

**MONACOR**

2019

**Commercial Audio Solutions**

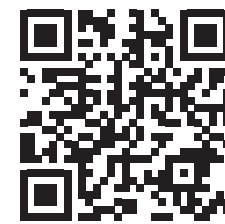


# PROFESSIONAL AUDIO OVER IP SOLUTIONS

**MADE IN GERMANY**  
by MONACOR 

## MONACOR-DT, shaping up for the future ...

Thanks to the new DT series, Audio over IP solutions with Dante® interfaces can now conveniently be implemented at a very attractive price. Taking centre stage is the new speaker **WALL-05DT**.



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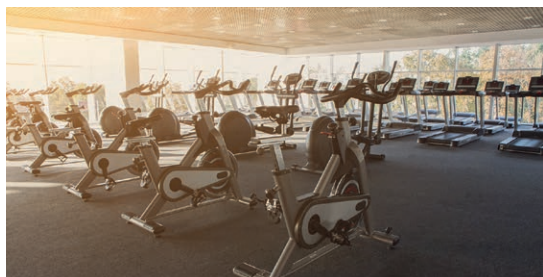
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## Know-how on 100 V PA Technology

Pleasant background music in restaurants, unobtrusive advertising in supermarkets or a clearly understandable presentation at conferences and conventions; comprehensive professional PA technology can be used for various applications in the public and commercial sector. The great variety of PA systems also requires a wide range of products. As specific as the requirements are, our extensive product range will certainly provide you with the right solution for your project.

This solutions brochure will show you various PA applications and gives useful information and advice in order to facilitate your decision, depending on the range of application. With numerous illustrative examples of application, the MONACOR product portfolio offers practicable solutions for versatile applications. The scenarios in this brochure can certainly provide you with further ideas and practice-oriented information for your own application. In any case, you will find out how complex this topic is which is influenced by numerous factors and requires comprehensive planning.

No matter whether buildings, sports facilities or wide open spaces, very special requirements are made on PA systems used for the reproduction of speech and music. This is the perfect application for 100 V PA technology.

With professional 100 V technology, the audio signal is transformed up and down again at the speaker. Thus, it is possible to achieve a consistent and continuous sound radiation without the risk of performance loss when transmitting signals over greater distances, for example. Other advantages: the small cable cross section reduces cabling effort, facilitates installation and also spares your budget.

PA audio installations normally supply a mono signal (mono = sum L+R). In contrast to a hi-fi stereo system as we know from applications at home, the PA technology is mainly directed towards an audience which moves freely in a room and ought to hear the complete information at any position. However, stereo reception would be the first choice for an audience which is always at an equal distance to the speakers, e.g. when sitting on the sofa at home.

A permanently installed PA system for the consistent radiation of background music, announcements or for emergency announcements is suitable for most versatile applications:

- Supermarkets, department stores and shops
- Hotels and restaurants
- Sports fields and gyms
- Schools, universities and other educational institutions
- Office buildings, industrial buildings and warehouses
- Churches, chapels and mosques
- Cultural facilities, including museums or art galleries

In case, you are planning a more complex PA system with speaker distribution in several rooms, this can quickly result in long cable paths. Lengths of 100 m and more are quite common between audio source and speakers. Additionally, you may also want to adjust the volume individually for each room and have the facility to switch off the background music or disable announcements in certain rooms. For the specific application in a doctor's practice, this would mean that ...

... pleasant and unobtrusive background music should be played in the hallway and waiting area,

... a CD or MP3 file should be played in the treatment rooms and

... announcements from the reception should be heard in the hallway, the waiting area and the treatment rooms. The volume of the currently playing music will be lowered and priority is given to the announcement.

This example shows: all areas in the 4-zone solution can individually be supplied with high-quality music. An absolutely user-friendly operation, a top-quality sound and excellent speech intelligibility turn this audio solution into a high-performance PA system. This is only one of many examples. We have prepared a few more on the following pages.



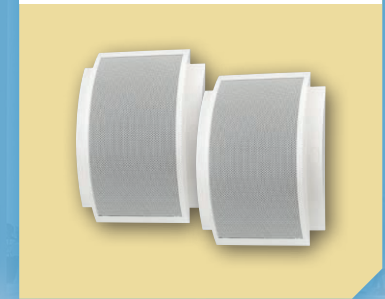
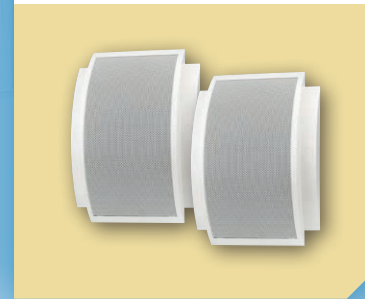
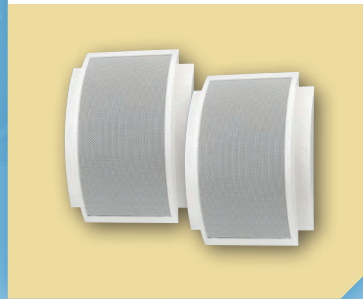
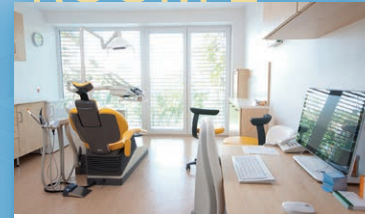
HALL

WAITING ROOM

ROOM 1

ROOM 2

ROOM 3



1 2 3 4



MIXING AMPLIFIER



SOURCE

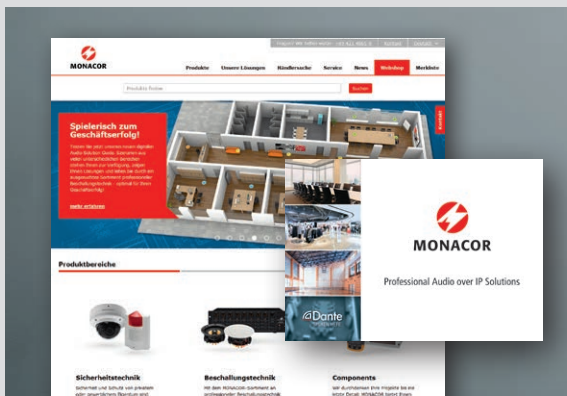
## The services offered by MONACOR: your advantage for a successful project

You can take our word for it: as your point of contact, we are available for your questions and support - your call will not be forwarded to anonymous call centres, you will reach someone you know. We understand your request, may even know each other for some time now. In any case, we will help you with all of our experience and expert advice. You will benefit from our special service which includes personal contact, a fast response and reliable solutions. As our partner, you will also benefit from additional advantages:



### **3-year warranty is our promise of quality**

Our customers deserve highest reliability. In order to ensure this, we give a three-year warranty which also applies to all of our own-brand products. Extensive examination of the products and our detailed instruction manuals result in high standards and a high quality.



## Brand advertising for your success

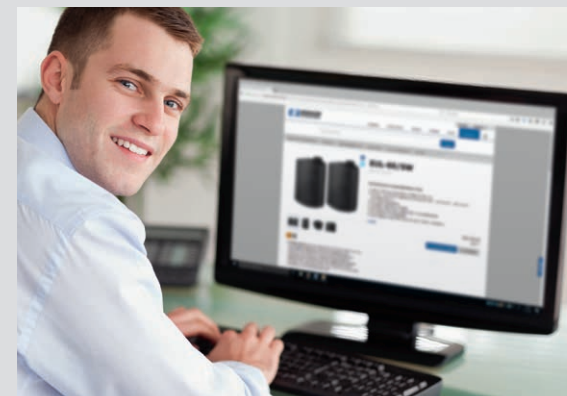
With targeted PR and marketing activities, we will strengthen user confidence in PA technology from the brand MONACOR. Thus, for example, product tests are thoroughly prepared and campaigns for online advertising or specialised magazines are precisely planned and implemented. And we will always have an open ear for your advertising campaigns and provide support during implementation.



## Everything at a glance

On more than 150 pages, we will show you our versatile range of PA products. Professional sound systems for fixed installations with an impressive selection of wall speakers, ceiling speakers and flush-mount speakers, voice alarm systems with EN 54 certification or mobile amplifier systems - this catalogue from MONACOR offers a comprehensive range of products to fully meet your requirements.

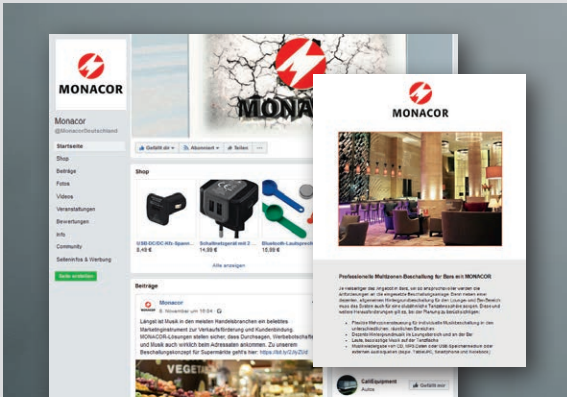
Come and have a look at [www.monacor.com](http://www.monacor.com) and order your very own copy of the catalogue.



## Our webshop - order quickly and easily online

Use this 24/7 service to search, find and order our latest technology - there are no limited opening hours. Set up your own customer account and take advantage from a highly convenient operation. You can take your time and have the opportunity to establish your requirements. You can easily identify availability, outstanding orders or arrears.





### Always keeping you informed

With our regular newsletter, you will never again miss any news on PA technology from MONACOR. New products, useful practical tips and the latest news in the field - directly sent to you via e-mail.

Interesting articles, innovations as well as information on current events can also be found on our social media channels. Short, precise and exactly to the point - our video clips show you the most important product advantages and answer frequently asked questions regarding our product range.



### Rely on our ability to deliver and benefit from a head start ...

Our storage area of 9,800 m<sup>2</sup> and a quick response to customer enquiries both ensure a high ability to deliver. If you place your order for delivery within Germany, the goods will be delivered to you within 48 hours. The only thing even faster is our 24-hour Express Service for deliveries within Germany. You can choose the delivery date at your convenience.



### Our quality requirements ensure highest operating reliability and a long service life

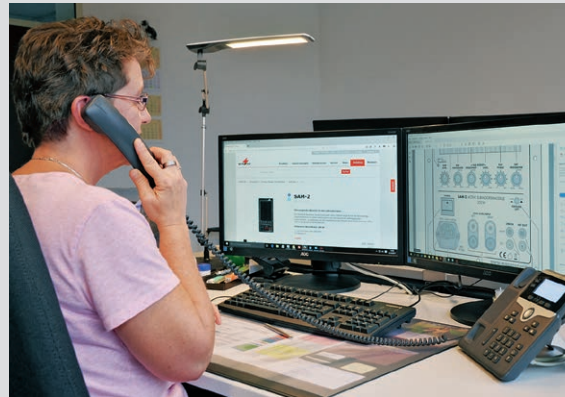
When it comes to quality, we leave nothing to chance and rely on our own strengths. Our proactive quality policy ensures most reliable products. Accredited test laboratories assist us with extensive and documented quality assurance tests. Thus, you will benefit from high quality standards - for all of our products.



### **Our product managers keep an open eye on the market and on future trends**

Technology develops at a speed which can surely be described as breathtaking. Our product experts travel worldwide to uncover the latest trends and developments in order to offer you the latest in technology. That provides you with a solid foundation for trendsetting systems which feature a reliable operation you can surely benefit from.

The product management at MONACOR: market-oriented, innovative and inspirational.



