 nF	160 62 Ω / 200 nF	650 15,4 Ω / 200 nF
Continuous nominal output power per channel, all channels driven into nominal load at 1 kHz 55°C ambient	W	TBA	TBA	TBA
Nominal balanced input level for 100 V output at 1 kHz and nominal load	V	1		
Balanced input level trim range for 100 V output at 1 kHz and nominal load	V	0.95 – 3		
Max balanced input level	V	3		
Input impedance at 1 kHz	Ω	22k		
Input common mode rejection at <1 kHz	dB	>61		
Frequency response (-6 dB)	Hz	75 – 20k 125 Ω / 100 nF	75 – 20k 62 Ω / 200 nF	75 – 22k 15,4 Ω / 200 nF
S/N ref nominal power at 1 kHz 22 Hz – 22 kHz	dB	>85 125 Ω / 100 nF	>85 62 Ω / 200 nF	>85 15,4 Ω / 200 nF
THD power 1 kHz (42 V – 57 V)	%	<10%		
Crosstalk between channel 50 Hz – 20 kHz nominal load dB	dB	< -70 125 Ω / 100 nF	< -70 62 Ω / 200 nF	< -70 15,4 Ω / 200 nF
Connectivity				
DC input socket		DG58C-A-2P13		
Audio output socket		3 pin PHOENIX 5.08 mm		
Nominal output voltage taps V		50 / 100		
Mechanical				
Front panel width	mm	482		
Back panel width	mm	445		
Height	mm	88,5		
Net Weight	kg	15	18.6	15
Gross weight (including packaging)	kg	16.2	19.8	16.2
Packaging dimensions	mm	150 x 530 x 610		





# ***Power Supply Equipment***

**EN 54-24**

**EN 12101-10**

***ABT-PSM48/PS48800/PF4***

***ABT-PSM24/PS24500/PF4***

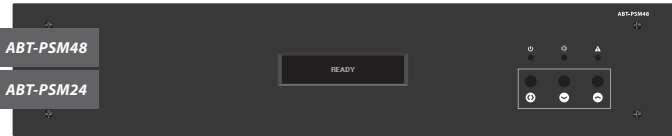
- ✓ *Designed in accordance with:*
  - › *EN 54-4 standard applicable to Voice Evacuation System*
  - › *EN 12101-10 standard applicable to Smoke and Heat Control System*
- ✓ *ABT-PSM48 – destined for MULTIVES system*
- ✓ *ABT-PSM24 and ABT-PSM48 – can be used in every 24 V or 48 V PAVA and other systems*

# ABT-PSM48/PSM24 ABT-PS48800/PS24500/PF4

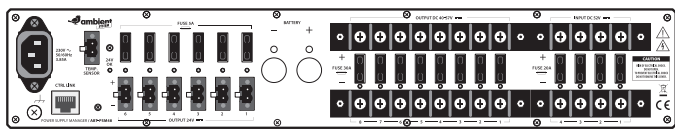
EN 54-24  
EN 12101-10

## Power Supply Equipment

Power Supply Manager / Front



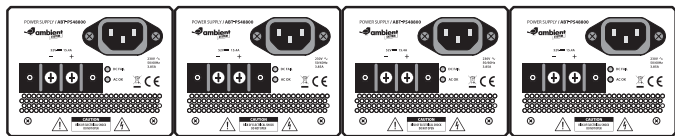
Power Supply Manager / Back



Power Frame / Front



Power Supply Units / Back



ABT-PSM48/24 Power Supply Manager is designed for distribution of DC Power Supply from Power Supply Units (PSU) and a back-up battery. The unit controls battery charging and distributes power supply to all Voice Evacuation System (VES) equipment at max 60 A. When the system uses battery back-up, the power supplied is 3.6 kW (48 V) and 1.8 kW (24 V). The unit complies with the EN 54-4 VES standards and also EN 12101-10 Smoke and Heat Control System standards.

As a main source of energy distribution, the manager uses external modules 800 W (ABT-PS48800) for 48 V and 500 W (ABT-PS24500) for 24 V. PSM48 power

supply manager uses internal power converter for 24 V equipment. As a source of stand-by power supply it uses the battery bank of the capacity of up to 200 Ah.

ABT-PSM48/24 cooperates with the 4x12 V / 2x12 V VRLA battery bank. It maintains the bank in charged condition, ensures temperature compensation of charging parameters and monitors serial resistance of the battery and its wiring as specified in Exhibit No. A2 to the EN 54-4 Standard.

ABT-PSM48/24 co-operates with up to 4 modules of ABT-PS4880/PS2450 Power

Supply Units. The manager ensures safe connection for the purpose of parallel operations and monitors the output parameters of each power supply unit.

ABT-PS48800/PS24500 is designed for assembling in a dedicated ABT-PF4 Power Supply Unit Frame. The elements of the system are designed for assembling in a Rack 19" IP30-type.

Characteristics		
	ABT-PSM48	ABT-PSM24
Maximum configuration	1x ABT-PSM48/PSM24: Power Supply Manager ABT-PS4880/PS2450: Power Supply Unit 1xABT-PF4 - Power Supply Units Frame	
AC power supply	230 VAC + 10%-15%; 50/60 Hz	
Max nominal power consumption	885 W / 3.85 A	590 W / 2.6 A
Efficiency at rated power	> 90%	> 85%
DC input	4 ; bolted terminals; dedicated power supply unit (ABT-PS48800/PS24500)	
DC input protection	4 x 20 A 80 Volt DC	
DC outputs	8 x 48 V; each output max. 30 A	6 x 24 V; each output max. 5 A
Summary maximum DC output load (24 V and 52 V)	3600 W	1800 W
Battery (type)	4 pieces, VRLA 12 V 15-200 Ah max. 8 mΩ	2 pieces, VRLA 12 V 15-200 Ah max. 8 mΩ
Charging current	max. 14 A	
Charging voltage	54,6 V ± 0,6 V (at 25°C)	27,3 V ± 0,3 V (at 25°C)
Maximum resistance of wiring and fuses	10 mΩ	
Maximum total serial resistance of wiring, fuses, and batteries	28 – 100 mΩ	18 – 54 mΩ
Operating temperature	-5°C up +40°C	
Dimensions	482 (W) x 85 (H) x 443 (D)	
Weight	7.2 kg	
	ABT-PS48800	ABT-PS24500
AC power supply	230 VAC +10% -15%, 50/60Hz, 3.85 A Wire with IEC 60320 C13 3x0,75 mm <sup>2</sup> coupling (supplied with the unit)	
Maximum power consumption	885 W / 3.85 A	590 W / 2.6 A
Efficiency at rated power	> 90%	> 85%
AC input protection	T6.3 A/250 V 5x20mm slow-blow fuse (accessed when the casing is open)	
Protection from electric shock	Class I (EN 60065)	
DC output	52 VDC; max. 15.4 A	26 VDC; max. 19.2 A
Dimensions	85 (W) x 95 (H) x 395 (D)	
Weight	2.6 kg	



# ***Fire Alarm Loudspeakers***

**EN 54-24**

- ✓ *ABT-LA30, ABT-LA60*
- ✓ *ABT-W6 / ABT-W6/AB*
- ✓ *MCR-SWSM6, MCR-SMSP20*
- ✓ *ABT-T1510, ABT-T2215, ABT-T2430*
- ✓ *ABT-S276/AB*
- ✓ *ABT-S106, ABT-S136, ABT-S2016*
- ✓ *ABT-S2010, ABT-S2710*
- ✓ *ABT-TNL100*
- ✓ *ABT-HP240*



# ABT-LA30/LA60

## Line Array Loudspeakers Columns

- ✓ Full compliance with EN 54-24 Standards
- ✓ Certificate of Conformity issued by ITB: 1488-CPD-0207/W

ABT-LA fire-alarm loudspeakers mean a new quality among the facilities of the kind. ABT-LA30 and ABT-LA60 units are line-array loudspeaker columns, which means they ensure considerably farther reach than conventional units at simultaneous maintenance of high uniformity of sound level in the area of broadcasting. Being line-array acoustic sources, ABT-LA columns feature a unique high directionality in vertical plane so that the sound they generate will rather go exactly towards the controlled audiospace instead of unwanted areas, such as e.g. ceiling or floor. ABT-LA columns are mostly designed for the rooms with high reverberation time as well as for other places where the quality of speech is reduced due to unfavourable conditions.

