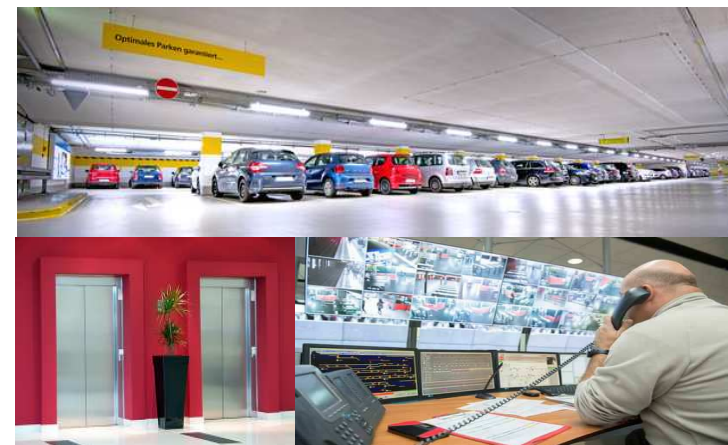# SipComStage

AD610
IP SIP Interface

SIP Based Audio Over IP

IP-SIP Speakers –Audio IP-SIP Amplifiers –MulticastEncoder – Managemente Software
VoIP Communication Special Systems, IP Paging, Signaling, Alarms.

APPLICATION NOTES

CPS
Communication Partner Sales GmbH

TEMA
TELECOMUNICAZIONI

CSQ

UNI EN ISO 9001:2015

PRODUCTS **SipComStage**

AD610
SIP PoE Amplifier 4W (2+2W) output with transformer for external amplifiers

AD611
SIP PoE Amplifier 12W (2x6W)
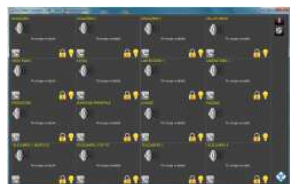
AD612
SIP PoE Amplifier 40W (2 x 20W)

AD615/S
Multicast Encoder IP PoE

AA-600
Intercom IP-SIP PoE Modules with Camera kit, Keyboard, RFID and Amplifier 4-20W

NEW!

'Videoconsole' Software for PC / iOS / Android

Products tested with the most common Pbx brands:

SIEMENS - AVAYA - ALCATEL – PANASONIC – SAMSUNG – NEC - 3CX - WILDIX - AASTRA - ASCOM - VT NITSUKO - SELTA – PHILIPS - ZYCOO
… and other IP-PBX brands
including SOFTPHONE and ASTERISK-based systems

Microphone Bases and Console

ADAM Audio Management software

AD630
SIP 25W Horn with amplifier 40W inside (2x20W)

AD635
IP-SIP Speaker 12W (2x6W), wall mount

AD633
IP-SIP Speaker 12W (2x6W), ceiling mount

AD633C
IP-SIP Speaker 12W (2x6W), ceiling mount with flameproof cover

AD634
IP-SIP Sound Projector 20W with amplifier 40W (2x20W) inside ,wall mount

Option and Accessories

AA-39DL
Plug Power Supply 220Vac/12Vdc-1,0A.

AA-39D1A
DIN Power Supply 220Vac/15Vdc-1,0A.

AA-39P4
PoE injector 230Vac/48Vdc 0,5A.

AA-39E3   (30W)
DIN Power Supply 220Vac/24Vdc-1,25A
AA-39E6V (60W)
DIN Power Supply 220Vac/24Vdc-2,50A

AA-699xxx
Flash lights with Xeon lamp or high brightness LEDs. Ideal to be controlled by the relay of the IP-SIP speakers of the AD630 series or by the IP-SIP amplifier AD610, AD611, AD612 modules, with a call in progress add a light signal to the acoustic signal.

AD301R
30W analog amplifier, 2 channels, Volume-High-Low +/-12dB controls

AD320/30
PA 100V audio line transformer 30W, constant voltage, high efficiency toroidal type with low magnetic flux leakage.