### **Reliable, quick and without red tape - processing your order and dispatch**

Customer comments confirm that they value our strong performance with regard to ability to deliver and processing of the orders which is a solid foundation for a good business relationship with us. Another advantage: our ability to deliver allows you to choose an exact delivery date.



### **Always available to assist**

The technical customer service department with highly qualified staff is an inherent part of our service provided. Your advantage: consistent points of contact, a spare parts store offering almost any part required and our technical archive. Thus, fastest response and processing times are guaranteed which are fundamentally important to us.









# Solutions for the Retail Trade

# Supermarket

Flush-mount speakers  
1,500-1,900 m<sup>2</sup>

## Customer requirements:

- PA application with quiet and pleasant background music
- Microphone announcements with excellent speech intelligibility
- Four separate PA zones for individual voice transmissions and music reproductions
- Media streaming via LAN and WLAN
- Reproduction of (Internet) radio or MP3 files

## Solutions

The PA ceiling speakers EDL-10TW/WS provide a high-quality sound with a consistent radiation and are therefore perfectly suitable for the reproduction of music and speech in supermarkets. The 4-zone mono mixing amplifier PA-40120 allows you to set up a multi-zone system for an independent PA application in the sales area, storage area and sanitary facilities. For music reproductions, the audio player WAP-200 features an integrated FM and DAB+ tuner as well as an integrated Internet radio. The microphone stations in the back office and in the checkout area allow for staff to easily make quick announcements to individual zones or all zones.

## Products for this scenario

38 x

**EDL-10TW/WS**

Order No. 16.3380

PA ceiling speaker with integrated tweeter



1 x

**PA-40120**

Order No. 17.3220

4-zone mono mixing amplifier with 4 active 120 W outputs



1 x

**WAP-200**

Order No. 38.7030

Internet radio, FM RDS and DAB+ tuner, MP3 player



6 x

**PA-4000RC**

Order No. 23.6010

PA zone paging desktop microphone



# Supermarket

Flush-mount speakers  
1,500-1,900 m<sup>2</sup>



-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.





## DIY Store

### Flush-mount speakers and surface-mount speakers 1,600 - 1,900 m<sup>2</sup>

#### Customer requirements:

- Comprehensive PA application of highest speech intelligibility for the sales area including outdoor area and staff rooms
- Timed reproduction of announcements or advertising messages
- Microphone stations for the customer service desk, the back office or the checkout area
- Announcement facility via telephone system with A/B interface (PBX)
- PA application to be selected for 6 zones (indoors, outdoors, staff rooms, etc.)
- Robust and weatherproof speakers for open areas outdoors

#### Solution

The modern ball speakers EDL-420/WS also master most challenging acoustic conditions and are the top choice when it comes to speech reproductions in large rooms with high ceilings. The full range speaker of high power capability provides highest speech intelligibility and a consistent radiation across the entire sales area. The extra robust and weatherproof sound projectors EDL-110/WS are used for the outdoor area. The flush-mount speakers EDL-68/WS are applied in sanitary facilities and changing rooms, thus ensuring a PA application across the entire area. The wall speakers ESP-70/WS which have been installed in the warehouse ensure high intelligibility of announcements. The mono mixing amplifier PA-6600 of high efficiency is a real multi-talent and can be used for most versatile applications and provides a power rating of 600 W. The insertion module PA-1120DMT which is integrated into the amplifier allows for time-controlled announcements, e.g. special offers or advertising messages. The microphone station PA-6000RC can be used for additional announcements to be made by staff at the customer service desk or the back office to reach individual zones or the entire DIY store. An additional three desktop microphones PA-4300PTT are located in the checkout area. The MAESTRO-1 allows for further announcements to be made by every telephone connected to the telephone system and also allows you to broadcast voice messages in MP3 format or WAV format.

#### Products for this scenario

23 x

**EDL-420/WS**  
Order No. 16.1880  
PA ball speaker (IP44)



7 x

**EDL-110/WS**  
Order No. 16.1930  
Weatherproof PA wall and ceiling speaker



5 x

**EDL-68/WS**  
Order No. 16.2340  
PA ceiling speaker with special 2-step mounting



4 x

**ESP-70/WS**  
Order No. 16.2120  
PA wall speaker



1 x

**PA-6600**  
Order No. 17.2390  
6-zone mono PA mixing amplifier



2 x

**PA-6000RC**  
Order No. 23.5370  
PA zone paging desktop microphone



1 x

**PA-1120DMT**  
Order No. 17.4580  
Digital message and timer insertion



3 x

**PA-4300PTT**  
Order No. 23.0980  
PA desktop microphone (push-to-talk)



1 x

**MAESTRO-1**  
Order No. 17.6250  
PA telephone announcement adapter



# DIY Store

Flush-mount speakers and surface-mount speakers  
1,600 - 1,900 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



## Small Shop

Flush-mount speakers  
90-150 m<sup>2</sup>

### Customer requirements:

- Pleasant and well-balanced background music in the sales area
- Audio streaming from a Bluetooth-enabled smartphone or tablet PC
- User-friendly operation of the entire system
- Versatile connecting facilities for additional audio sources
- Flush-mount speakers of an appealing design, matching the shop interior

### Solution

The flush-mount speakers SPE-254/WS provide excellent background music and a powerful sound. The stereo mixing amplifier SA-440/SW features a particularly user-friendly operating concept, is clearly arranged and provides extensive adjustment options for each input channel. The Bluetooth audio receiver WSA-10BT is applied for wireless audio streaming from a tablet PC or smartphone.

### Products for this scenario

2 x

**SPE-254/WS**

Order No. 10.5510

Pair of ceiling speakers



1 x

**SA-440/SW**

Order No. 25.3880

Universal stereo mixing amplifier, 100 W



1 x

**WSA-10BT**

Order No. 25.5800

Bluetooth audio receiver





# Small Shop

Flush-mount speakers  
90-150 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

## Small Shop

Surface-mount speakers  
90-150 m<sup>2</sup>

### Customer requirements:

- Background music for a pleasant surrounding to promote sales, without being obtrusive
- Music reproduction of MP3 files via connected USB flash drive
- User-friendly operation, even for non-technical users

### Solution

The speakers EUL-60/SW are perfectly integrated into the concept of the shop and provide a well-balanced sound for the reproduction of pleasant and unobtrusive background music. For music reproductions, the mono PA mixing amplifier PA-312DMP features an integrated MP3 player with USB port for connecting a flash drive. With two components only, the system remains uncluttered and impresses with an easy yet highly reliable operation. The amplifier features additional connections for the reproduction from various audio sources, e.g. audio players with radio function or media streaming via network.

### Products for this scenario

2 x

#### EUL-60/SW

Order No. 16.1170

Pair of universal PA speaker systems



1 x

#### PA-312DMP

Order No. 17.2980

Mono PA mixing amplifier with integrated MP3 player



# Small Shop

Surface-mount speakers  
90-150 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



## Medium-sized Shop

Flush-mount speakers  
150-210 m<sup>2</sup>

### Customer requirements:

- Speakers with a high-quality sound yet unobtrusive appearance
- Excellent reproduction of background music, even at higher volume levels
- Audio streaming via smartphone, tablet PC or stationary PC/Mac
- User-friendly and intuitive operation

### Solution

The flush-mount ceiling speakers EDL-62HQ feature a flush fit protective metal grille which is magnetically attached to the speaker front. Thus, they can perfectly be integrated into the surrounding area - ideally suited for unobtrusive indoor PA applications without having to compromise when it comes to the sound quality. The 2-way version provides a wide frequency range and high-quality music. Your own smartphone, a tablet PC or a stationary PC/Mac can be used as an audio player. The WSA-50WIFI of particularly compact size transmits the audio signals to the mono mixing amplifier PA-924 via cable using the WLAN network.

### Products for this scenario

6 x

#### EDL-62HQ

Order No. 16.3430

PA hi-fi wall and ceiling speaker, 30 W



1 x

#### PA-924

Order No. 17.5060

Mono PA mixing amplifier



1 x

#### WSA-50WIFI

Order No. 25.7160

WLAN audio receiver



# Medium-sized Shop

Flush-mount speakers

150-210 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

## Medium-sized Shop

### Surface-mount speakers

130-210 m<sup>2</sup>

#### Customer requirements:

- Excellent sound characteristics for reproduction of background music
- Speakers which can perfectly be integrated into the shop interior
- Versatile audio sources for music reproduction: radio, MP3 files or CD
- Straightforward operation and highest reliability with perfect functionality

#### Solution

The 2-way speakers EUL-80/SW provide a crystal-clear sound at any volume level. These speakers are real eye-catchers in the sales area due to their modern and innovative design. The mono mixing amplifier PA-8120RCD with integrated CD/MP3 player and radio provides most versatile playback options and perfectly meets all requirements. Each component delivers exceptional fidelity and combines a comprehensive PA application with an easy and intuitive operation.

#### Products for this scenario

2 x

##### EUL-80/SW

Order No. 16.1190

Pair of universal PA speaker systems



1 x

##### PA-8120RCD

Order No. 17.3040

Mono PA mixing amplifier with integrated CD MP3 player and radio





# Medium-sized Shop

Surface-mount speakers

130-210 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Petrol Station

Surface-mount speakers  
80-130 m<sup>2</sup>

## Customer requirements:

- PA application with unobtrusive and high-quality background music throughout the sales area
- Compact and easy-to-use system, even for untrained staff
- Music reproduction via FM radio or of MP3 files via USB/SD interface
- Wireless connection facility of Bluetooth-enabled devices, e.g. smartphone or tablet PC

## Solution

For a continuous PA application throughout the petrol station shop, we have used the PA speaker systems ESP-215/WS. The 2-way system with 5 power taps ensures an optimum sound distribution throughout the entire sales area and ensures a reliable reproduction of both the low and high frequencies. The speakers are driven by the mono class D mixing amplifier PA-806DMP with a power rating of 60 W. Despite the compact dimensions, the device combines wireless and cable-connected connection facilities with an impressive power capability and an easy operation. The extra high efficiency of the class D technology ensures minimum power consumption, improved heat generation and highest efficiency. Thanks to an integrated Bluetooth interface, wireless audio streaming from your music libraries onto a smartphone, tablet or laptop can easily be realised. The standard features also include an FM radio and media player for memory cards or USB flash drives.

## Products for this scenario

3 x

### ESP-215/WS

Order No. 19.9990

Weatherproof PA speaker system



1 x

### PA-806DMP

Order No. 17.6920

Mono class D PA mixing amplifier with integrated MP3 player, FM tuner and Bluetooth



# Petrol Station

Surface-mount speakers  
80-130 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.







# Solutions for Education and Houses of Worship

# School

## Surface-mount speakers 1,600-1,900 m<sup>2</sup>

### Customer requirements:

- High speech intelligibility and clear announcements throughout the school premises
- Setting up of versatile call groups for specific information or intended elimination of certain areas which should not be disturbed
- Bell for recess is to be transmitted in each building complex
- Powerful PA application in the assembly hall for different kinds of events, e.g. school parties
- Most reliable operating safety due to 24 V emergency power supply in order to operate the system independently from the mains for a short period of time

### Solution

For the wide-ranging school premises, good speech intelligibility is top priority. For the different rooms, we have used 2-way speakers WALL-05T/SW and WALL-04T/WS. The combination of bass-midrange speakers and dome tweeters ensures clear announcements. For the school's own gym, we have additionally used sound projectors RL-1EN and ball-proof speakers PAB-52WP/WS in order to guarantee a continuous PA application. A total of 3 microphone stations PA-6000RC can be used for making announcements into each zone individually or a selected number of zones. With the MAESTRO-1, it is also possible to make announcements via the telephone system. The power amplifier PA-2240 and a 6-zone mono mixing amplifier PA-6240 perfectly supply each PA zone. The digital message and timer insertion PA-1120DMT which is integrated in the amplifier allows you to create individual break signals and break times. In order to ensure announcements in case of an emergency, the system is connected to 24 V emergency power supply PA-24ESP. The PA system is completed by a 12/2 full range system for the assembly hall. Two active professional DSP speaker systems MEGA-DSP12 (600 W) ensure an excellent sound reproduction and are ideally suited for smaller stages. The system is complemented by the preamplifier PA-1414MX and the versatile CD and MP3 player CD-112/BT.