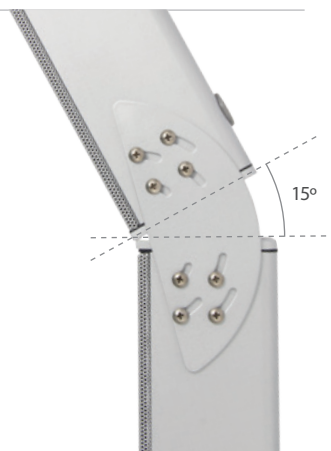
The ABT-LA design allows easy mechanical and electrical integration of the two columns into a single consistent unit which becomes a loudspeaker with higher power output and farther reach. It makes a better use of the benefits offered by the line-array source. Variable geometry of the column allows generating two sound beams to be randomly sent at various angles to the two different areas. Sound transfer band of the ABT-LA columns has been designed to achieve the highest possible fidelity of speech signal reproduction and to ensure unchallenged parameters of the quality of speech, all as required by the standards applicable to the Voice Evacuation Systems.

Solid aluminium enclosure, steel assembly jigs, and IP 65 guarantee long-term failure-free operations under any conditions, both in outdoor and indoor environments. The columns are entirely dustproof and resistant to the impact of direct water jet.

EN 54-24



Connect angle:  
-15° ÷ +15°



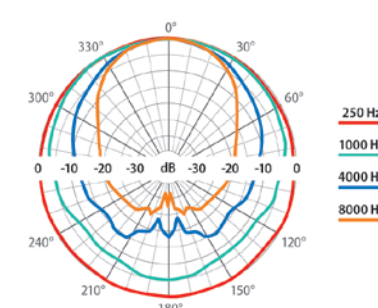
	ABT-LA30	ABT-LA60
<b>Electrical</b>		
Maximum power, W	48	96
Rated power, W	30	60
Tappings 100 V line, W	30 / 15 / 7,5 / 3,75	60 / 30 / 15 / 7,5
Transformer impedance, Ω 100V	333,3 / 666,6 / 1333,3 / 2631,5	166,6 / 333,3 / 666,6 / 1333,3
Driver impedance, Ω	12	6
Effective frequency range, Hz	141 – 20 000	136 – 20 000
Sensitivity @ 4 m, 1 W, dB	80	81
SPL @ 4 m, Rated power, dB	95	99
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz – 6 kHz*	92	96
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz – 6 kHz*	107	114
Horizontal coverage angle at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	360 / 220 / 180 / 110	360 / 230 / 160 / 110
Vertical coverage angle at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	160 / 70 / 36 / 18	70 / 30 / 16 / 8
<b>Environmental</b>		
Environmental type / IP Rating according to EN 54-24	B / IP33C	B / IP33C
IP Rating	65	65
Min / Max Amb Temp	-25°C / 70°C	-25°C / 70°C
<b>Mechanical</b>		
Dimensions H x W x D, mm	510 x 80 x 110	870 x 80 x 110
Net Weight, kg	2,8	5,5
Colour	Silver	Silver
Enclosure material	Aluminium	Aluminium
<b>Option</b>		
For DC line monitoring	Capacitor	Capacitor
Colour optional	RAL Palette	RAL Palette
<b>Ease Model</b>		
	✓	✓

### ABT-LA 30

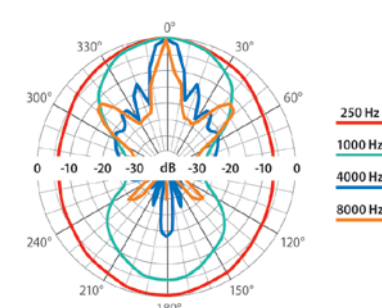
Frequency band:



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:

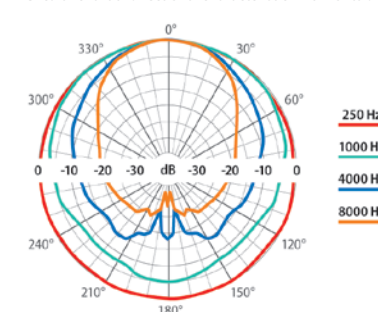


### ABT-LA 60

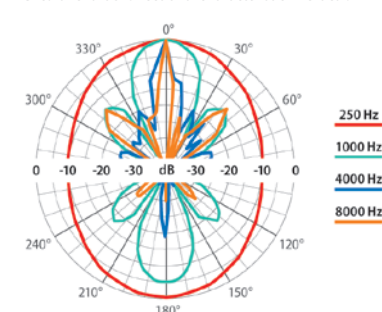
Frequency band:



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:



\* (calculated from line array far field measurement at 8m)

# ABT-W6/W6/AB

EN 54-24

## Wall-mounted Loudspeaker (single/AB)

- ✓ Full compliance with EN 60849 and EN 54-24 standards
- ✓ Certificate of Conformity issued by CNBOP: 1438-CPR-0413 and 1438-CPR-0415
- ✓ Compliance with BS5839-8 standard (Thermal Protection)
- ✓ Exceptionally easy and quick to mount
- ✓ Modern and elegant design
- ✓ High quality sound of both speech and music
- ✓ Ideal for on-wall or in-wall mounting



The ABT-W6 is an elegant multi-function loudspeaker designed to guarantee the highest acoustic parameters. Its solid casing offers an effective protection against acts of vandalism. The loudspeaker can be mounted either on a wall or on a ceiling. Additionally, the ABT-W6 can be fixed as an in-wall speaker and therefore it is an ideal solution for rooms where aesthetic factors play a significant role.

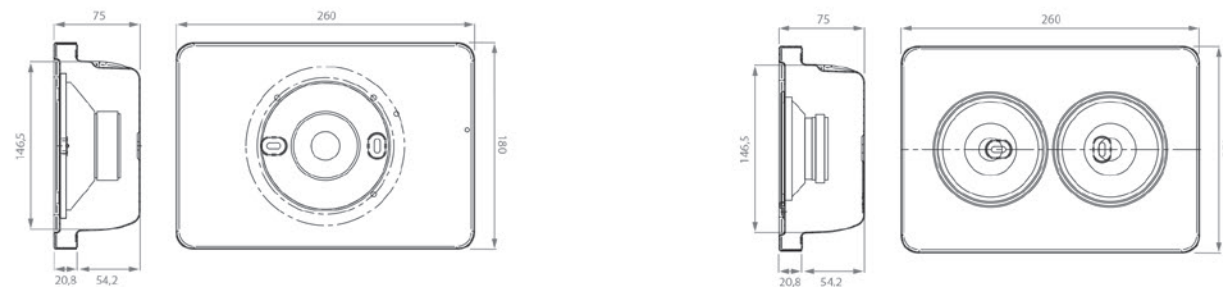
ABT-W6 can be also provided with an additional mounting lug to allow attaching a safety steel cable, which can be fastened on the other side with a steel pin secured to construction elements of adequate fire-resistance e.g. the ceiling. Such a solution enables mounting the loudspeaker to surfaces of zero fire-resistance rating.

The loudspeaker offers adjustable power regulation through connectivity to applicable transformer tapings thus allowing suitable acoustic pressure (the level of sound) within areas of sound emission adequately to the acoustic conditions existing in those areas.

Unlike the standard wall-mounted fire alarm loudspeakers, the ABT-W6/AB is equipped with two in-built electro-acoustic transducers, two transformers and two separate sets of ceramic clamps and fuses, which allow connectivity of two independent A/B loudspeaker lines.

ABT-W6/AB has been designed for application in rooms of such size and acoustic conditions that the design proposes one wall-mounted loudspeaker of VES standard. In case of

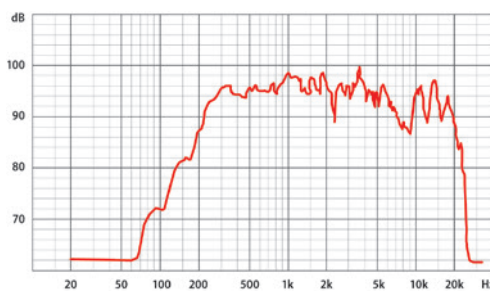
a single fault on the loudspeaker line, there is no loss of the sound coverage area in rooms with installed wall-mounted ABT-W6/AB loudspeakers; therefore it is still possible to use the VES recordings.