AD32
Isolation transformer, balanced, mixer, attenuator, audio signal filter, low impedance output. Ideal for decoupling devices of audio sources to other amplifiers to eliminate noises.
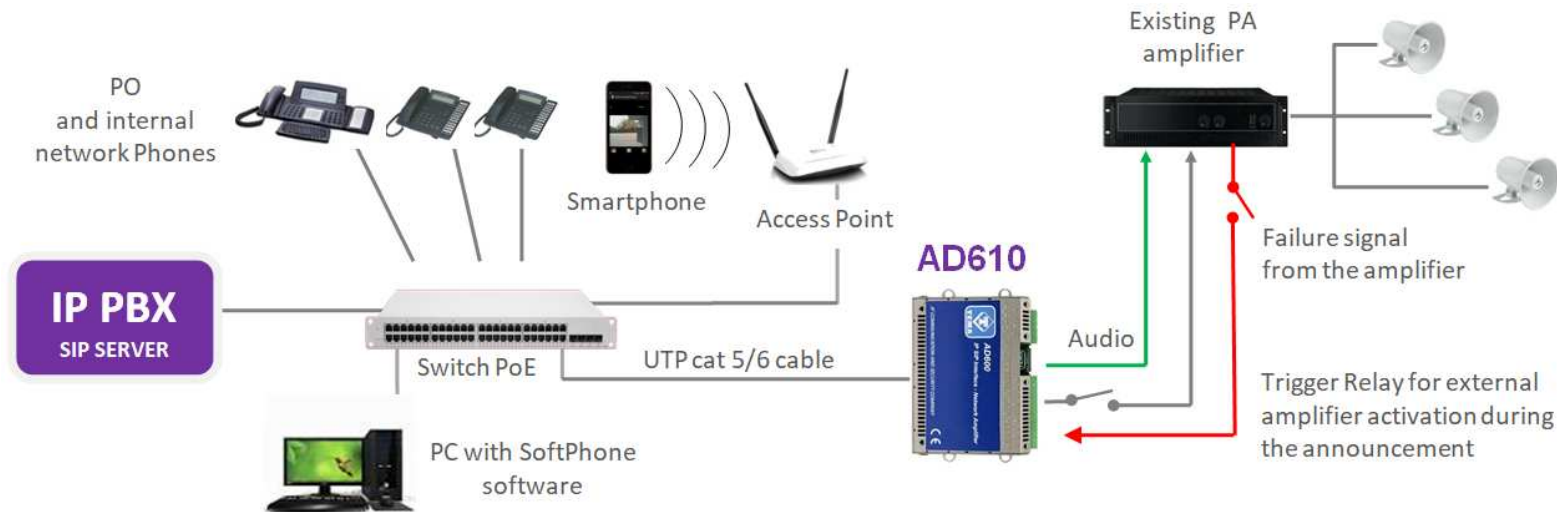
AA-36
Protected Power Relay Actuator 250Vac/16A/4KVA, command in AC/DC 12V/24V, 1 contact, Led, contacts protected by electric arcs. Ideal for driving loads up to 4.000W..

AA-39D2
DIN Power Supply 220Vac/15Vdc-2A-30W

AD610 Telephone network interface to a traditional P.A. paging audio system: announcements from every telephone in the telephone network

In any situation where there is already a traditional audio system with centralized amplifier and passive loudspeakers in the various areas, it is possible to integrate and enhance the performance of the system in a simple and fast way without installing special cables or upgrading the existing amplifier. With AD610 the access to the central amplifier will be extended to all the PBX users enabled to launch an announcement on the P.A paging system network from any phone. An internal relay signals to the amplifier the presence of an announcement and remains closed for the whole duration of the same, while an appropriate input detects any faulty of the amplifier and communicates them to a person making a SIP call. Some application examples:

In a *Supermarket* AD610 is used to request assistance at a cash desk and for announcements useful to customers from any telephone station.