### Products for this scenario



10 x

**RL-1EN**  
Order No. 16.3680  
PA sound projector for wall mounting with EN 54-24 certification



6 x

**WALL-05T/SW**  
Order No. 16.3580  
Pair of 2-way PA speaker systems



5 x

**WALL-04T/WS**  
Order No. 16.3570  
Pair of 2-way PA speaker systems



4 x

**PAB-52WP/WS**  
Order No. 25.3580  
Weatherproof high-performance PA speaker system, 50 W



2 x

**MEGA-DSP12**  
Order No. 25.4770  
Professional active DSP speaker system with 2-channel amplifier, 600 W



1 x

**PA-6240**  
Order No. 17.2180  
6-zone mono PA mixing amplifier



1 x

**PA-1414MX**  
Order No. 17.4770  
10-channel PA preamplifier



1 x

**PA-2240**  
Order No. 17.0800  
PA power amplifier



1 x

**PA-1120DMT**  
Order No. 17.4580  
Digital message and timer insertion



1 x

**CD-112/BT**  
Order No. 21.2940  
CD and MP3 player with Bluetooth receiver, USB interface and SD/MMC card slot



1 x

**MAESTRO-1**  
Order No. 17.6250  
PA telephone announcement adapter



3 x

**PA-6000RC**  
Order No. 23.5370  
PA zone paging desktop microphone



1 x

**PA-24ESP**  
Order No. 24.3120  
24 V emergency power supply



3 x

**PATL-100**  
Order No. 17.1180  
100 V transformer for connection of a 100 V audio source to devices with line output



2 x

**NPA-12/24**  
Order No. 28.0400  
Rechargeable lead gel battery, 12 V, 24 Ah



# School

Surface-mount speakers  
1,600-1,900 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Classroom

## Surface-mount speakers 70-120 m<sup>2</sup>

### Customer requirements:

- Well-balanced and consistent radiation with high speech intelligibility at every seating position in the room
- Laptop or computer to be used as an audio source
- Wireless audio transmission via Bluetooth
- Easy and straightforward operation, even for inexperienced users
- Compact and space-saving system

### Solution

With the PA speaker systems MKS-232/WS, it is possible to have a comprehensive PA application in the entire classroom. The 2-way speakers provide a high-quality sound which guarantees highest speech intelligibility at every seating position in the room. The compact and highly space-saving mini amplifier SA-160BT features an output power of 60 W which is distributed onto 2 channels and allows for wireless streaming via Bluetooth. It is also possible for different users to operate the system thanks to the easy and intuitive operation of each component.

### Products for this scenario

1 x

#### MKS-232/WS

Order No. 13.2170

Pair of 2-way wall speakers, 30 W



1 x

#### SA-160BT

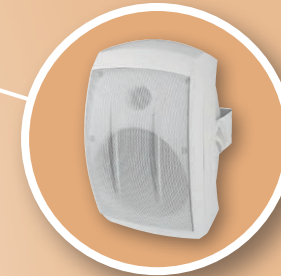
Order No. 25.6010

Mini stereo amplifier, 2 x 30 W, with Bluetooth interface, NFC and remote control



# Classroom

Surface-mount speakers  
70-120 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



# Lecture Hall

Surface-mount speakers  
220-400 m<sup>2</sup>

## Customer requirements:

- PA application to cover the entire lecture hall as well as providing high speech intelligibility
- Excellent sound quality, even at higher volume levels
- Flexible and multifunctional use of the entire PA system
- Wireless media playback via laptop or other portable audio players
- Connection of a headband microphone for the speaker

## Solution

The high-end column speakers ETS-360TW/WS impress with an incredibly dynamic and complete sound, ensure highest speech intelligibility at any listening position and thus allow for attentive listening, even for several hours. Due to a precise sound radiation and a frequency range optimised for music, the column speaker ETS-360TW/WS is a speaker system which is suitable for versatile applications: for lectures, panel discussions as well as official parties with background music. It is also possible to establish a wireless connection between laptop and audio system via Bluetooth audio receiver WSA-10BT, if required. As the last step of signal amplification, the preamplifier PA-1414MX and the power amplifier PA-2240 ensure a perfect sound.

## Products for this scenario

6 x

**ETS-360TW/WS**

Order No. 16.2270

High-end column speakers in a wooden cabinet of compact size



1 x

**PA-1414MX**

Order No. 17.4770

10-channel PA preamplifier



1 x

**PA-2240**

Order No. 17.0800

PA power amplifier



1 x

**WSA-10BT**

Order No. 25.5800

Bluetooth audio receiver



1 x

**TXA-802SR**

Order No. 17.2990

2-channel multifrequency receiver



1 x

**TXA-800HT**

Order No. 17.2260

Hand-held microphone with integrated multifrequency transmitter



1 x

**TXA-800HSE**

Order No. 17.2250

Multifrequency pocket transmitter



1 x

**TXA-800PS**

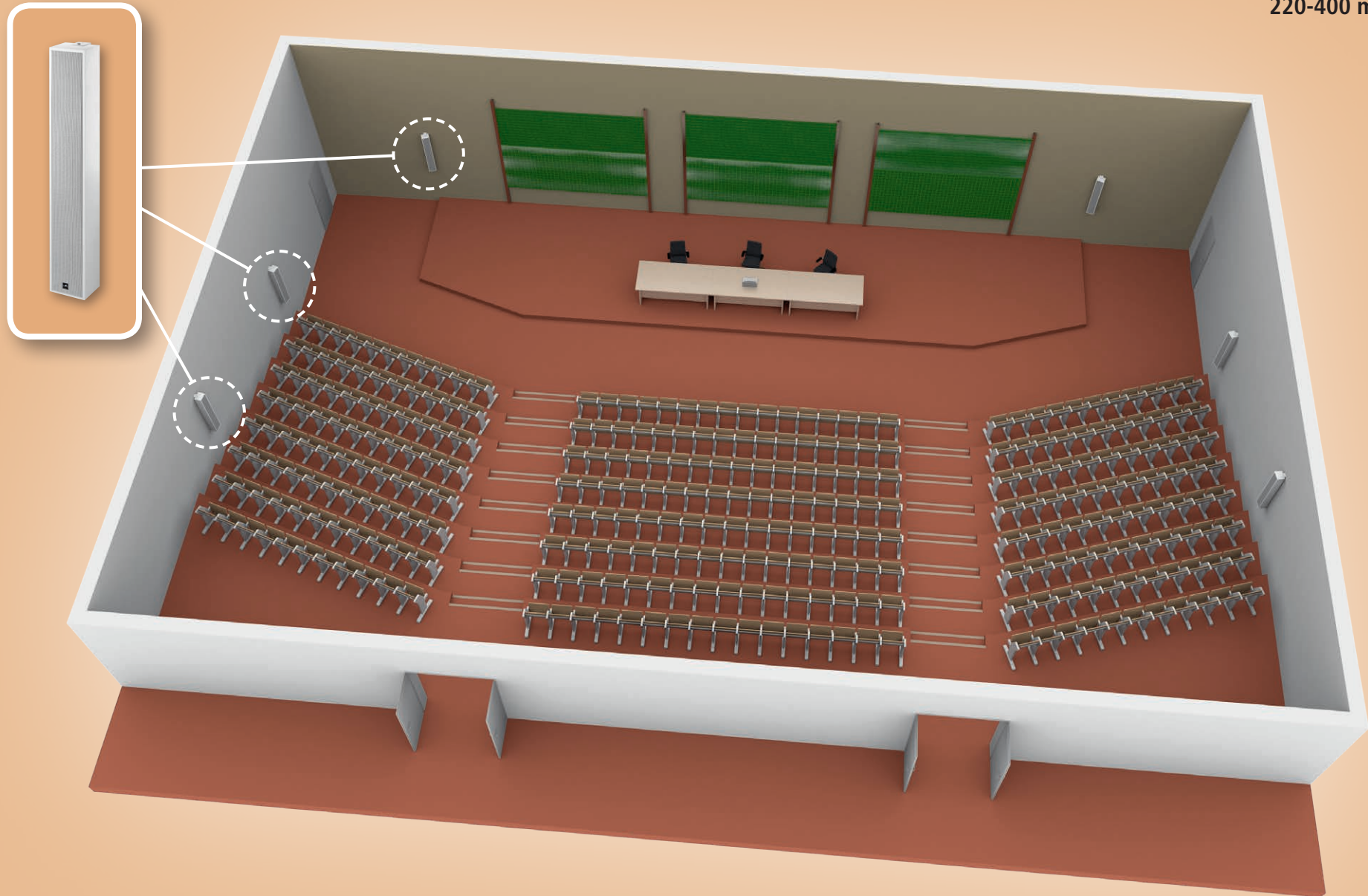
Order No. 25.2140

Intelligent PWM quick-charge station



# Lecture Hall

Surface-mount speakers  
220-400 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Church

## Surface-mount speakers 950-1,300 m<sup>2</sup>

### Customer requirements:

- High-quality music and sound reproduction
- Consistent sound radiation, even in difficult acoustic conditions
- Frequency-stable radiation of each speaker
- Hearing assistance directly to hearing aids or inductive receivers by means of magnetic induction
- Versatile use, e.g. for church service, concert or theatrical performance

### Solution

The PA column speakers ETS-120SL/WS and ETS-220TW/WS provide the perfect sound in a challenging acoustic environment. The slimline design allows for an architecturally unobtrusive installation. No matter whether you are sitting in the first or last row, the speakers deliver a clear and precise reproduction of speech and music without any acoustic feedback. The splitter PA-24AD is used to route the signals to the 120 W mono power amplifier PA-900S as well as the class D amplifier STA-850D. For the inductive transmission of speech and music, we have applied loop amplifier LA-202. The inductive receiver LR-202 then receives the electromagnetic field which is created by an induction loop and converts it into an audio signal for the audience. The CD-112/BT is used as an audio player which can play both CDs and MP3 files and features an integrated Bluetooth receiver.

### Products for this scenario

4 x

#### ETS-120SL/WS

Order No. 16.3450

Pair of line array design speakers in slimline extruded aluminium cabinets



2 x

#### ETS-220TW/WS

Order No. 16.2950

PA column speakers in extruded aluminium cabinets



1 x

#### PA-1414MX

Order No. 17.4770

10-channel PA preamplifier



1 x

#### PA-900S

Order No. 17.2080

Mono PA power amplifier



1 x

#### STA-850D

Order No. 25.2360

8-channel class D amplifier



1 x

#### PA-24AD

Order No. 17.1890

10-way PA line splitter



1 x

#### CD-112/BT

Order No. 21.2940

CD and MP3 player with Bluetooth receiver, USB interface and SD/MMC card slot



1 x

#### LA-202

Order No. 17.6360

Active loop amplifier



1 x

#### LR-202

Order No. 17.6370

Inductive receiver



1 x

#### ECM-310P

Order No. 23.2430

PA desktop microphone with gooseneck





# Church

Surface-mount speakers  
950-1,300 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Mosque

## Surface-mount speakers 270-420 m<sup>2</sup>

### Customer requirements:

- Speech reproduction for acoustic amplification, e.g. of prayers or sermons
- Natural sound and high speech intelligibility throughout the entire mosque, despite challenging and difficult room acoustics
- Elegant speakers for an unobtrusive integration into the existing architecture
- Versatile audio player for playback of the Quran and for recording prayers and sermons
- Hearing assistance directly to hearing aids or inductive receivers by means of magnetic induction

### Solution

The column speakers ETS-120SL/WS and ETS-220TW/WS are of an elegant and unobtrusive design and thus can perfectly be integrated into the architecture of a mosque. Despite their unobtrusive appearance, you don't have to miss out when it comes to sound quality. There are no unwanted reflections from walls or ceilings because the sound energy is emitted directly towards the audience. The PA-24AD distributes the signal to the connected mono class D power amplifier PA-1250D and the class D amplifier STA-450D. The signal is transmitted to the inductive receiver LR-202 via loop amplifier LA-202 by means of electromagnetic induction. The DPR-110 is used for audio reproductions and features a USB interface and an SD/MMC card slot. A recording feature completes the range of functions.