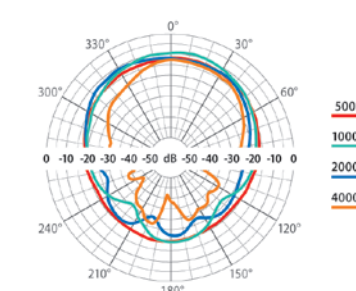
	ABT-W6	ABT-W6/AB
<b>Electrical</b>		
Rated power, W	6	2x 6
Tappings 100 V line, W	6/3/1,5/0,75	2x 6/3/1,5/0,75
Transformer impedance, Ω 100 V	1667/3333/6667/13333	2x 1667/3333/6667/13333
Driver impedance, Ω	8	2x 8
Effective frequency range, Hz	120–20 000	150–20 000
Sensitivity @ 4 m, 1 W, dB	80	84
SPL @ 4 m, Rated power, dB	87	91
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz–6 kHz	94	97
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz–6 kHz	101	104
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	180 / 180 / 163 / 80	180 / 165 / 53 / 30
<b>Environmental</b>		
Environmental type / IP Rating according to EN 54-24	A / IP21C	A / IP21C
IP Rating	32	32
Min / Max Amb Temp	-10°C / 55°C	-10°C / 55°C
<b>Mechanical</b>		
Dimensions, mm	260 x 180 x 80	260 x 180 x 80
Net Weight, kg	2,3	2,8
Colour	White (RAL 9003)	White (RAL 9003)
Material	Steel	Steel
Mounting	Screw	Screw
<b>Option</b>		
For DC line monitoring	Capacitor	Capacitor
Colour optional	RAL Palette	RAL Palette
<b>Ease Model</b>		
	✓	✓

## ABT-W6

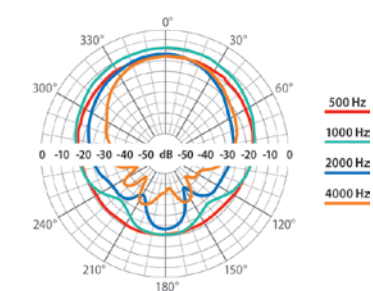
Frequency band:



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:

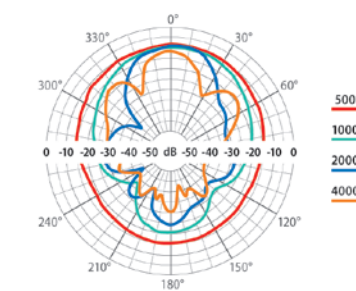


## ABT-W6/AB

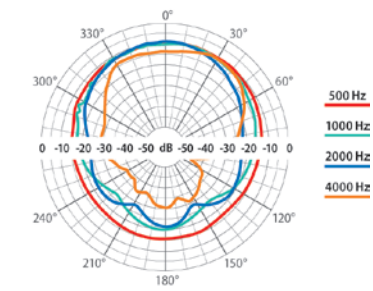
Frequency band:



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:





# MCR-SWSM6

## Wall-mounted Loudspeaker

- ✓ Full compliance with EN 54-24 Standards
- ✓ Certificate of Conformity issued by ITB: 1488-CPD-0168/W



Fire alarm MCR-S loudspeakers have been designed and manufactured for the most demanding customers as well as to meet the requirements of the most complex and sophisticated sound transmitting applications. Thanks to the use of advanced technologies they combine excellent acoustic parameters and high aesthetics with resistance to mechanical damages and varying weather conditions as well as low prices. Their additional quality is an exceptionally quick and simple installation.

Quality standards and audio characteristics have been confirmed through multiple tests and trials we have applied for many years, including e.g. our own echo-proof chamber, resistance and integrity testing equipment, as well as chambers for resistance to varying weather and air humidity testing.

The need to maintain the best acoustic parameters was the idea underlying the design process. MCR-SWSM6 Loudspeakers have been designed as surface or ceiling-mounted units for a wide area of applications. Thanks to their steel casings the loudspeakers are vandal-proof and more resistant to any mechanical damages.

Our loudspeakers are perfect on any circulation routes and in staircases located in shopping centres, offices, schools, hotels, hospitals, and industrial buildings. Moreover, loudspeakers of the kind are commonly used in underground car parks. In spite of its steel casing the loudspeaker mingles well with any interior and is virtually invisible thanks to its small dimensions and neat white finish.

Apart from high mechanical and functional resistance MCR-SWSM6 loudspeakers entirely comply with global requirements for evacuation systems, including also the British Standard No. BS5839 Part 8 and EN 54-24. They have been certified by ITB. Technical solutions applied in the design ensure continuous operations of sound-transmitting line connected with the loudspeaker even in the case the latter is damaged or burnt as a result of fire. The said protection is composed of temperature-proof ceramic blocks installed inside the loudspeaker, internal fireproof wiring, and temperature limit fuse.

Two sound-transmission cable penetrations in the casing are insulated by means of two rubber cable glands. Inside the fire zone the loudspeaker is isolated from the entire line, which ensures line continuity and uninterrupted broadcasting of fire escape messages. The individual power rating is selected by means of connection with applicable transformer branch.

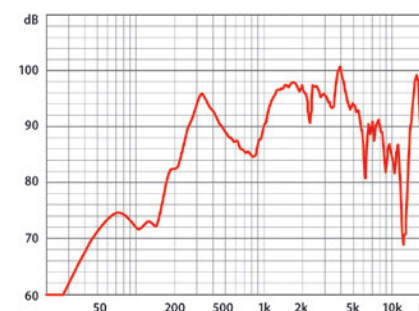
All the MCR-S loudspeakers are designed for continuous operations at rated parameters for at least 100 hours in compliance with the IEC-268-5 Standard. To be quite sure our loudspeakers comply with the highest quality standards we test them thoroughly following the most meticulous procedures that warrant excellent parameters of sound emission, safety, and reliability. They are also recommended for use in any and all public address systems.

- » **Exceptionally simple and quick installation**
- » **Advanced and functional finish of external visible cover which mingles with every interior**
- » **High sound quality of either musical or verbal messages**
- » **6 W transformer with multiple branches ensuring accurate selection of output power**
- » **External screen made of galvanised steel available in any colour according to the RAL Palette**

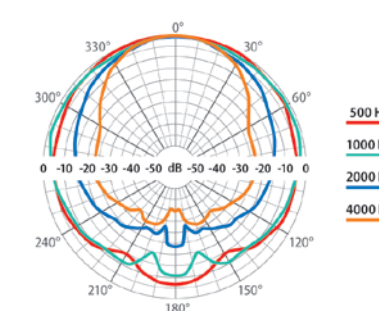


	MCR-SWSM6
<b>Electrical</b>	
Rated power, W	6
Tappings 100 V line, W	6 / 3 / 1,5 / 0,75
Transformer impedance, Ω 100V	1667 / 3333 / 6667 / 13333
Driver impedance, Ω	8
Effective frequency range, Hz	150 – 18000
Sensitivity @ 4m, 1 W, dB	77
SPL @ 4 m, Rated power, dB	86
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz – 6 kHz	93
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz – 6 kHz	101
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	360 / 170 / 120 / 70
<b>Environmental</b>	
Environmental type / IP Rating according to EN 54-24	B / IP33C
IP Rating	33
Min / Max Amb Temp	-25°C / 70°C
<b>Mechanical</b>	
Dimensions, mm	163,5 x 163,5 x 60
Net Weight, kg	2
Colour	White (RAL 9003)
Material	Steel
Mounting	Screw
<b>Option</b>	
For DC line monitoring	Capacitor
Colour optional	RAL Palette
<b>Ease Model</b>	
	✓

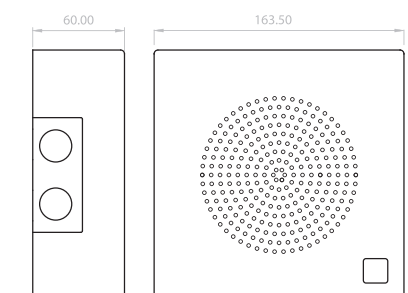
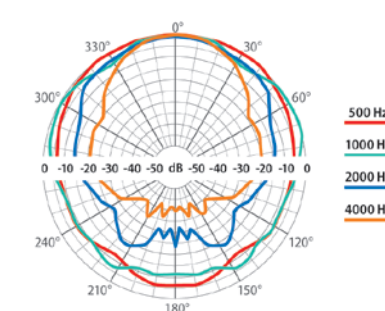
Frequency band:



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:





# MCR-SMSP20

## Sound Projectors

- ✓ Full compliance with EN 54-24 Standards
- ✓ Certificate of Conformity issued by ITB: 1488-CPD-0167/W



Fire alarm MCR-SMSP20 loudspeakers have been designed and manufactured for the most demanding customers as well as to meet the requirements of the most complex and sophisticated sound transmitting applications. Thanks to the contribution of advanced technologies they combine excellent acoustic parameters and high aesthetics with resistance to mechanical damages and varying weather conditions as well as low prices. Their additional quality is an exceptionally quick and simple installation.