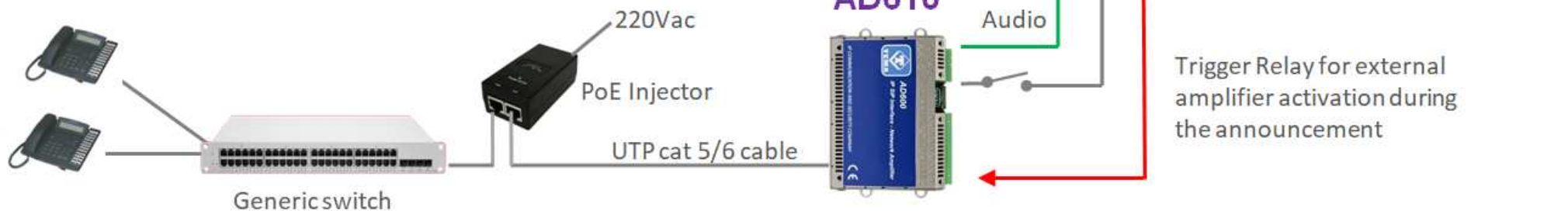In a *Factory* AD610 works like searching people using the existing speaker network.

In a *Mechanical workshop* (noisy), in addition to the transmission of warnings, the AD610 is used to repeat the PBX ringer for an incoming telephone call difficult to hear from the installed phones.

In a *Emporium* AD610 is used to stream background music on all speakers through the existing audio amplifier. The background music stops automatically when there are announcements and alerts.
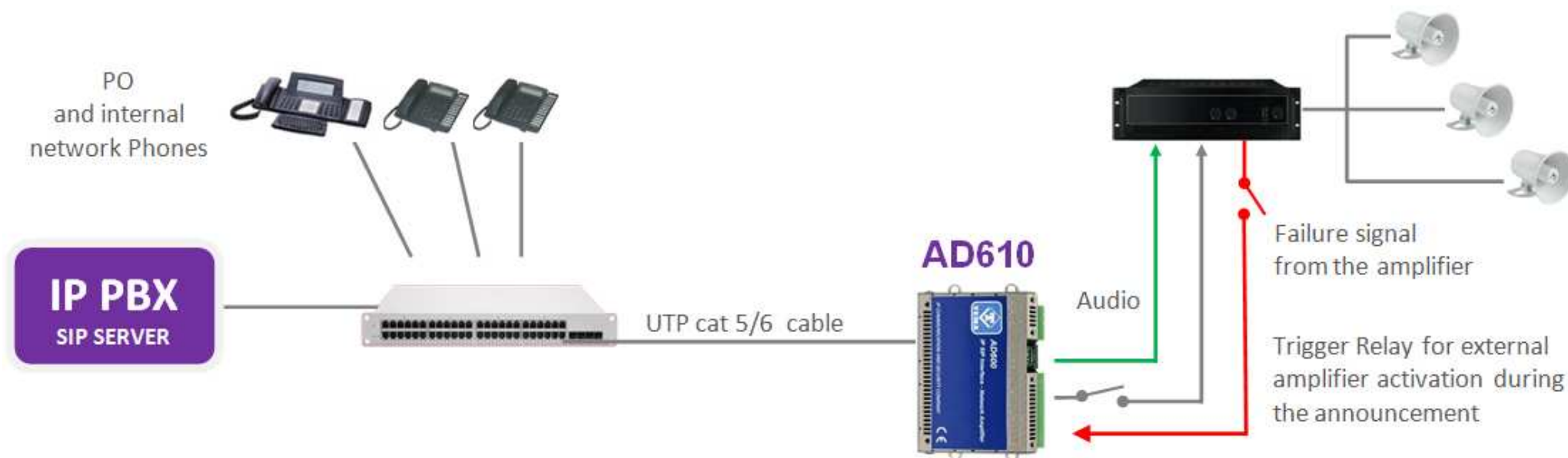
... and if there is no IP-PBX?