### Products for this scenario

2 x

#### ETS-120SL/WS

Order No. 16.3450

Pair of line array design speakers in slimline extruded aluminium cabinets



4 x

#### ETS-220TW/WS

Order No. 16.2950

PA column speakers in extruded aluminium cabinets



1 x

#### PA-1414MX

Order No. 17.4770

10-channel PA preamplifier



1 x

#### PA-1250D

Order No. 17.3860

Mono class D PA power amplifier



1 x

#### STA-450D

Order No. 25.2350

4-channel class D amplifier



1 x

#### PA-24AD

Order No. 17.1890

10-way PA line splitter



1 x

#### DPR-110

Order No. 21.2320

MP3 recorder with USB interface and SD/MMC card slot



1 x

#### LA-202

Order No. 17.6360

Active loop amplifier

1 x

#### LR-202

Order No. 17.6370

Inductive receiver



1 x

#### TXA-802SR

Order No. 17.2990

2-channel multifrequency receiver



1 x

#### TXA-800HT

Order No. 17.2260

Hand-held microphone with integrated multifrequency transmitter





# Mosque

Surface-mount speakers  
270-420 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.









# Solutions for Sports, Leisure and Health Care

# Football Pitch

Surface-mount speakers  
7,200-10,500 m<sup>2</sup>

## Customer requirements:

- Reliable and efficient all-round solution with a high sound pressure and top-quality audio reproduction, even for music with high volume levels
- Excellent speech intelligibility across the entire ground
- CD player for various audio players (incl. MP3 reproduction, FM RDS tuner and USB interface)
- Robust and weatherproof speakers for fixed installations at poles or the stands
- Microphone for announcements

## Solution

The volume level of the audience at sporting events is a particular challenge for the applied PA technology. The weatherproof music horns IT-400TW with IP66 certification provide a powerful yet precise sound which ensures announcements to remain understandable. For a detailed music reproduction, the horn speakers IT-400TW feature a dynamic cone bass-midrange speaker and horn tweeter which ensure a distinct bass volume. The audio player is connected to the high-performance mono mixing amplifier PA-948 with a power rating of 480 W. The highly versatile CD and MP3 player CD-112RDS/BT features an integrated FM RDS tuner, USB interface as well as SD/MMC card slot and thus perfectly meets every requirement. A wireless connection to a laptop, smartphone or tablet PC can be established via the Bluetooth receiver. The PDM-302 is available for visitor information or commenting sporting events, etc.

## Products for this scenario

8 x

### IT-400TW

Order No. 16.2580  
Weatherproof horn speaker (music horn),  
2-way technology



1 x

### PA-948

Order No. 17.5070  
Mono PA mixing amplifier



1 x

### CD-112RDS/BT

Order No. 21.2950  
CD and MP3 player with FM RDS tuner and  
Bluetooth receiver



1 x

### PDM-302

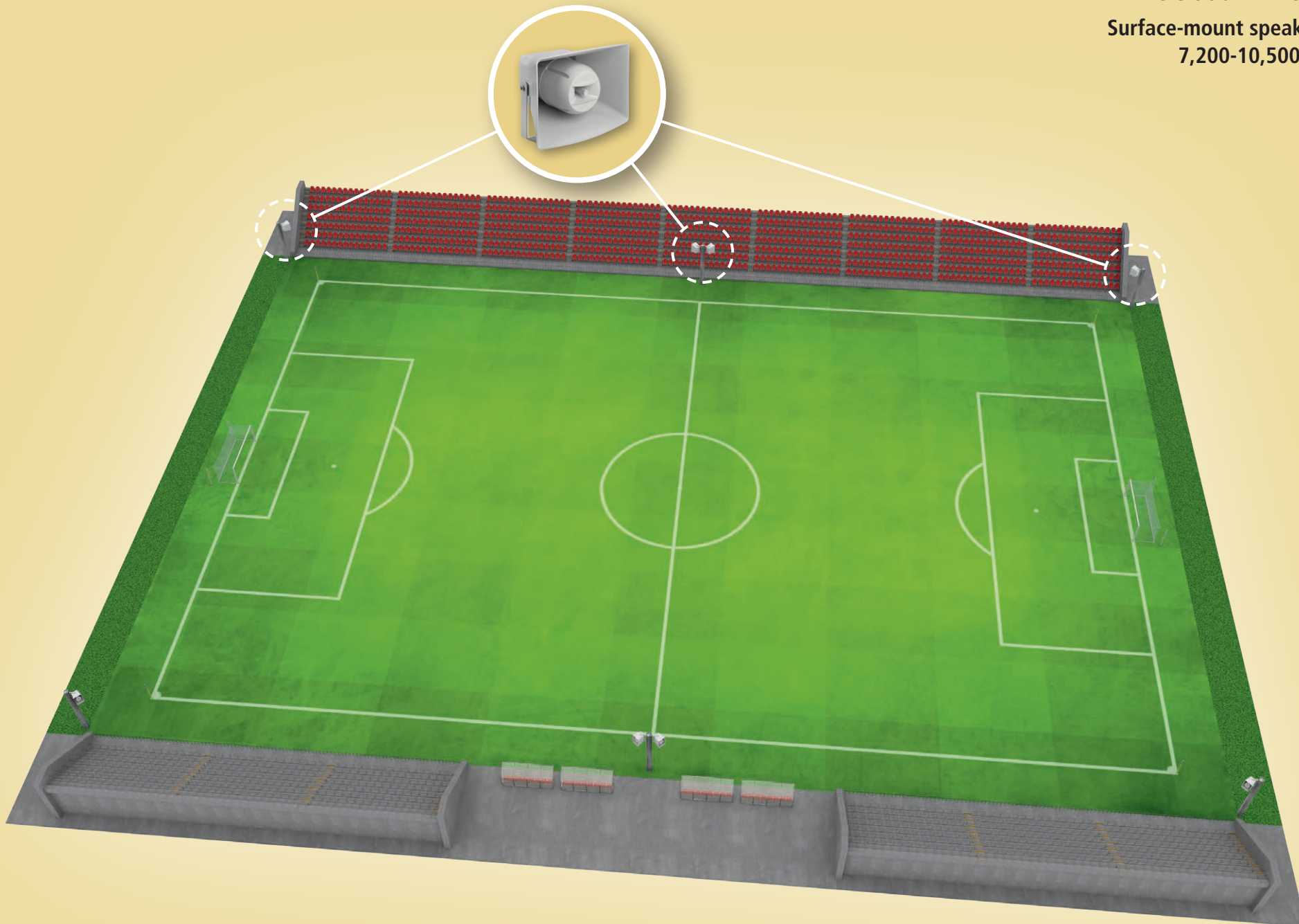
Order No. 23.5560  
PA desktop microphone with gooseneck





# Football Pitch

Surface-mount speakers  
7,200-10,500 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Campsite

## Flush-mount speakers and surface-mount speakers 2,800-5,500 m<sup>2</sup>

### Customer requirements:

- Robust and reliable PA system for announcements and instructions of the staff with a high speech intelligibility
- 6 separate PA sound zones, to be controlled individually
- Unobtrusive background music indoors, including restaurant and reception area
- Music reproduction via FM radio or DAB+
- High-quality weatherproof speaker systems in the outdoor area of the restaurant
- Zone paging microphone in the back office or at the reception
- Maximum operating safety due to 24 V emergency power supply

### Solution

The PA system on a campsite is mainly required for voice reproductions. For the wide open area, we have used weatherproof horn speakers IT-40 with IP66 certification. Unobtrusive background music is additionally required for both the entrance area with an adjoining little restaurant and the sanitary facilities of the main building. In the restaurant, we have used hi-fi ceiling speakers ESP-22/WS. The 2-way version (full range speaker with movable dome tweeter) ensures an excellent sound quality. In addition, we have also applied the 2-way speaker systems ESP-232/SW with IP55 certification to provide a well-balanced and unobtrusive background music on the terrace of the restaurant. In the sanitary facilities, we have used compact flush-mount speakers EDL-22/WS. All of the 4 speaker series are driven by mono mixing amplifier PA-6480 with a power rating of 480 W for up to 6 zones. A connected desktop microphone PA-4000PTT in the office or at the reception is used as a microphone station for making important announcements. It is also possible to play stored messages via digital message insertion module PA-1120DMT (time-controlled) which is integrated in the amplifier. If the operation is to be maintained during a power failure, connection to a 24 V emergency unit PA-24ESR is recommended. The music for the background is inserted via digital stereo tuner FM-102AB.

### Products for this scenario

6 x

**IT-40**  
Order No. 16.1360  
Weatherproof horn speaker



2 x

**ESP-22/WS**  
Order No. 16.1670  
PA hi-fi wall and ceiling speaker



2 x

**ESP-232/SW**  
Order No. 16.2600  
Weatherproof 2-way PA wall-mount speaker system



2 x

**EDL-22/WS**  
Order No. 16.2770  
PA ceiling speaker



1 x

**PA-6480**  
Order No. 17.2190  
6-zone mono PA mixing amplifier



1 x

**PA-1120DMT**  
Order No. 17.4580  
Digital message and timer insertion



1 x

**FM-102DAB**  
Order No. 17.4490  
Digital stereo tuner for reception of FM and DAB+



1 x

**PA-4000PTT**  
Order No. 23.6000  
PA desktop microphone (push-to-talk)



1 x

**PA-24ESP**  
Order No. 24.3120  
24 V emergency power supply



2 x

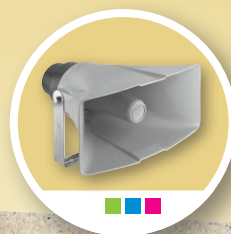
**NPA-12/24**  
Order No. 28.0400  
Rechargeable lead gel battery, 12 V, 24 Ah





# Campsite

Flush-mount speakers and surface-mount speakers  
2,800-5,500 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



# Escape Room

## Flush-mount speakers and surface-mount speakers 220-310 m<sup>2</sup>

### Customer requirements:

- Excellent sound quality of the applied speaker systems, for both music and voice reproductions
- Continuous PA application for each room, including theme rooms, foyer and sanitary facilities
- The different areas of operation require flexible multi-zone control in order to route multiple audio signals to any output
- A microphone station has to be available in the control room for hints and clues from the game master

### Solution

For hobby detectives or anyone who loves to solve riddles, escape room games are an excellent leisure activity. A small group of people have got an hour to find their way out of a locked room. Hidden clues and mysterious riddles must be solved using logical thinking, team spirit and creativity. A flexible multi-zone system is required to provide each room with different audio sources (miking as well as music). For the foyer as well as for the sanitary facilities, we have applied ceiling speakers EDL-68/WS or EDL-35. The theme rooms have been fitted with speaker systems EUL-60/SW. The 2-way bass-reflex system with 11 mm dome tweeter ensures an excellent sound quality. The team can use boundary microphone ECM-302B to ask the team leader for help who communicates via zone paging microphone ARM-880RC. The team leader can also listen to each of the 3 theme rooms via the additionally applied PA speaker EUL-75/WS in the control room. Furthermore, 2 dual CD and MP3 players CD-122 are available for an independent PA application in each of the 4 music zones. This is made possible via audio matrix router ARM-880 which allows you to route up to 8 audio sources to an equal number of zones. A wall module ARM-880WP2 is used for remote control of audio matrix router ARM-880. The class D amplifier PA-1850D (8 x 50 W) provides the voltage for the connected speaker series.