Quality standards and audio characteristics have been confirmed through multiple tests and trials we have applied for many years, including e.g. our own echo-proof chamber, resistance and integrity testing equipment, as well as chambers for resistance to varying weather and air humidity testing. The need to maintain the best acoustic parameters was the idea underlying the design process.

MCR-SMSP20 series include loudspeaker models emitting the sound which features directional characteristic and high efficiency. 5-inch 2-cone wide band loudspeakers used in these series are excellent alternative solution for horn-type units due to wide frequency band. They prove excellent in both musical and verbal applications. Loudspeakers are enclosed in round casings made of polished extruded aluminium; they feature a high class of protection from humidity. Thanks to directional characteristic of sound propagation our loudspeakers are mostly applied on circulation routes and in wide area sound emission. Due to resistance to weather conditions the loudspeakers prove excellent in industrial halls, warehouses, as well as partly open spaces exposed to outdoor weather conditions.

Apart from high mechanical and functional resistance MCR-SMSP20 loudspeakers entirely comply with global requirements for systems, including also the British Standard No. BS5839 Part 8 and EN 54-24. They have been certified by ITB.

Technical solutions applied in the design ensure continuous operations of sound-transmitting line connected with the loudspeaker even in the case the latter is damaged or burnt as a result of fire. The said protection is composed of up to 650°C temperature-proof ceramic blocks installed inside the loudspeaker, internal fireproof wiring, and temperature limit fuse. Two sound-transmission cable penetrations in the casing are insulated by means of two rubber cable glands. Inside the fire zone the loudspeaker is isolated from the entire line, which ensures line continuity and uninterrupted broadcasting of fire escape messages. The individual power rating is selected by means of connection with applicable transformer branch.

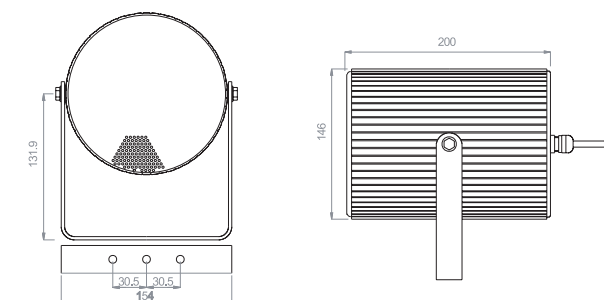
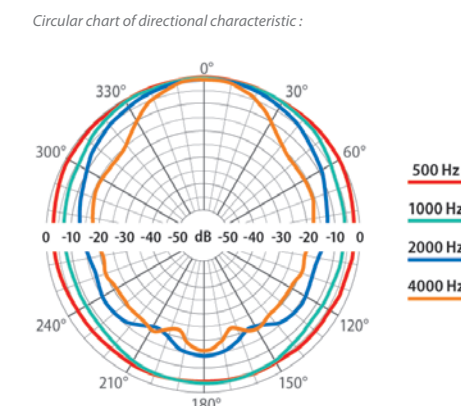
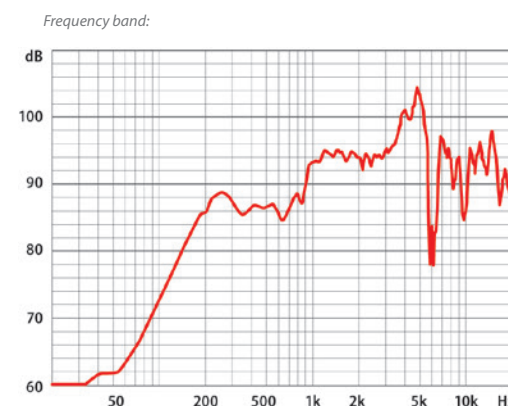
All the MCR-S loudspeakers are designed for continuous operations at rated parameters for at least 100 hours in compliance with the IEC-268-5 Standard.

To be quite sure our loudspeakers comply with the highest quality standards we test them thoroughly following the most meticulous procedures that warrant excellent parameters of sound emission, safety and reliability.

- » **Designed to achieve directional characteristic of sound emission**
- » **20 W transformer with multiple branches ensuring accurate selection of output power**
- » **Enclosed in an advance and functional cylindrical casing made of extruded aluminium, available in silver – optionally in any colour according to the RAL Palette**
- » **Ideal for either ceiling or wall installation**
- » **Two gland-insulated penetrations for external cabling**
- » **Fireproof casing with ceramic block and temperature limit fuse**
- » **Fireproof internal wiring**
- » **High sound quality in music and speech emission**



	MCR-SMSP20
<b>Electrical</b>	
Rated power, W	20
Tappings 100V line, W	20 / 10 / 5 / 2,5
Transformer impedance, Ω 100V	500 / 1000 / 2000 / 4000
Driver impedance, Ω	8
Effective frequency range, Hz	150 – 20000
Sensitivity @ 4 m, 1 W, dB	78
SPL @ 4 m, Rated power, dB	92
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz – 6 kHz	92
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz – 6 kHz	105
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	360 / 230 / 140 / 65
<b>Environmental</b>	
Environmental type / IP Rating according to EN 54-24	B / IP33C
IP Rating	66
Min / Max Amb Temp	-25°C / 70°C
<b>Mechanical</b>	
Dimensions, mm	Lenght 200, ø146
Net Weight, kg	2,5
Colour	Silver
Material	Aluminium
Mounting	Screw, U Type bracket
<b>Option</b>	
For DC line monitoring	Capacitor
Colour optional	RAL Palette
<b>Ease Model</b>	
	✓



# ABT-T1510/2215/2430

## Horn-type Loudspeakers

- ✓ Full compliance with EN 54-24 Standards
- ✓ Certificate of Conformity issued by ITB:  
ABT-T1510, ABT-T2215, ABT-T2430 –  
1488-CPD-0169/W



Horn-type fire alarm ABT-T loudspeakers are designed for either simple or most complex and sophisticated sound-transmitting applications. They combine excellent acoustic parameters and high aesthetics with resistance to mechanical damages and varying weather conditions as well as simple assembling and low price. Quality standards and audio characteristics have been confirmed through tests and trials employing echo-proof chamber, resistance and integrity testing equipment, as well as chambers for resistance to weather and air humidity testing.

The ABT-T series comprises highly efficient loudspeakers which produce sounds featuring directional characteristics and operate in any atmospheric conditions (A, B, C environmental type). Thanks to their balanced frequency band they guarantee high understanding of verbal communication. Furthermore, they can transmit musical background. Their casings are made of ABS UL94V0, a synthetic material featuring high resistance to mechanical damages and self-extinguishing properties. Loudspeakers are perfectly protected from dust and humidity (IP66). The assembling jig ensures adjusting the inclination for the optimum coverage of the area of communications.

ABT-T loudspeakers are applied on circulation routes and inside the rooms with high after-sound as well as in widespread outdoor area broadcasting. They are unparalleled on sport sites, at swimming pools, in expo and industrial halls, warehouses, open and

underground car parks, and in open areas such as e.g. stadiums, parks, etc.

ABT-T loudspeakers entirely comply with global requirements concerning evacuation systems, including the standards such as BS5839 Part 8 and EN 54-24. They have been certified for product compliance and acceptance by ITB. Ceramic blocks, internal flame-resistant wiring, and temperature limit fuses protect the broadcasting line from short-circuits or breaks and ensure continuous operations even in case of fire-produced damages or burns. The loudspeaker located in the zone of fire is isolated from the sound-transmitting line. A special design eliminates the risk of fall of any of its burnt components, which ensures safe fire escape process. This feature has been confirmed by means of the most rigorous testing under the temperature of 822°C + ambient temperature.

Our ABT-T loudspeaker offer comprises three power rating models, i.e. 10 W, 15 W, and 30 W. The individual rated power is selected by means of connection with applicable transformer branch. All the ABT-T loudspeakers are designed so as to ensure continuous operations at rated parameters for at least 100 hours (consistent with IEC-268-5 Standard).

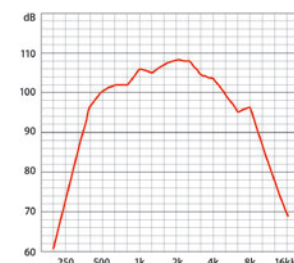
In spite of the fact our loudspeakers are designed for the highest reliability under fire conditions, they can be also used in any and all public address systems.