In the absence of an IP-PBX the AD610 module can also operate stand-alone, in Peer to Peer (Point-to-Point) mode in a LAN network by simply inserting a generic switch and one or more SIP phones. The power supply to AD610 module can be provided from the switch (if PoE), by an external power supply or a PoE injector inserted in the LAN cable.
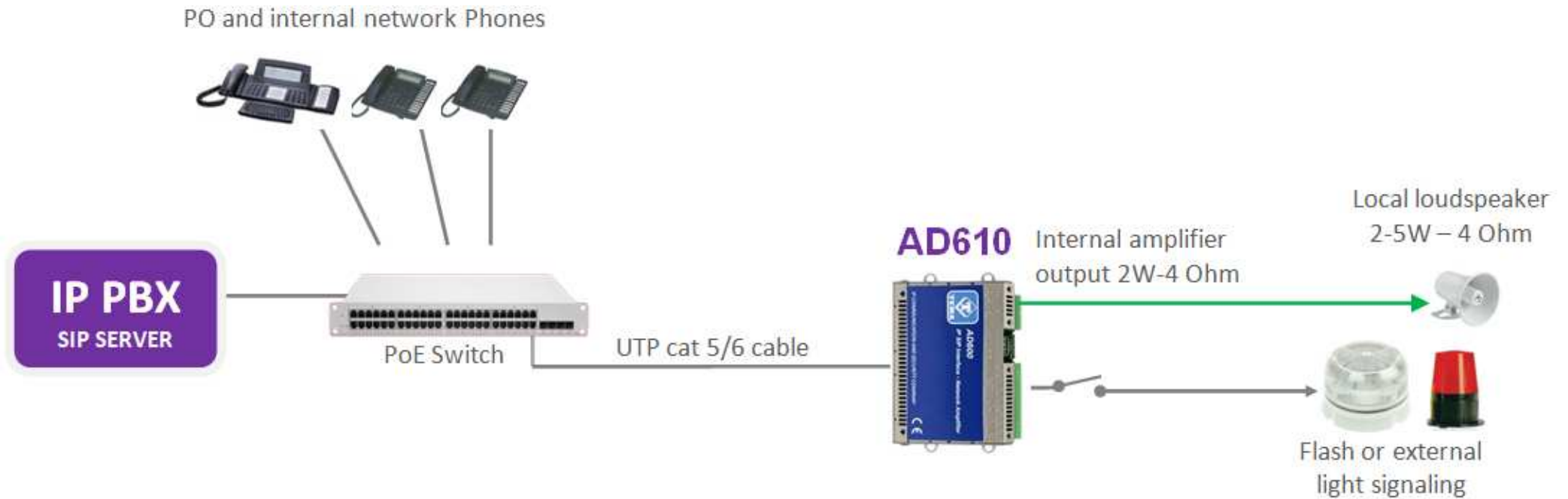
AD610 is equipped with *2 SIP accounts* with 2 different operating modes. The first is used as a number to call for announcements from the telephone, the second is used to be inserted into a PBX group and to repeat a telephone call, for example during night service, generating an audio to be sent to the amplifier and consequently on the existing speaker network. The AD610 comes with several prerecorded sound files but the user can insert his own audio file at will to be reproduced following the event.

AD610 SIP repeater of the telephone ringer on the loudspeaker network

AD610 is equipped with *2 SIP accounts* with 2 different operating modes. The first is used as a number to call for announcements from the telephone, the second is used to be inserted into a PBX group and to repeat a telephone call, for example during night service, generating an audio to be sent to the amplifier and consequently on the existing speaker network. The AD610 comes with several prerecorded sound files but the user can insert his own audio file at will to be reproduced following the event.

PO and internal network Phones

IP PBX
SIP SERVER

PoE Switch

UTP cat 5/6 cable

AD610 Internal amplifier output 2W-4 Ohm

Local loudspeaker 2-5W – 4 Ohm

Flash or external light signaling

AD610 AD610 is able to repeat the ringtone on its own internal amplifier and transmit it to a local loudspeaker of any type, for example the model Tema AD300/15T.