### Products for this scenario

3 x



**EUL-60/SW**  
Order No. 16.1170  
Pair of universal PA speaker systems

3 x



**EDL-68/WS**  
Order No. 16.2340  
PA ceiling speaker with special 2-step mounting

2 x



**EDL-35**  
Order No. 16.2060  
PA ceiling speaker

1 x



**EUL-75/WS**  
Order No. 16.2500  
PA speaker system

1 x



**PA-1850D**  
Order No. 17.2960  
8-channel class D PA amplifier

2 x



**CD-122**  
Order No. 21.2820  
Dual CD and MP3 player with USB 2.0 interface and SD/MMC card slot

1 x



**ARM-880**  
Order No. 17.3800  
Audio matrix router

1 x



**ARM-880RC**  
Order No. 17.3810  
PA zone paging microphone

1 x



**ARM-880WP2**  
Order No. 17.3840  
Wall module for remote control of audio matrix router ARM-880

3 x



**ECM-302B**  
Order No. 23.2370  
Boundary microphone

# Escape Room

Flush-mount speakers and surface-mount speakers  
220-310 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Museum

## Flush-mount speakers and surface-mount speakers 1,700–2,000 m<sup>2</sup>

### Customer requirements:

- Unobtrusive music radiation which is to be controlled individually for foyer, restaurant and museum shop
- Announcement facility with paging function and priority circuit
- To reduce volume level of the background music automatically for announcements which are to be routed to a selected zone or all zones
- For the exhibits, compact external media players are available for reproduction of individual audio files
- Setting up an inductive sound system for wireless reception of audio signals
- Portable tour guide system for a guided tour of a museum which ensures unrestricted movement

### Solution

For the foyer, we have used 2-way pendant speakers EDL-435/WS. They provide background music with a homogeneous sound distribution. In addition, hi-fi speakers EDL-62HQ have been applied in the shop and restaurant, ceiling speakers EDL-84/WS in the sanitary facilities and flush-mount speakers EDL-25 in the exhibition area. The mono mixing amplifier PA-6480 with a power rating of 480 W is used for operating all of the passive speaker systems. It features 100 V outputs for a maximum of 6 PA zones with individual volume control. The insertion module PA-1200RDSU and the zone paging microphone PA-6000RC complement the wide variety of applications possible with the amplifier. Any visitor wishing to have a spontaneous audio tour without prior notice can receive further information on the exhibits via insertion modules DMP-102. The loop amplifier LA-202 and the inductive receiver LR-202 ensure wireless reception of the signal inserted into the inductive loop. Within the loop, any number of receivers can be operated which are available at the ticket counter, if required. At the same time, the electromagnetic audio signal sent via the ring loop can also be used via the T-coil of a hearing aid. In case of an announcement, it will be transmitted to the induction loop with highest priority and the running programme interrupted for the duration. Voice transmission system ATS-50T or ATS-50R is available for guided museum tours.

### Products for this scenario



6 x

**EDL-25**  
Order No. 16.1440  
PA ceiling speaker



5 x

**EDL-62HQ**  
Order No. 16.3430  
PA hi-fi wall and ceiling speaker, 30 W



3 x

**EDL-435/WS**  
Order No. 16.3460  
High-quality 2-way PA pendant speaker



2 x

**EDL-84/WS**  
Order No. 16.2350  
PA ceiling speaker



1 x

**PA-6480**  
Order No. 17.2190  
6-zone mono PA mixing amplifier



5 x

**LA-202**  
Order No. 17.6360  
Active loop amplifier



10 x

**LR-202**  
Order No. 17.6370  
Inductive receiver



5 x

**DMP-102**  
Order No. 17.7090  
Compact MP3 player insertion module with USB interface and SD/MMC card slot



1 x

**PA-1200RDSU**  
Order No. 17.5030  
FM/AM RDS tuner insertion with USB interface



1 x

**PA-6000RC**  
Order No. 23.5370  
PA zone paging desktop microphone



24 x

**ATS-50R**  
Order No. 25.5160  
40-channel PLL receiver



1 x

**ATS-50T**  
Order No. 25.5170  
40-channel PLL transmitter for microphone operation and audio line signals



1 x

**ATS-25C**  
Order No. 25.5180  
Transport bag with integrated charging function for transmitters and receivers of the ATS-50 series



5 x

**PATL-100**  
Order No. 17.1180  
100 V transformer for connection of a 100 V audio signal source to devices with line input



# Museum

Flush-mount speakers and surface-mount speakers  
1,700-2,000 m<sup>2</sup>



-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4
-  Zone 5

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Indoor Riding Arena

Surface-mount speakers  
800-1,200 m<sup>2</sup>

## Customer requirements:

- Music reproduction with an excellent sound quality, e.g. for background music during dressage programs
- Versatile audio player for the reproduction of various audio sources
- Compact microphone with two-way communication for riding lessons
- Applied speakers to provide an excellent sound
- Robust speakers, insusceptible to dust, heat and moisture

## Solution

The music horns IT-300TW have been used for a consistent sound radiation in an indoor riding arena. Regardless of whether used for basic riding lessons or at a competition, the 2-way technology allows for a high-quality music reproduction as well as meeting high musical standards. The speaker with IP66 certification is resistant to dust, heat and moisture and perfectly meets the challenging requirements of an indoor riding arena. The mono mixing amplifier PA-924 provides an output power of 1 x 240 W and features versatile connection facilities. The multi-purpose audio player CD-112RDS/BT is used for the music reproduction and plays CDs as well as MP3 files and also features additional reproduction options via radio and Bluetooth.

With the digital voice transmission system ATS-22, the riding lessons are going to be even easier: riders are provided with the extra lightweight receiver ATS-22R and an unobtrusive earphone. Instructions of the riding instructor are communicated via the transmitter ATS-22T. The highlight: thanks to the two-way communication function, it is possible for the riding pupil to ask questions, too. Another advantage: the hands-free operation allows for the instructor and rider to move freely within the operating range (up to 70 metres). A desktop microphone PDM-302 can be connected to the PA system for commentating riding competitions, for example.

## Products for this scenario

4 x



**IT-300TW**

Order No. 16.2230

Weatherproof horn speaker (music horn), 2-way technology

1 x



**PA-924**

Order No. 17.5060

Mono PA mixing amplifier

1 x



**CD-112RDS/BT**

Order No. 21.2950

CD and MP3 player with FM RDS tuner and Bluetooth receiver

1 x



**ATS-22R**

Order No. 25.7110

16-channel miniature receiver

1 x



**ATS-22T**

Order No. 25.7120

16-channel miniature transmitter

1 x



**ATS-12CB**

Order No. 25.5660

Transport bag with integrated charging function

1 x



**PDM-302**

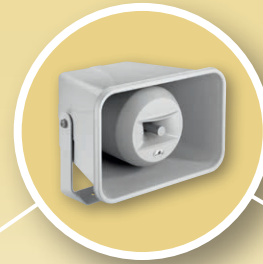
Order No. 23.5560

PA desktop microphone with gooseneck



# Indoor Riding Arena

Surface-mount speakers  
800-1,200 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



# Swimming Pool

Flush-mount speakers and surface-mount speakers  
1,500-1,900 m<sup>2</sup>

## Customer requirements:

- Excellent speech intelligibility for announcements made via the connected microphone
- High-quality music reproduction for training courses, e.g. aqua jogging
- Versatile playback options for background music, e.g. from CD or MP3 files
- Moisture-proof speakers, protected against high humidity

## Solution

The speaker systems ESP-250/WS with 2-way system provide a consistent and high-quality sound radiation in the swimming pool area. The ceiling speakers EDL-158 ensure that announcements made in the changing rooms and in the entrance area are clear and understandable. The matrix router ARM-880 is used for signal transmission and allows you to route up to eight different audio sources to an equal amount of speaker zones. With the connected zone-paging microphone ARM-880RC, you can make sure that announcements made are clear and understandable, either in certain zones or in every zone and, if required, with priority circuit. In order to allow for a reproduction of unobtrusive background music, the audio player CD-112RDS/BT features a Bluetooth receiver for a wireless connection of laptops, smartphones or tablet PCs. It is of course also possible to reproduce CDs or MP3 files from USB storage media and SD/MMC cards. The power amplifier PA-4240 allows you to implement up to 4 speaker lines and is controlled via the audio output of the ARM-880.

## Products for this scenario

6 x



**ESP-250/WS**

Order No. 16.2780

PA speaker system in a weatherproof, white plastic cabinet with protective aluminium grille