- » **Directional characteristic of sound emission and the highest verbal communication understanding**
- » **High efficiency:**  
ABT-T1510 – 106dB/1W  
ABT-T2215 – 108dB/1W  
ABT-T2430 – 110dB/1W
- » **All the working environments – A, B and C**
- » **wall and ceiling installation**
- » **Protection from dust and humidity: IP66 rating**
- » **two cable penetrations insulated by means of impedance coils**
- » **Casing made of self-extinguishing ABS UL94V0 plastic, with steel assembling jig**
- » **Test at the temperature of 822°C + ambient temperature**
- » **100% line protection from short-circuit and break in fire conditions**

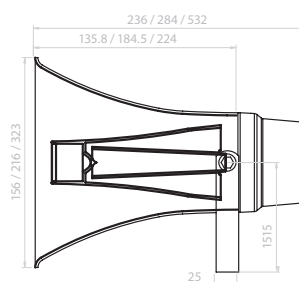
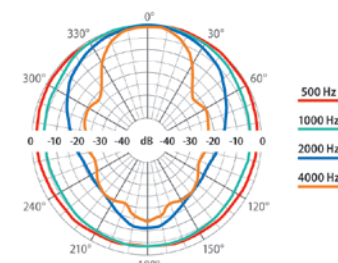
	ABT-T1510	ABT-T2215	ABT-T2430
<b>Electrical</b>			
Rated power, W	10	15	30
Tappings 100 V line, W	10 / 5 / 2,5 / 1,25	15 / 7,5 / 3,75 / 1,87	30 / 15 / 7,5 / 3,75
Transformer impedance, Ω 100V	1000 / 2000 / 4000 / 8000	667 / 1330 / 2770 / 5330	333 / 666 / 1330 / 2660
Driver impedance, Ω	8	8	8
Effective frequency range, Hz	340 – 9000	460 – 9000	400 – 7500
Sensitivity @ 4 m, 1 W, dB	86	87	88
SPL @ 4 m, Rated power, dB	104	108	113
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz – 6 kHz	103	104	105
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz – 6 kHz	113	116	120
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	240 / 200 / 88 / 45	180 / 121 / 68 / 36	180 / 120 / 75 / 41
<b>Environmental</b>			
Environmental type / IP Rating according to EN 54-24	B / IP33C	B / IP33C	B / IP33C
IP Rating	66	66	66
Min / Max Amb Temp	-25°C / 70°C	-25°C / 70°C	-25°C / 70°C
<b>Mechanical</b>			
Dimensions, mm	Lenght 236, ø156	Lenght 284, ø216	Lenght 325, ø233
Net Weight, kg	1,57	1,74	2,11
Colour	Light Grey (RAL 7035)	Light Grey (RAL 7035)	Light Grey (RAL 7035)
Material	ABS UL94V0	ABS UL94V0	ABS UL94V0
Mounting	Screw, U Type Bracket	Screw, U Type Bracket	Screw, U Type Bracket
<b>Option</b>			
For DC line monitoring	Capacitor	Capacitor	Capacitor
Colour optional	RAL Palette	RAL Palette	RAL Palette
<b>Ease Model</b>			
		✓	

### ABT-T1510

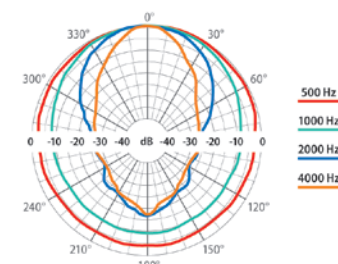
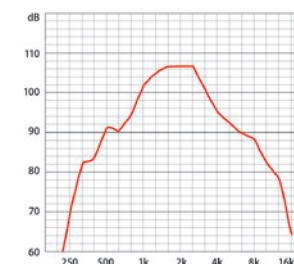
Frequency band:



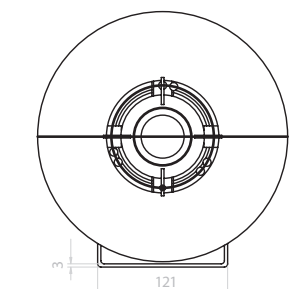
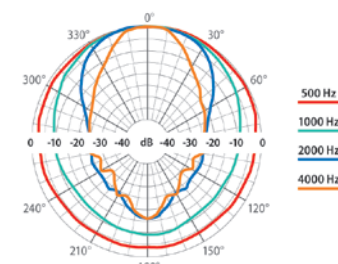
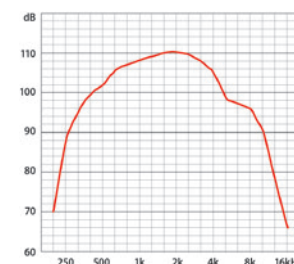
Circular chart of directional characteristic:



### ABT-T2215



### ABT-T2430

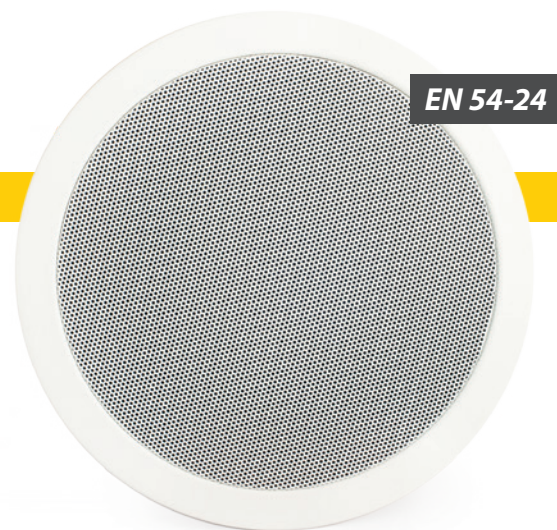




# ABT-S276/AB

## Ceiling-mounted AB Loudspeaker

- ✓ Full compliance with EN 60849 and EN 54-24
- ✓ Certificate of Conformity issued by CNBOP: 1438-CPR-0414
- ✓ Full compliance with BS5839-8 standard (Thermal Protection)
- ✓ 6-watt transformer enabling precise handling of loudspeaker power
- ✓ Optimised level of speech intelligibility
- ✓ Operation of two A/B loudspeaker lines



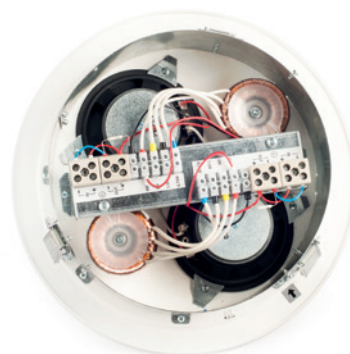
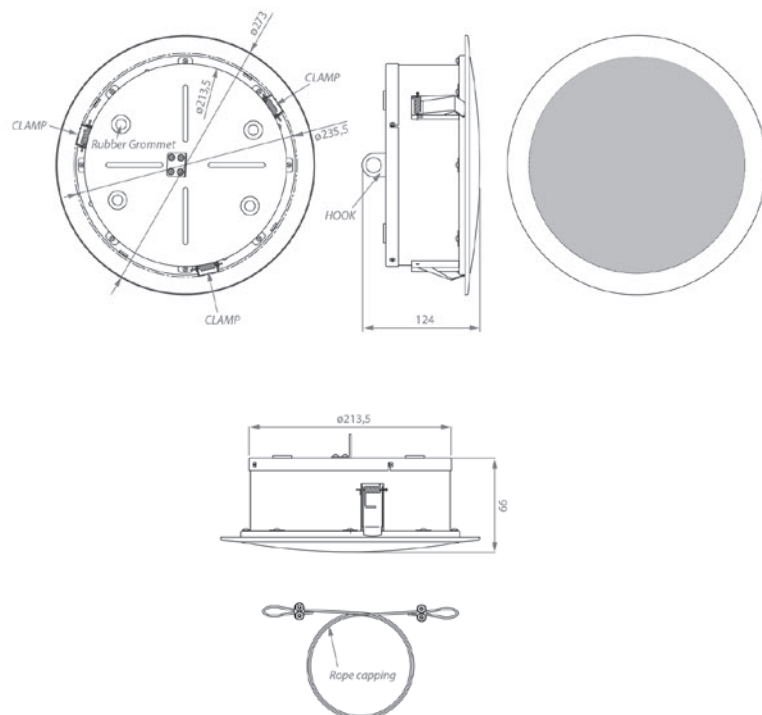
The ceiling-mounted ABT-S276/AB loudspeaker has been designed to guarantee the highest acoustic quality of speech and sound recordings even in difficult conditions. It is meant to be mounted on ceilings (incl. suspended ones).