The internal relay, which was normally used for the existing amplifier, can now be used to control an external light to provide visual information as well as acoustic information in the presence of a repeated telephone call. It is possible to use a "Flash" signaling model AD699/X10B or other similar available.
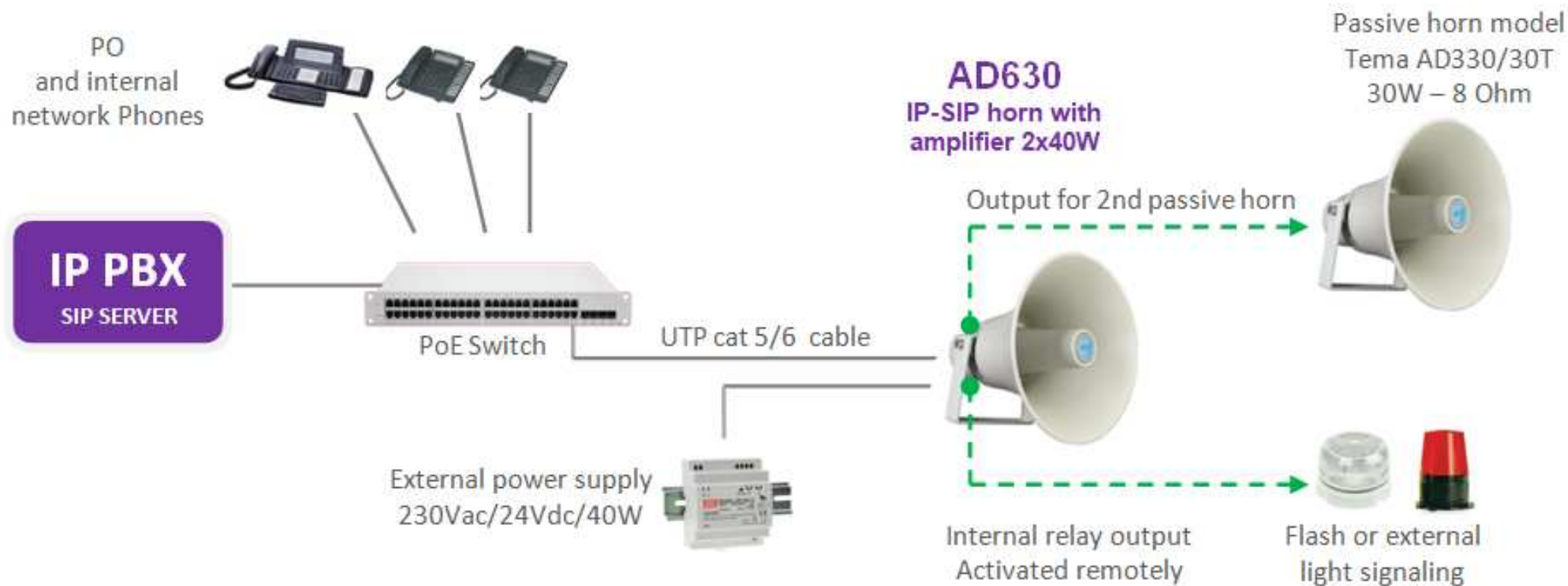
AD612 Standalone SIP repeater of the telephone ringer with greater sound power

PO and internal network Phones

IP PBX SIP SERVER

Switch

UTP cat 5/6 cable

AD612
IP-SIP module with amplifier 2x40W

Output 1

Output 2

Passive speakers
1x20W – 8 Ohm
2x20W – 8 Ohm

External power supply
230Vac/24Vdc/40W

Internal relay activated remotely

Flash or external light signaling

If a high sound power is required, it is possible to use the IP-SIP AD612 module able to repeat the ringtone on its own internal power amplifier with a total power of 40W and transmit it to one or more local loudspeakers of any type, for example the model Tema AD300/30T.