24 x



**EDL-158**

Order No. 16.2930

Weatherproof PA ceiling speaker



1 x

**PA-4240**

Order No. 17.0820

PA power amplifier



1 x

**CD-112RDS/BT**

Order No. 21.2950

CD and MP3 player with FM RDS tuner and Bluetooth receiver



1 x

**ARM-880**

Order No. 17.3800

Audio matrix router

1 x



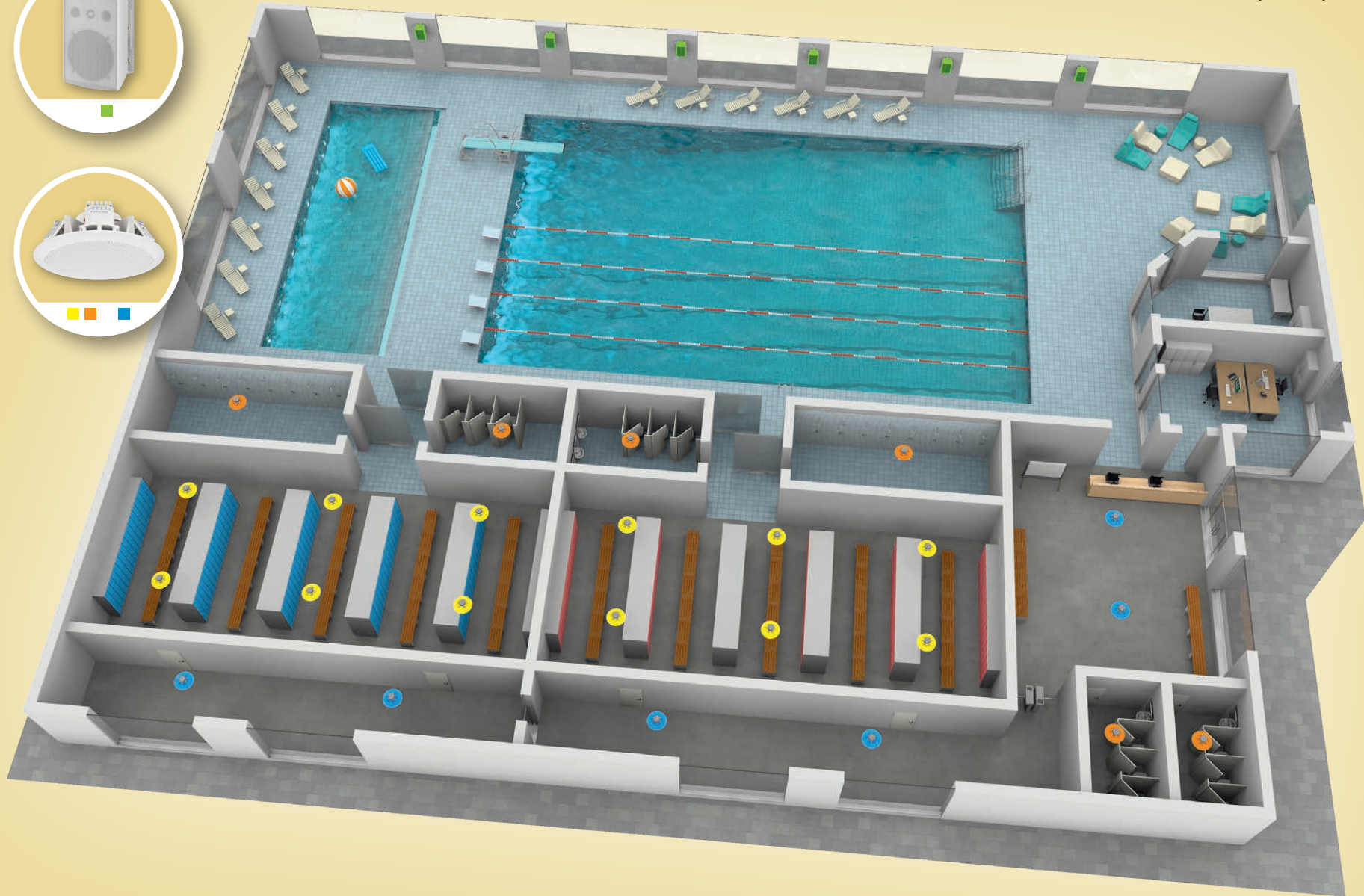
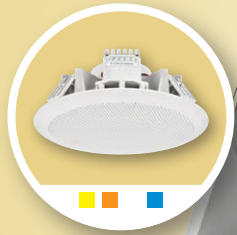
**ARM-880RC**

Order No. 17.3810

PA zone paging microphone

# Swimming Pool

Flush-mount speakers and surface-mount speakers  
1,500-1,900 m<sup>2</sup>



Zone 1



Zone 2



Zone 3



Zone 4

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Fitness Centre

## Flush-mount speakers and surface-mount speakers 520-840 m<sup>2</sup>

### Customer requirements:

- Flexible and high-quality multi-zone solution for reproductions of music and speech
- Unobtrusive background music in the bar area as well as in the changing rooms
- Excellent sound quality in the training room with a rich and powerful bass for a motivating environment during training sessions
- Versatile playback options for music reproductions in the entire fitness centre
- Optional: connection of a wireless microphone for sessions in the training room

### Solution

The flush-mount ceiling speakers EDL-10TW/WS provide pleasant background music in the entire fitness centre, including the training area, the changing rooms and the lounge area. The 2-way speakers feature an excellent sound quality with a consistent radiation pattern and impress with a high-quality music reproduction. The power amplifier PA-4240 with a power rating of 4 x 240 W drives the connected speakers and ensures a reliable operation. With the 2-zone mixer MPX-52PA, it is possible to implement 2 independent zones with versatile routing options for each input channel. The workout area is provided with a powerful music reproduction for a motivating training ambience, whereas the bar area and the changing rooms should feature a pleasant and unobtrusive sound. Audio player WAP-200 offers versatile playback options, e.g. Internet radio, FM RDS and DAB+ tuner, MP3 player or audio streaming via network.

The PA application in the course room has to meet special requirements: various playback options, powerful sound with a powerful bass, easy-to-use system, easiest operation and highest reliability. The speakers EUL-2/SW with a high efficiency and 2 x 20 cm (8") bass speaker and a dynamic 25 mm horn tweeter combined with a subwoofer EUL-2SUB/SW provide a precise and clear sound for a deep and dynamic bass reproduction. The system also includes 4-channel microphone line mixer VMX-440/SW, power amplifier PA-2240 as well as CD-112/BT with CD and MP3 player.

### Products for this scenario



**20 x**  
**EDL-10TW/WS**  
Order No. 16.3380  
PA ceiling speaker with integrated tweeter



**2 x**  
**EUL-2/SW**  
Order No. 17.4450  
PA speaker system



**1 x**  
**EUL-2SUB/SW**  
Order No. 17.4460  
Subwoofer



**1 x**  
**PA-4240**  
Order No. 17.0820  
PA power amplifier



**1 x**  
**PA-2240**  
Order No. 17.0800  
PA power amplifier



**1 x**  
**MPX-52PA**  
Order No. 20.2300  
2-zone mixer for multi-room PA applications



**1 x**  
**VMX-440/SW**  
Order No. 20.2530  
4-channel microphone line mixer



**1 x**  
**WAP-200**  
Order No. 38.7030  
Internet radio, FM RDS and DAB+ tuner,  
MP3 player



**1 x**  
**CD-112/BT**  
Order No. 21.2940  
CD and MP3 player with Bluetooth receiver,  
USB interface and SD/MMC card slot



# Fitness Centre

Flush-mount speakers and surface-mount speakers  
520-840 m<sup>2</sup>



Zone 1



Zone 2

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Dental Practice

## Flush-mount speakers and surface-mount speakers 150-280 m<sup>2</sup>

### Customer requirements:

- Excellent sound characteristics for the reproduction of music and speech
- Unobtrusive music reproduction for a pleasant ambience in the treatment rooms
- Volume control per channel for individual adjustment in each room
- Microphone station at the reception desk for calling in patients and for general announcements in the waiting area and treatment rooms

### Solution

The unobtrusive wall speakers ESP-157/WS are used to ensure a pleasant sound in the treatment rooms. The 2-way system provides a great sound for the reproduction of both speech and music. The flush-mount speakers EDL-10TW/WS which have been installed in the hallway and waiting area allow for a continuous PA application in the entire practice. The class D amplifier PA-1450D provides 4 x 50 W. With the mixer PA-6040MPX, it is possible to implement a multi-room application with an individual control of up to four zones. Thus, it is possible for the practice staff to direct announcements to one specific room or to a group of zones. The audio player CD-112/BT also provides unobtrusive background music to either one zone or several zones.

### Products for this scenario

6 x



**ESP-157/WS**  
Order No. 16.3210  
PA wall speaker

4 x



**EDL-10TW/WS**  
Order No. 16.3380  
PA ceiling speaker with integrated tweeter



1 x  
**PA-1450D**  
Order No. 17.2950  
4-channel class D PA amplifier



1 x  
**PA-6040MPX**  
Order No. 17.4760  
4-zone mixer



1 x  
**CD-112/BT**  
Order No. 21.2940  
CD and MP3 player with Bluetooth receiver,  
USB interface and SD/MMC card slot

1 x



**PA-4000RC**  
Order No. 23.6010  
PA zone paging desktop microphone

3 x

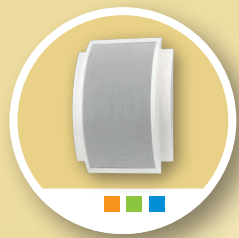


**ATT-536PEU**  
Order No. 17.3920  
Wall-mounted PA volume control



# Dental Practice

Flush-mount speakers and surface-mount speakers  
150-280 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.









# Solutions for Restaurants and Bars

# Bar

## Flush-mount speakers and surface-mount speakers 150-270 m<sup>2</sup>

### Customer requirements:

- Flexible mutli-zone control for individual music reproductions in the four zones
- Unobtrusive background music for the lounge area which should not disrupt ongoing conversations and also allows you to order drinks at the bar without any problems
- Bass-heavy music of higher volume levels on the dance floor
- Unobtrusive background music for the bar and sanitary facilities
- Music reproduction from CD, MP3 file or USB storage medium
- Connection facility for various external audio sources such as tablet PC, smartphone and laptop

### Solution

In addition to unobtrusive and decentral background music for the bar and lounge area as well as for the sanitary facilities, the system must also ensure a powerful sound with a high level stability on the dance floor. In order to ensure a suitable PA application for each individual zone, we have implemented a multi-room solution with a total of 4 zones. The speakers EUL-60/SW radiate pleasant background music to the bar and lounge area which still allows you to hold a conversation. In the sanitary facilities, we have used the ceiling speakers EDL-82HQ to provide quiet background music without appearing dominant or obtrusive. The speakers PAB-308/SW and a subwoofer PSUB-12AKA ensure a lively ambience on the dance floor. Each of the speaker series is driven by the matrix mixing amplifier PA-12040 with 4 x 20 W. The connected audio player CD-122 is able to replay CDs as well as MP3 files from USB storage media or SD cards.

### Products for this scenario

3 x



**EUL-60/SW**  
Order No. 16.1170  
Pair of universal PA speaker systems

2 x



**EDL-82HQ**  
Order No. 16.3440  
PA hi-fi wall and ceiling speaker

2 x



**PAB-308/SW**  
Order No. 25.4290  
Universal PA speaker system, 125 W

1 x



**PSUB-12AKA**  
Order No. 25.4310  
Active 2.1 PA subwoofer, 800 W

1 x



**PA-12040**  
Order No. 17.3390  
4-zone matrix mixing amplifier

1 x



**CD-122**  
Order No. 21.2820  
Dual CD and MP3 player with USB 2.0 interface and SD/MMC card slot

1 x



**ATT-235H/WS**  
Order No. 17.6130  
Wall-mounted PA volume control



# Bar

Flush-mount speakers and surface-mount speakers  
150-270 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Restaurant

## Flush-mount speakers and surface-mount speakers 140-250 m<sup>2</sup>

### Customer requirements:

- Flexible multi-zone PA application with individual volume control for the guest area, outdoor area and the sanitary facilities
- Well-balanced sound for unobtrusive background music in the different sound zones
- Unobtrusive integration of the speakers into the guest area
- Weatherproof outdoor speakers with excellent sound characteristics
- Versatile reproduction options from CD, MP3 file and Internet radio
- Media streaming via network and wireless audio transmission via Bluetooth

### Solution

A flexible multi-zone PA application provides pleasant and unobtrusive music in the entire restaurant. The flush-mount ceiling speakers EDL-10TW/WS can unobtrusively be integrated into the restaurant's environment. The 20 cm (8") 2-way coaxial speaker with additional tweeter ensures an excellent sound quality with a consistent radiation pattern. The remaining areas are provided with pleasant background music, too. For the outdoor area, we have applied weatherproof speaker systems ESP-232/WS with IP55 certification and for the sanitary facilities, we have installed the ceiling speakers EDL-155. The mixer MPX-4PA distributes the signals to all three zones with user-defined routing of all input channels. A 4-channel class D PA amplifier PA-1450D provides the connected speakers with a nominal power of 200 W. Various audio sources can be fed into the system via the two audio players. Audio player WAP-200 is suitable for the reception of the digital radio DAB+ and allows access to more than 20,000 Internet radio stations worldwide. In addition, it allows for media streaming of files which can be accessed via the network (UPnP server). For wireless audio reproduction, the CD player CD-112/BT features an integrated Bluetooth receiver for quick and easy access to a laptop, smartphone or tablet PC.