Unlike the standard ceiling-mounted fire alarm loudspeakers, the ABT-S276/AB is equipped with two in-built electro-acoustic transducers, two transformers and two separate sets of ceramic clamps and fuses, which allows connectivity of two independent

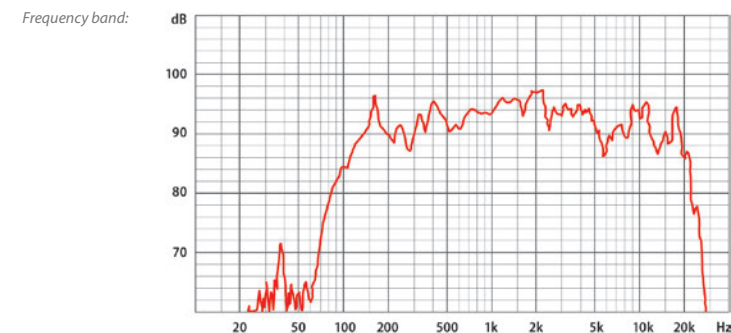
A/B loudspeaker lines. ABT-S276/AB has been designed for application in rooms of such size and acoustic conditions that the design proposes one ceiling-mounted loudspeaker of VES standard. In case of a single fault on the loudspeaker line, there is no loss of the sound coverage area in rooms with installed ceiling-mounted ABT-S276/AB loudspeakers; therefore it is still possible to use the VES recordings.

ABT-S276/AB is equipped with an additional mounting lug allowing attachment

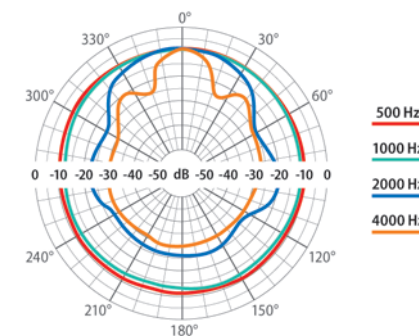
of a safety steel cable fastened on the other side with a steel pin secured to construction elements of adequate fire-resistance e.g. the ceiling. Such a solution enables mounting the loudspeaker to surfaces of zero fire-resistance rating. The loudspeaker offers adjustable power regulation through connectivity to applicable transformer tapings thus enabling application of suitable acoustic pressure (the level of sound) within areas of sound emission adequately to the character and acoustic conditions existing in those areas.



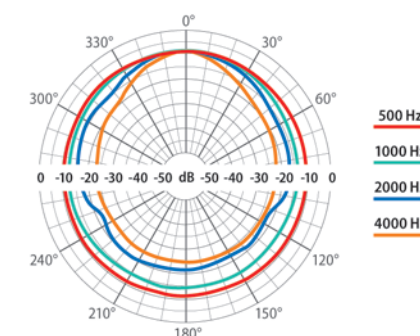
ABT-S276/AB	
<b>Electrical</b>	
Number of transducers	2
Rated power, W	2x 6
Tappings 100 V line, W	2x 6 / 3 / 1,5 / 0,75
Transformer impedance, Ω 100V	2x 1667 / 3333 / 6666 / 13333
Driver impedance, Ω	8
Effective frequency range, Hz	100 – 20000
Sensitivity @ 4 m, 1 W, dB	85
SPL @ 4 m, Rated power, dB	91
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz – 6 kHz	94
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz – 6 kHz	101
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	180 / 175 / 162,5 / 90
<b>Environmental</b>	
Environmental type / IP Rating according to EN 54-24	A / IP21C
IP Rating	32
Min / Max Amb Temp	-10°C / 55°C
<b>Mechanical</b>	
Dimensions, mm	Height 124 mm, ø273
Net Weight, kg	2,5 kg
Colour	White (RAL 9003)
Material	Steel
Mounting	Spring clamp
<b>Option</b>	
For DC line monitoring	Capacitor
Colour optional	RAL Palette
<b>Ease Model</b>	
	✓



Circular chart of directional characteristic – horizontal:



Circular chart of directional characteristic – vertical:

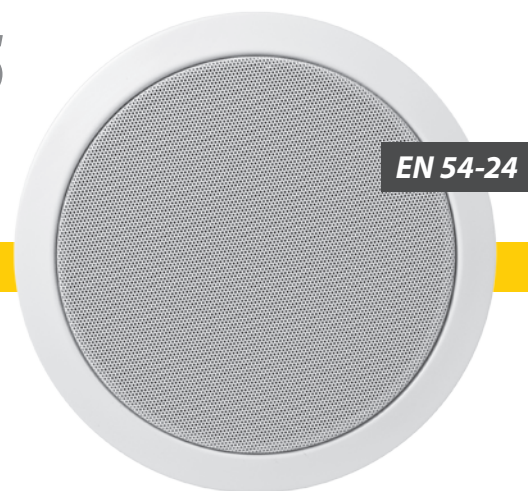




# ABT-S106/S136/S206 ABT-S2010/S2710

## Ceiling-mounted Prompt Installation Loudspeakers

- ✓ Full compliance with EN 54-24 Standards
- ✓ Certificate of Conformity issued by ITB:  
for ABT-S106/S136: 1488-CPD-0171/W  
for ABT-S2010/S2710: 1488-CPD-0170/W



Ceiling-mounted fire alarm loudspeakers ABT-S106 and ABT-S136 are designed for applications which require the minimum size at the maximum sound quality. Their parameters have been carefully selected to match the operating requirements in the rooms exposed to after-sound and high-humidity.

Ceiling mounted fire alarm ABT-S2010 and ABT-S2710 loudspeakers are designed for operations at high acoustic levels and the highest reduction in power supply. Actual wide band high efficiency ensures the best understanding of verbal messages. Their parameters have been carefully selected to comply with false ceiling applications, both at standard and considerably elevated ceiling-to-floor distance.

Thanks to the most advanced technologies the ABT-S series loudspeakers combine excellent acoustic parameters and high aesthetics with resistance to mechanical damages and varying weather conditions. They are distinguished by easy and quick installation.

Quality standards and audio characteristics have been confirmed through multiple tests and trials employing such facilities as e.g. echoproof chamber, resistance and integrity testing equipment, as well as chambers for resistance to weather and air humidity testing.

The need to maintain the best acoustic parameters, even with easily installed fire-protecting screens, was the idea underlying

the design process. The ABT-S series loudspeakers ensure a balanced sound which is extremely important in emission of highly understandable speech and reliable music reproduction.

The series of ceiling-mounted ABT-S loudspeakers is noticeable thanks to its elegant looks. The loudspeaker part which becomes visible after the installation is protected by means of electroplating and covered by a common and aesthetic white paint coat (RAL 9003) – optionally available other colours (RAL palette).

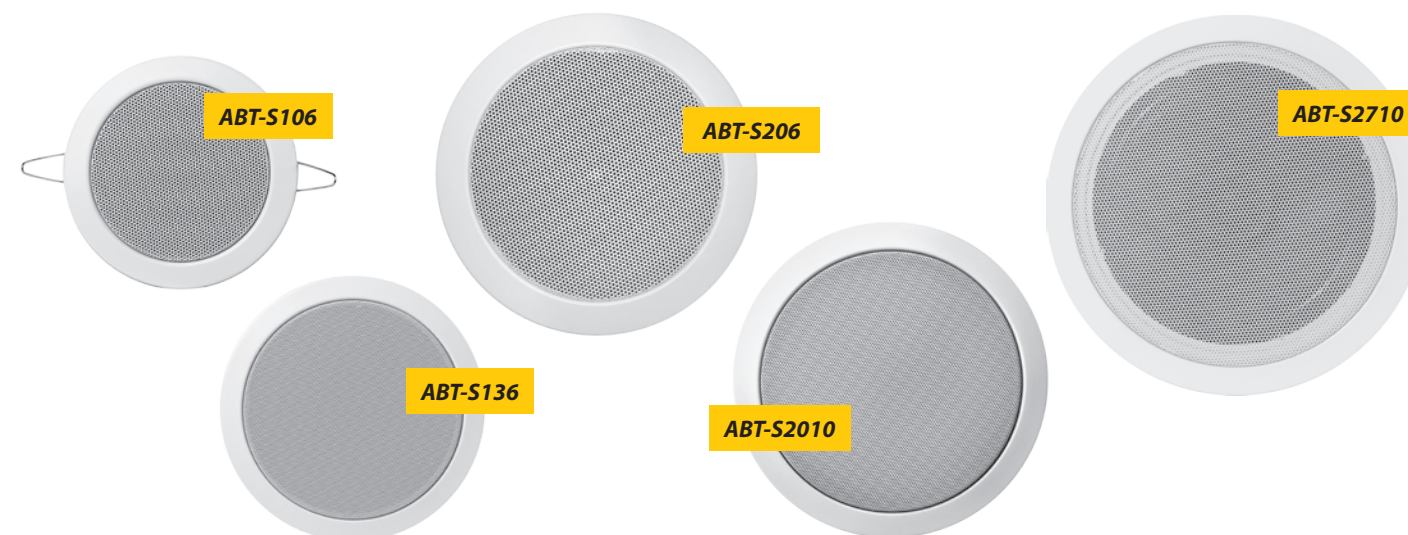
The entire ABT-S series is equipped with a standardized fire dome made of soft steel and supplied with two cable penetrations with rubber glands. Special jig for sling assembling facilitates quick installation. The delivery comprises the 1-metre long sling. Two ceramic blocks and fireproof wiring coupled with temperature limit fuse are located under the screen. This solution ensures 100% protection of the sound-transmitting line from any break or short-circuits which may be produced as a result of loudspeaker burn.