The internal relay, which was normally used for the existing amplifier, can now be used to control an external light to provide visual information as well as acoustic information in the presence of a repeated telephone call. It is possible to use a "Flash" signaling model AD699/X10B or other similar available.

PO and internal network Phones

IP PBX

SIP SERVER

PoE Switch

UTP cat 5/6 cable

External power supply
230Vac/24Vdc/40W

AD630
IP-SIP horn with
amplifier 2x40W

Output for 2nd passive horn

Passive horn model
Tema AD330/30T
30W – 8 Ohm

Internal relay output
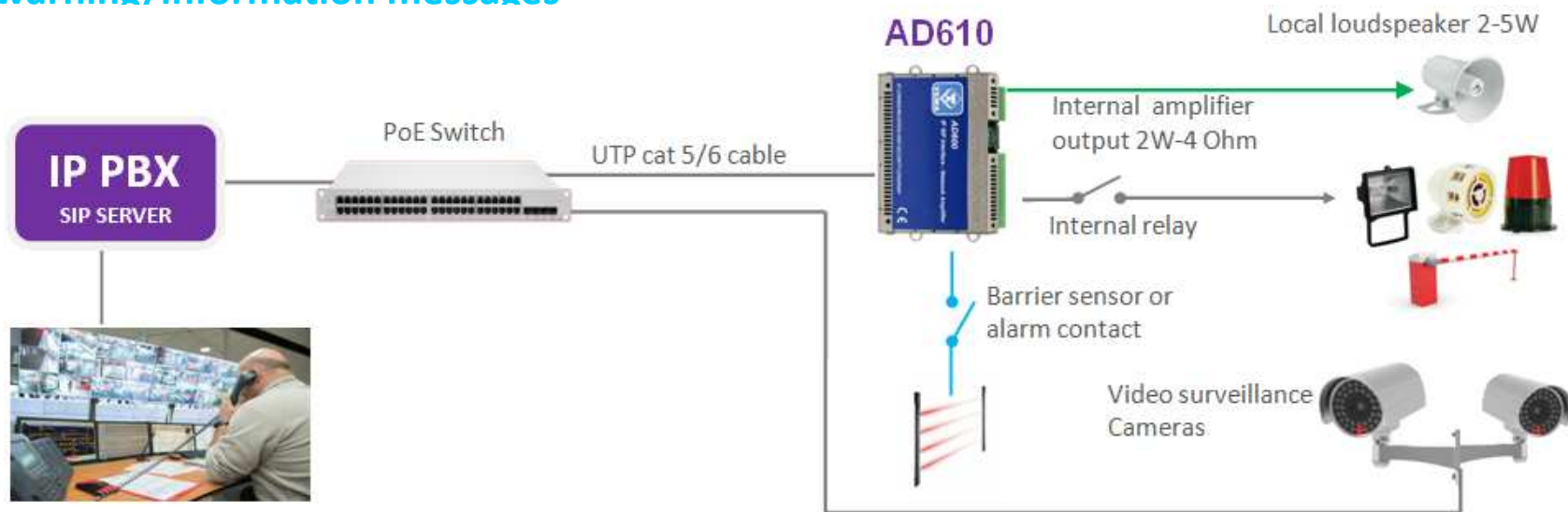Activated remotely

Flash or external
light signaling

1 Connect a SipComStage AD600 series product to a PoE switch with a standard cat. 5/6 cable, or to a generic switch by powering the AD600 with the external power supply

2 Assign an IP address and the credentials of the LAN to AD600

3 Register into IP-PBX the number assigned to AD600 in the text box reserved for the 2nd SIP account

4 Enter the number assigned to the AD600 product in the night group of the IP-PBX, or divert incoming calls (in the absence of the IP-PBX operator) to the number assigned to AD600.

Ringer group		
2° SIP account user	565	
password	•••	
volume	8	(1..9)
ampli on	☑	
relay 1	☑	
relay 2	☐	
	Apply	

Upon arrival of a telephone call to the IP-PBX, the same will be repeated at high volume by AD635 with sounds chosen by the customer freely programmable in the device. A light indicator or a "Flash" available in the catalog can be connected to the system to add a light signal in addition to the acoustic one.