### Products for this scenario

4 x

#### EDL-10TW/WS

Order No. 16.3380

PA ceiling speaker with integrated tweeter



2 x

#### EDL-155

Order No. 16.2920

PA ceiling speaker



2 x

#### ESP-232/WS

Order No. 16.2610

Weatherproof 2-way PA wall-mount speaker system



1 x

#### PA-1450D

Order No. 17.2950

4-channel class D PA amplifier



1 x

#### MPX-4PA

Order No. 20.2070

3-zone mixer



1 x

#### CD-112/BT

Order No. 21.2940

CD and MP3 player with Bluetooth receiver, USB interface and SD/MMC card slot



1 x

#### WAP-200

Order No. 38.7030

Internet radio, FM RDS and DAB+ tuner, MP3 player





# Restaurant

Flush-mount speakers and surface-mount speakers  
140-250 m<sup>2</sup>



-  Zone 1
-  Zone 2
-  Zone 3

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



# Function Room

Surface-mount speakers  
150-340 m<sup>2</sup>

## Customer requirements:

- Flexible solution for versatile PA applications
- Efficient speakers to provide a powerful sound with an excellent sound quality
- Music reproduction from CD, MP3 or wireless via a laptop with integrated Bluetooth module
- Connection facility for one or several (wireless) microphones

## Solution

The PA speaker systems EUL-2/SW provide a well-balanced and dynamic sound and thus, allow for versatile reproductions of music and speech. Two subwoofers EUL-2SUB/SW provide a low and dynamic bass reproduction. Speaker systems and subwoofer are driven by a power amplifier PA-2240 with a power rating of 2 x 240 W. A preamplifier PA-1414MX is connected in front of the power amplifier which provides versatile connection facilities and feeds the input channel to either one channel or two channels. A CD and MP3 player is used as an audio source and provides most versatile reproduction options: the CD-112RDS/BT with integrated FM RDS tuner allows for reproduction from USB storage media and SD/MMC cards as well as wireless music reproduction via Bluetooth. In addition, it is also possible to connect a microphone signal to the preamplifier, if required.

## Products for this scenario

4 x



**EUL-2/SW**  
Order No. 17.4450  
PA speaker system

2 x



**EUL-2SUB/SW**  
Order No. 17.4460  
Subwoofer



1 x  
**PA-1414MX**  
Order No. 17.4770  
10-channel PA preamplifier



1 x  
**PA-2240**  
Order No. 17.0800  
PA power amplifier



1 x  
**CD-112RDS/BT**  
Order No. 21.2950  
CD and MP3 player with FM RDS tuner and Bluetooth receiver

1 x



**TXA-802SR**  
Order No. 17.2990  
2-channel multifrequency receiver

1 x



**TXA-800HT**  
Order No. 17.2260  
Hand-held microphone with integrated multifrequency transmitter

# Function Room

Surface-mount speakers  
150-340 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Café

## Flush-mount speakers 90-150 m<sup>2</sup>

### Customer requirements:

- High-quality music reproduction with a homogeneous sound distribution in the room
- Simple and intuitive operation of the applied PA technology, even for untrained or inexperienced users
- Various audio sources for music reproduction, including MP3 player with USB/SD interface, FM radio or via Bluetooth-enabled devices
- Flexible connection facilities for additional music sources

### Solution

The movable PA ceiling speakers EDL-65TW feature a well-balanced sound and can unobtrusively be integrated into the guest area of the café. The high-quality 2-way coaxial system with 2-way crossover network provides unobtrusive background music with excellent sound characteristics. In the sanitary facilities, we have used 2 x EDL-22/WS which can separately be controlled via volume control ATT-524PEU. The PA ceiling speakers are of a compact design, but still provide a very wide-band music reproduction. A class D mixing amplifier PA-812DMP provides sufficient power with 120 W per channel for the connected speaker series and ensures a high-quality audio reproduction with low heat generation. The range of features also includes various sound adjustments, versatile connection facilities and various integrated media functions. In addition to the integrated MP3 player and FM tuner, music sources can be played via Bluetooth connection, too. It is also possible to connect microphones or additional audio devices to the PA-812DMP.

### Products for this scenario

2 x

#### EDL-65TW

Order No. 16.2220

Movable PA ceiling speaker



2 x

#### EDL-22/WS

Order No. 16.2770

PA ceiling speaker



1 x

#### PA-812DMP

Order No. 17.6930

Mono class D PA mixing amplifier with integrated MP3 player, FM tuner and Bluetooth



1 x

#### ATT-524PEU

Order No. 17.3910

Wall-mounted PA volume control with 24 V emergency priority relay





# Café

Flush-mount speakers  
90-150 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.







# Solutions for Office Buildings and Conference Rooms



# Office Buildings

Flush-mount speakers  
250-500 m<sup>2</sup>

### Customer requirements:

- Unobtrusive flush-mount ceiling speakers for reproduction of music and speech
- Pleasant background music with individual volume control for each office
- Announcements made via microphone stations at the reception to have priority and briefly interrupt the background music
- Music reproduction of radio, CD and USB storage media
- Speakers in the conference room with excellent sound characteristics for multifunctional use, e.g. for lectures and presentations

### Solution

The unobtrusive flush-mount ceiling speakers EDL-10TW/WS combine an excellent sound quality with highest speech intelligibility. Wall-mounted PA volume controls allow for an individual volume control of the background music in the offices. We have also installed 4 x speaker EDL-620 in the treatment rooms. Both speaker series are driven by the high-performance power amplifier PA-6240. A CD module PA-1140RCD for the front insertion compartment of the amplifier is used as an audio source which allows for a music reproduction from radio, CD or a USB storage medium. When making announcements at the reception via the microphone station PA-6000RC, all other audio channels are muted thanks to the adjustable priority function.

### Products for this scenario



10 x

**EDL-10TW/WS**

Order No. 16.3380

PA ceiling speaker with integrated tweeter



4 x

**EDL-620**

Order No. 16.2590

PA ceiling speaker

1 x

**PA-6240**

Order No. 17.2180

6-zone mono PA mixing amplifier



1 x

**PA-1140RCD**

Order No. 17.3530

RDS tuner/CD player insertion with USB interface



1 x

**PA-6000RC**

Order No. 23.5370

PA zone paging desktop microphone



5 x

**ATT-512PEU**

Order No. 17.3900

Wall-mounted PA volume control



# Office Buildings

Flush-mount speakers  
250-500 m<sup>2</sup>



- Zone 1
- Zone 2
- Zone 3
- Zone 4

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



# Office Buildings

Surface-mount speakers  
250-500 m<sup>2</sup>

## Customer requirements:

- Compact, yet top-quality wall speakers for high-quality background music
- Music reproduction from CD, MP3 files, radio, external storage media or a Bluetooth connection
- Excellent sound quality of the speakers in the treatment rooms
- User-friendly and intuitive operation for the user

## Solution

The PA speaker systems EUL-60/SW are used for the PA application in a conference room and office building. Compact wall-mount speakers ESP-232/WS provide an excellent sound in the hallway. Both speaker series are connected to the amplifier PA-12040 which provides a total output of 4 x 120 W. Thus, it is possible to distribute the connected speakers to up to 4 speaker zones and allow for an individual volume control. For an audio player, we used a CD-112RDS/BT which features an integrated FM RDS tuner and Bluetooth receiver as well as a CD and MP3 function.

## Products for this scenario

4 x

**EUL-60/WS**

Order No. 16.1180

Pair of universal PA speaker systems



3 x

**ESP-232/WS**

Order No. 16.2610

Weatherproof 2-way PA wall-mount speaker system



1 x

**PA-12040**

Order No. 17.3390

4-zone matrix mixing amplifier



1 x

**CD-112RDS/BT**

Order No. 21.2950

CD and MP3 player with FM RDS tuner and Bluetooth receiver



# Office Buildings

Surface-mount speakers  
250-500 m<sup>2</sup>



Zone 1

Zone 2

Zone 3

Zone 4

Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

## Seminar Room

Flush-mount speakers  
80-150 m<sup>2</sup>

### Customer requirements:

- Unobtrusive flush-mount ceiling speakers with excellent sound characteristics
- Excellent sound quality and speech intelligibility at every seating position in the room
- Bluetooth support for laptops, smartphones or tablet PCs
- Optional: connection of one or several wireless microphones for presenters and lecture halls

### Solution

The flush-mount ceiling speakers EDL-82HQ feature a stylish flush fit housing and thus are perfectly suitable for an unobtrusive integration into the existing environment. Combined with the 240 W mixing amplifier, the connected speakers with excellent sound characteristics provide an impressive performance. The audio player CD-112/BT is used as a signal source and is able to playback MP3 files from USB storage media and SD/MMC memory cards as well as allow for wireless transmission via Bluetooth.

### Products for this scenario

6 x

#### EDL-82HQ

Order No. 16.3440

PA hi-fi wall and ceiling speaker



1 x

#### PA-324

Order No. 17.4420

Mono PA mixing amplifier



1 x

#### CD-112/BT

Order No. 21.2940

CD and MP3 player with Bluetooth receiver, USB interface and SD/MMC card slot





# Seminar Room

Flush-mount speakers  
80-150 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.

# Seminar Room

Surface-mount speakers  
80-150 m<sup>2</sup>

## Customer requirements:

- 2-zone control for front speakers and decentral wall speakers
- Audio reproduction from CDs, MP3 files, USB storage media, SD/MMC cards or wireless from external devices, e.g. laptop and smartphone
- Excellent speech intelligibility in the entire room
- Connection facility of one or several wireless microphones

## Solution

The particularly slim line array speakers ETS-120SL/WS have been applied as front speakers. The high-performance design speakers impress by an unobtrusive and elegant design, yet feature an excellent sound quality. The applied mono mixing amplifier PA-4040 provides extensive connection facilities and easily meets the requirements of multi-zone applications. Thanks to the CD and MP3 player CD-112/BT which features a Bluetooth receiver, SD/MMC card slot and USB interface, it is possible to provide music reproductions from most varying audio sources.

## Products for this scenario

1 x

**ETS-120SL/WS**

Order No. 16.3450

Pair of line array design speakers in slimline extruded aluminium cabinets



1 x

**EUL-30/WS**

Order No. 16.1160

Pair of universal PA speaker systems



1 x

**TXA-802SR**

Order No. 17.2990

2-channel multifrequency receiver



1 x

**TXA-800HT**

Order No. 17.2260

Hand-held microphone with integrated multifrequency transmitter



1 x

**PA-4040**

Order No. 17.2520

4-zone matrix mixing amplifier



1 x

**CD-112/BT**

Order No. 21.2940

CD and MP3 player with Bluetooth receiver, USB interface and SD/MMC card slot



# Seminar Room

Surface-mount speakers  
80-150 m<sup>2</sup>



Are you planning a similar PA application? We accept the challenge and will find the perfect solution for your project. Just contact us.