The ABT-S loudspeakers have been successfully tested by means of the most rigorous trials at the temperature of 822°C. The individual power rating is selected by means of connection with applicable transformer branch.

ABT-S series loudspeakers equipped with fire dome and thermal protections entirely comply with EN 54-24 Standards. In order to

ensure 100% consistency with the highest quality standards we test our loudspeakers following the most meticulous procedures that warrant high parameters of sound emission, safety, and reliability.

In spite of the fact our loudspeakers are designed for the highest reliability under fire conditions, their acoustic parameters and attractive low prices make them successful in any and all public address systems.



### ABT-S106/S136

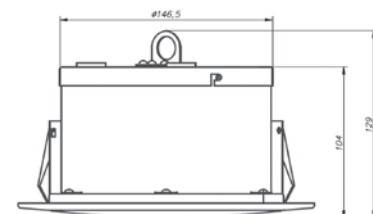
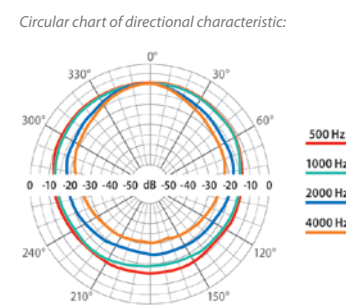
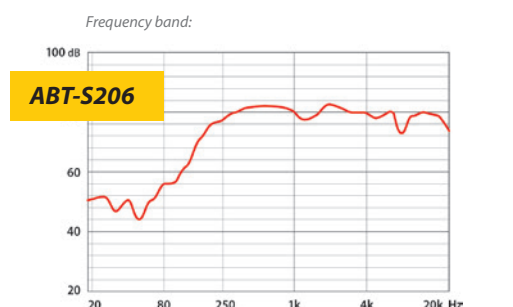
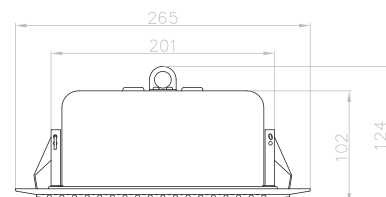
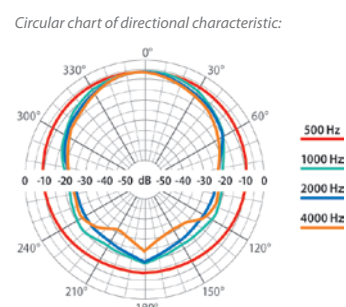
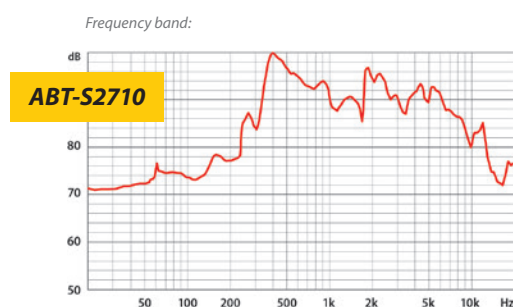
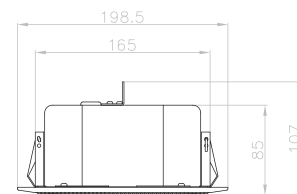
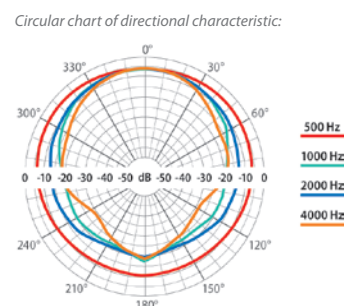
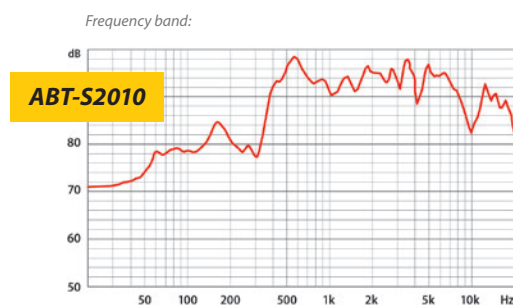
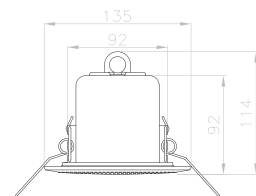
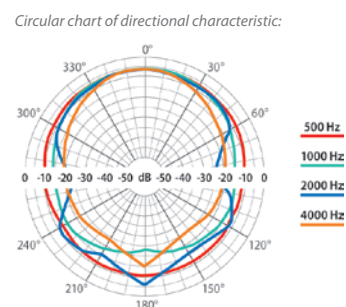
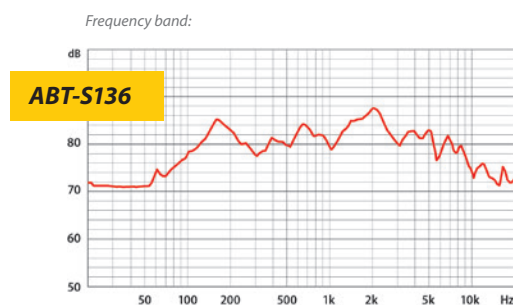
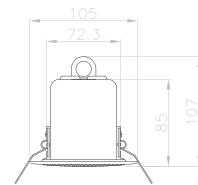
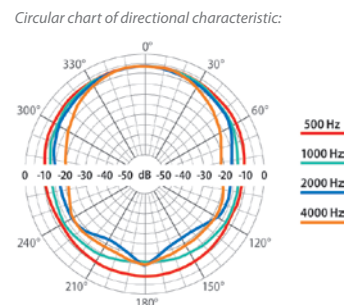
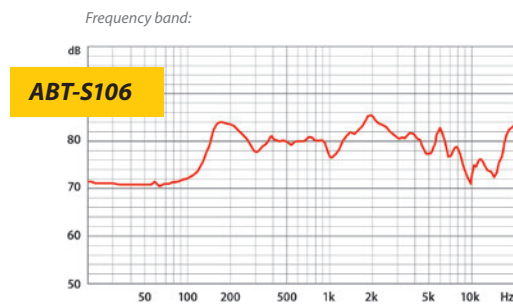
- » **Minimum dimensions**
- » **A and C working environment, ideal for bathrooms**
- » **Exceptionally reliable reproduction of full band music**
- » **The highest level of verbal communication understanding**
- » **Elegant looks**
- » **6 W transformer allowing a precise selection of loudspeaker output power**
- » **100% protection of line from breaks and short-circuits at the temperature of 822°C**

### ABT-S206/S2010/S2710

- » **High efficiency**
- » **High acoustic pressure level**
- » **Exceptionally reliable full band music reproduction**
- » **The highest level of speech understanding**
- » **Elegant looks**
- » **10 W transformer allowing precise selection of loudspeaker output power**
- » **100% protection of line from breaks and short-circuits at the temperature of 822°C**