## Your Project is Our Project

### Profound planning results in an excellent sound and highest speech intelligibility

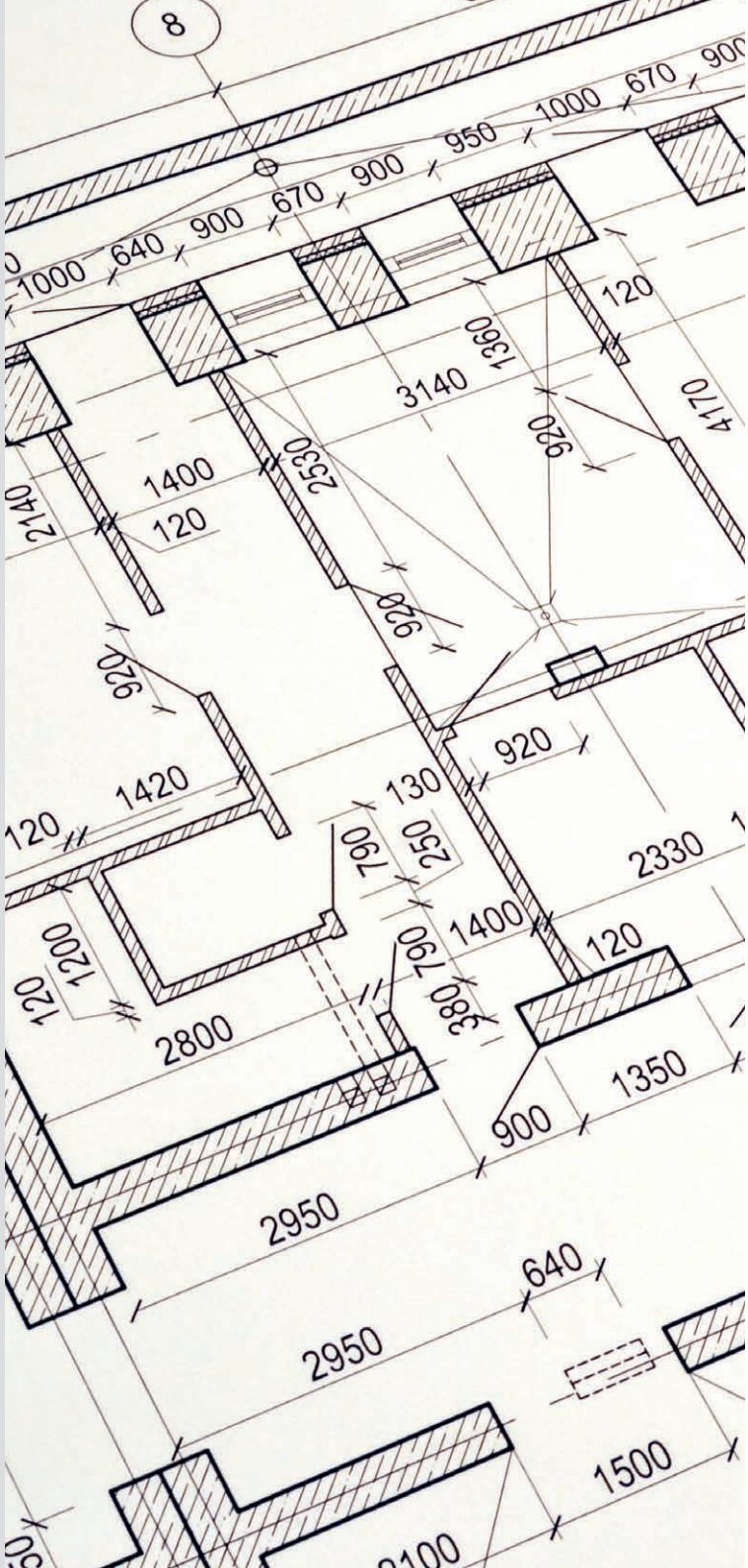
A genuine reproduction, perfect speech intelligibility and an optimum sound are crucial for a successful PA project. The requirements made on acoustics and sound have, however, increased considerably in recent years. Thus, thorough planning for your individual project is indispensable, with each project having a special focus and specific requirements. The challenge is to precisely match the large number of technical details and components:

When selecting suitable speakers, a natural and genuine sound quality for the reproduction of speech and music is top of the list. In classrooms, conference rooms, lecture rooms, seminar rooms or in houses of worship, excellent speech intelligibility is required both in the first and last row. However, the requirements for restaurants, shops or cafés are totally different where we want pleasant and unobtrusive background music to ensure an appealing environment; this triggers positive emotions and invites you to linger. The alignment of the speakers should achieve a consistent radiation pattern. Radiation angle, frequency range and sound pressure are just a few speaker parameters which influence the reproduction of speech and music.

For each PA project, we have to consider specific acoustic surroundings when creating the perfect PA solution. Interfering reflections, acoustic feedback or echoes must be prevented and the announcements should be heard and understood at every position, even with high background noise.

Planning a professional PA system requires comprehensive know-how and careful project development. Speakers, amplifiers, audio players, microphone systems, mixers, hundreds of metres of cable, distributors and plugs - everything has to be matched down to the smallest detail. Right from the start, the planning experts from MONACOR will be at your side to support you so you can keep track of your PA project. Because: Your Project is Our Project.





## Your Project is Our Project

Each project starts with a series of questions. Together, we will certainly find the right answers to your questions and in close cooperation are able to create an individual PA concept. Each concept results from the requirements you make and respective local conditions. Together with the planning experts from MONACOR, you will be able to create the perfect solution for your intended location.

- Where do you want to install the PA system? - Indoor or outdoor solution
- What is the intended use of the PA system? - Focus to be placed on speech intelligibility or background music
- What is the location like? - e.g. surface materials (glass, concrete or carpet) and ceiling structure. The possibility of mounting flush-mount speakers into a (suspended) ceiling has to be checked individually
- How big is the area to be covered by the PA application? - e.g. floor area and ceiling height
- How many people does the PA system have to reach?
- What kind of audio sources are to be used for the reproduction?
- Do you need connection facilities for microphones (wireless or cable-connected)?
- And do not forget: what kind of a budget is available?

A dimensioned drawing or room measurements complete the profile of requirements. Considering all of the objectives, we can make sure that the PA system will meet your requirements and is going to be suitable for the intended use.



## Success can be Planned

MONACOR and its staff continuously implement an extensive service and thus stand out from the rest. We always consider the latest trends and proceed with efficiency and reliability. We love to see quality in both our products and our business relationships. With every project, we therefore rely on a close and trusting working relationship with our partners - right from the planning stage through to the final inspection, including the implementation.

### This is what you can expect from us:

- Comprehensive support during the planning stage for various types of use and fields of applications
- Full analysis of expectations as well as spatial conditions and acoustic conditions
- Tailor-made PA concepts which are perfectly adapted to the environment and your requirements
- Comprehensive know-how and years of experience from numerous successfully implemented PA projects
- Careful selection of suitable system components according to special room requirements for ensuring a top-quality sound and/or speech intelligibility
- Close cooperation and coordination with planners, architects and expert installers
- Maximum planning reliability: 3-year warranty on products from MONACOR

**Use our experience, our expertise and our competence to ensure your project to be a success.**





# Our Technical Project Management: Expert Knowledge for a Successful Project

No two projects are the same: reproductions of speech and/or music have to meet most varying requirements as well adapt to different room acoustics which all have to be considered when planning a PA system.

Our experts will assist you in searching for the perfect audio solution for your project, right from the planning stage through to the final inspection. Our technical project managers travel all over Germany in order to create a tailor-made solution with you. The colleagues on site will make your project our project.

With this brochure, we cannot of course publish the whole range of PA solutions. However, our project specialists will be happy to discuss your project in a personal meeting. We will be happy to implement your project and look forward to your challenge. With our technical project management, you will certainly find the right point of contact.



**Frank Kammer**  
(Director)  
kammer@monacor.de  
+49 421 4865 360



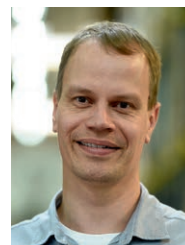
**Jürgen Eggeling**  
(Field Service, Northern Region)  
eggeling@monacor.de  
+49 1523 4037935



**Christian Meyer**  
(Back Office)  
c.meyer@monacor.de  
+49 421 4865 351



**Benjamin Luley**  
(Field Service, Northern Region)  
luley@monacor.de  
+49 1520 5780382



**Michael Krebbing**  
(Back Office)  
krebbling@monacor.de  
+49 421 4865 352



**Werner Müller**  
(Field Service, Southern Region)  
w.mueller@monacor.de  
+49 1523 2093851

## Our Technical Project Management Team

E-mail: [projekte@monacor.de](mailto:projekte@monacor.de)

Central telephone number: +49 421 4865 355

Central fax number: +49 421 4865 356



**Michael Dreis**  
(Field Service, Southern Region)  
dreis@monacor.de  
+49 1523 3871536

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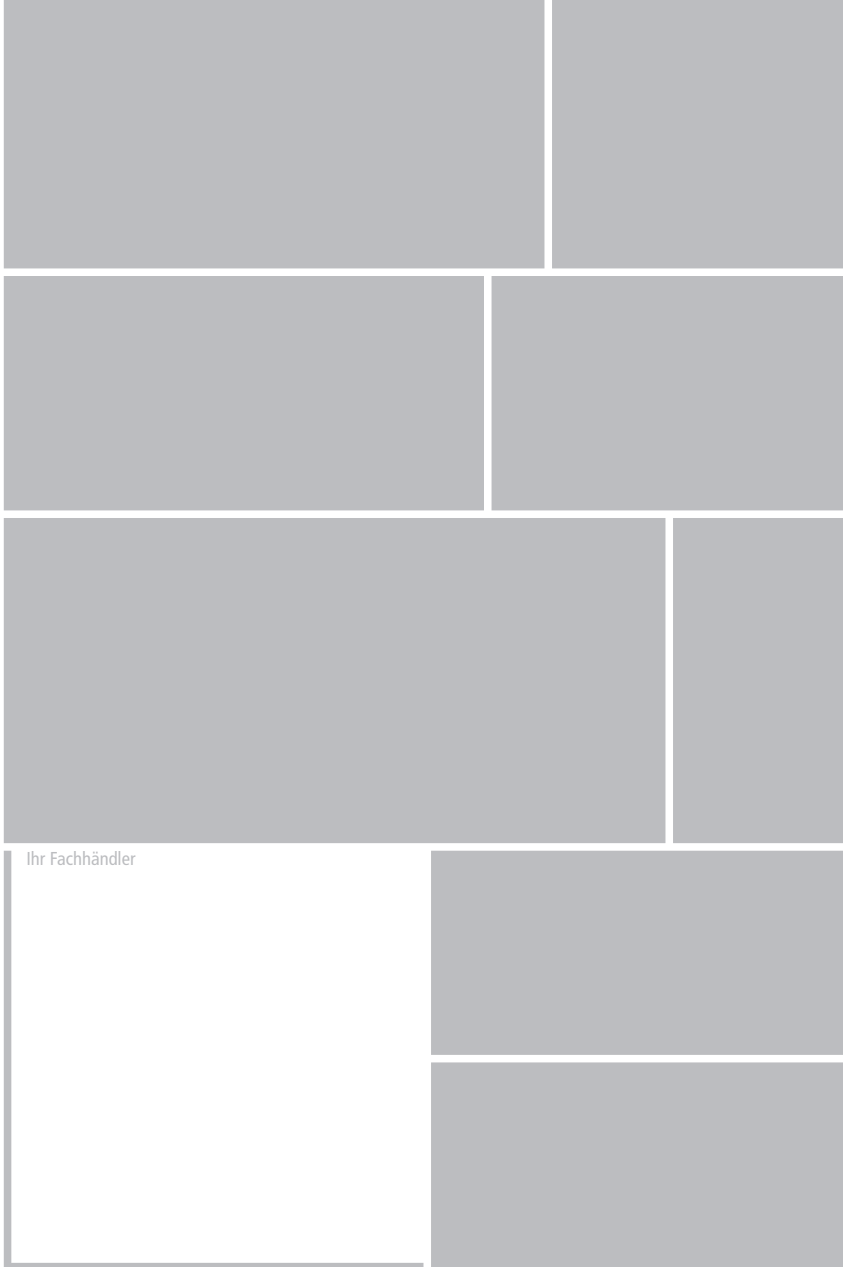
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# MONACOR

**HEADQUARTERS**  
**MONACOR INTERNATIONAL**  
Zum Falsch 36  
28307 Bremen  
Germany  
Phone: +49 421 4865-0  
Fax: +49 421 488415  
info@monacor.com  
www.monacor-international.com

[www.monacor.com](http://www.monacor.com)



Ihr Fachhändler



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