	ABT-S106	ABT-S136	ABT-S206	ABT-S2010	ABT-S2710
Electrical					
Rated power, W	6	6	6	10	10
Tappings 100 V line, W	6/3/1,5/0,75	6/3/1,5/0,75	6/3/1,5/0,75	10/5/2,5/1,25	10/5/2,5/1,25
Transformer impedance, Ω 100 V	1667/3333/6667/13333	1667/3333/6667/13333	1667/3333/6666/13333	1000/2000/4000/8000	1000/2000/4000/8000
Driver impedance, Ω	8	8	8	8	8
Effective frequency range, Hz	100–20000	60–20000	82–20000	150–20000	100–20000
Sensitivity @ 4 m, 1 W, dB	65	68	79	77	78
SPL @ 4 m, Rated power, dB	76	78	87	92	93
SPL @ 1 m, 1 W, dB, Test signal bandwidth 300 Hz–6 kHz	80	82	91	94	95
SPL @ 1 m, Rated power, dB, Test signal bandwidth 300 Hz–6 kHz	88	90	99	104	105
Dispersion at 500 Hz / 1 kHz / 2 kHz / 4 kHz, [°]	180 / 153 / 131 / 80	180 / 131 / 124 / 76	180 / 180 / 160 / 85	180 / 109 / 153 / 80	180 / 98 / 80 / 69
Environmental					
Environmental type / IP Rating according to EN 54-24	A, C / IP21C	A, C / IP21C	A	A / IP21C	A / IP21C
IP Rating	32	32	32	32	32
Min/ Max Amb Temp	-10°C / 55°C	-10°C / 55°C	-10°C / 55°C	-10°C / 55°C	-10°C / 55°C
Mechanical					
Dimensions, mm	Height 108, ø 104	Height 116, ø 135	Height 130, ø 204	Height 110, ø 200	Height 120, ø 267
Net Weight, kg	0,8	0,9	1,5	1,5	1,8
Colour	White (RAL 9003)				
Material	Steel				
Mounting	Spring clamp				
Cut-out, mm	ø 85	ø 115	ø 170	ø 170	ø 227
Option					
For DC line monitoring	Capacitor				
Colour optional	RAL Palette				
Ease Model	✓		✓		





# ABT-TNL100

## Highly Directional Tunnel Loudspeaker

- ✓ Full compliance with EN 54-24 Standards
- ✓ Specially designed for tunnel applications
- ✓ Highly directional asymmetric horn
- ✓ Excellent speech intelligibility
- ✓ Stainless steel construction
- ✓ Waterproof housing IP66
- ✓ High power output 100 / 50 W

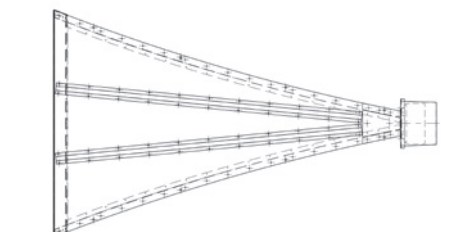
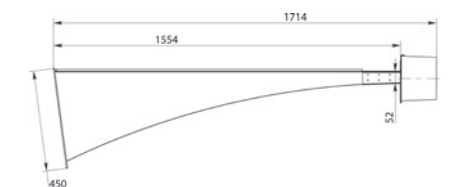
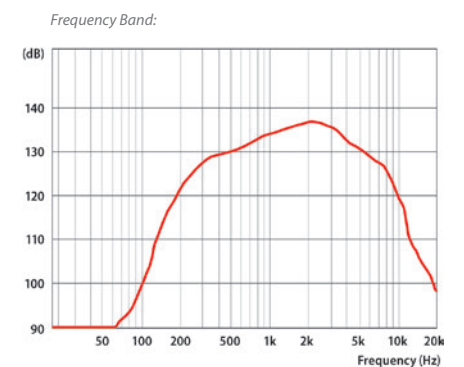


In case of an emergency, the Voice Evacuation System needs to guide people in the tunnel to safety so the audio transmission should be as clear as possible. In general, due to high levels of reverberation and noise, a tunnel is not an ideal environment for Voice Evacuation System and therefore speech intelligibility becomes a critical parameter for any voice alarm application. To establish

a sufficient level of speech intelligibility, a highly directional speakers system is required. By reducing the energy emitted to other surfaces, reflective sound energy can be minimized which results in a better direct to reverberant ratio. This will improve the maximum feasible speech intelligibility. To minimize disturbing echo effects, resulting in a loss of speech intelligibility, each horn

speaker is driven by an individual signal channel in a 100 V installation, which is equipped with audio DSP including EQ and delay. Our product S4T (Safety For Tunnel) offers the most effective solution which seamlessly combines a dedicated Voice Evacuation System with tailored Tunnel Loudspeakers.

	ABT-TNL100
<b>Electrical</b>	
Rated power, W	100
Tappings 100 V line, W	100 / 50
Transformer impedance, Ω 100 V	100 / 200
Driver impedance, Ω	6
Effective frequency range, Hz	250-8000
Sensitivity @ 4 m, 1 W, dB	105
SPL @ 4 m, Rated power, dB	125
SPL @ 1 m, 1 W, dB	117
SPL @ 1 m, Rated power, dB	137
Dispersion, horizontal x vertical, [°]	25 x 35
<b>Environmental</b>	
Environmental type	B
IP Rating	IP66
Min / Max Amb Temp	-25°C / 70°C
<b>Mechanical</b>	
Dimensions, mm	1770 x 1020 x 455
Net Weight, kg	28
Colour	Grey (RAL 7035)
Material	Stainless steel
Mounting	Anchor for concrete
<b>Option</b>	
For DC line monitoring	Capacitor
Colour optional	RAL Palette



# ABT-HP240

EN 54-24

High Power Loudspeaker

- ✓ Full compliance with EN 54-24 Standards
- ✓ 240 W transformer 100 V
- ✓ Highest level of speech intelligibility
- ✓ Waterproof housing IP65
- ✓ Wide frequency range suitable for the music transmission



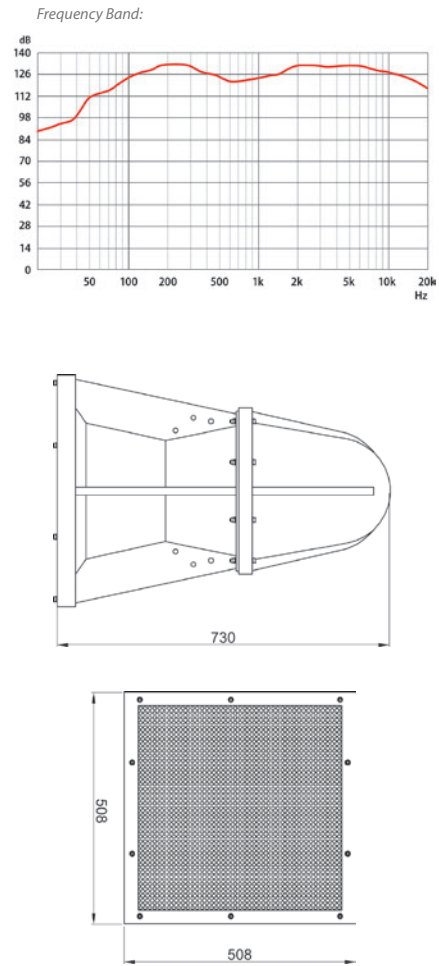
ABT-HP240 is a powerful loudspeaker designed to amplify large objects. It is two-way loudspeaker equipped with electroacoustic transducers 12" and 1,75". This speaker set has a wide effective frequency band, which is perfect for the transmission of verbal and musical communication.

Universal mounting method allows to mount the speakers in a simple manner. Waterproof housing makes that it can be successfully used outdoors (stadiums, halls, etc.).

ABT-HP240 is equipped with the necessary instrumentation required to connect it to

the voice evacuation system. Between the ceramic block and speaker transformer there is installed thermal fuse isolating transformer from a loudspeaker line.

	ABT-HP240
<b>Electrical</b>	
Number of transducers	2
Rated power, W	350
Tappings, W	240 / 120 / 60
Transformer impedance @100 V, Ω	42 / 84 / 167
Driver impedance, Ω	8
Effective frequency range, Hz	65 – 20 000
Sensitivity, dB	95
SPL @ 1 m, max power, dB	125
Dispersion, horizontal x vertical, [°]	90x40 / 90x60 / 60x60
<b>Environmental</b>	
Environmental type	B
IP Rating	IP65
Min / Max Amb Temp	-25°C / 70°C
<b>Mechanical</b>	
Dimensions, mm	500 x 500 x 735
Net Weight, kg	35
Colour	Black (RAL 9005)
Material	Glass fiber
Mounting	V-bracket
<b>Option</b>	
Colour optional	RAL Palette
<b>Ease Model</b>	
	✓







*We make everyday life safer*

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

v. 1.0