Internal network phones

IP PBX
SIP SERVER

Switch PoE

AD635
IP-SIP wall mount
Speaker 2x6W

AD610 Audio deterrence in video surveillance systems: emission of sounds and warning/information messages
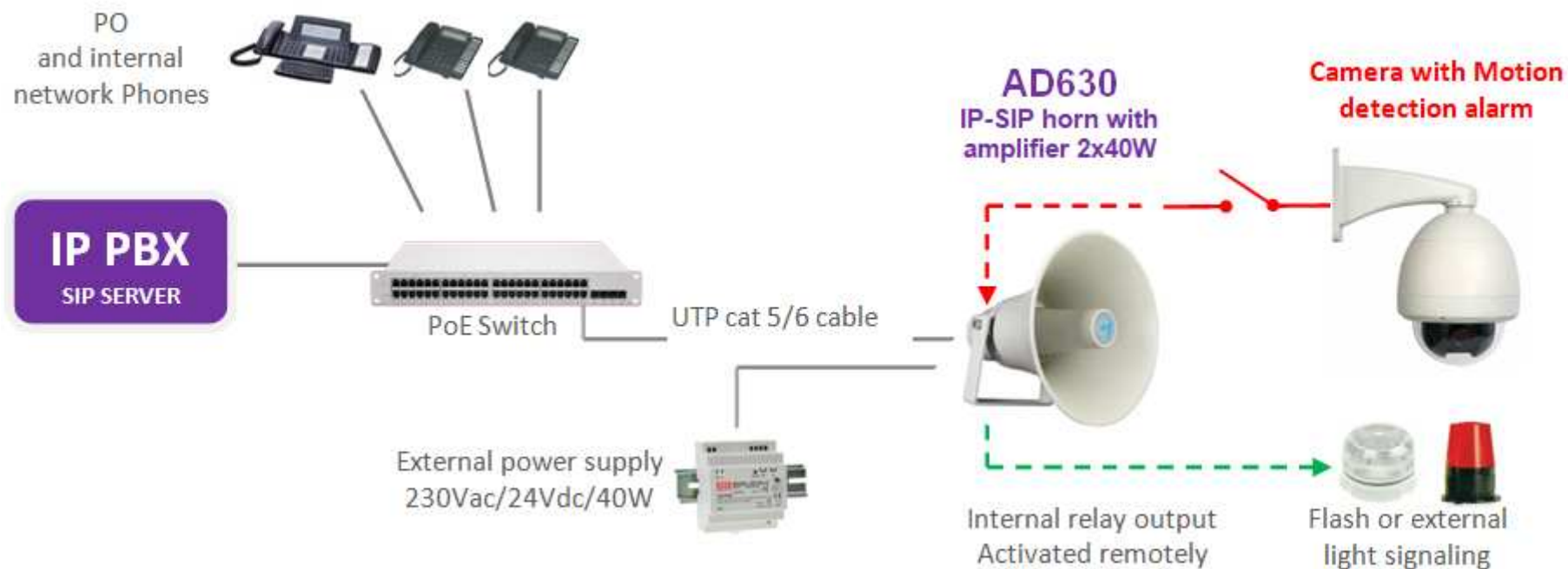

When the operator in the control center detects a suspected malicious activity through the cameras he connects to the AD610 module with a simple SIP phone call and can act in 3 ways:

- *Communicate by voice an alert through the loudspeaker connected to the AD610 module*
- *Activate a prerecorded message and programmed in the module (up to 5 different memories)*
- *Activate a relay inside the device to control external devices (sirens, lights, ...)*

The AD610 also has an input to which an external sensor can be connected, such as a safety barrier contact or a normal alarm contact. When an alarm event occurs, AD610 can send a pre-recorded sound or message to the local speaker and call a programmed telephone number to alert the event with another specific warning message. The operator can connect to the AD610 module and still operate as described above.
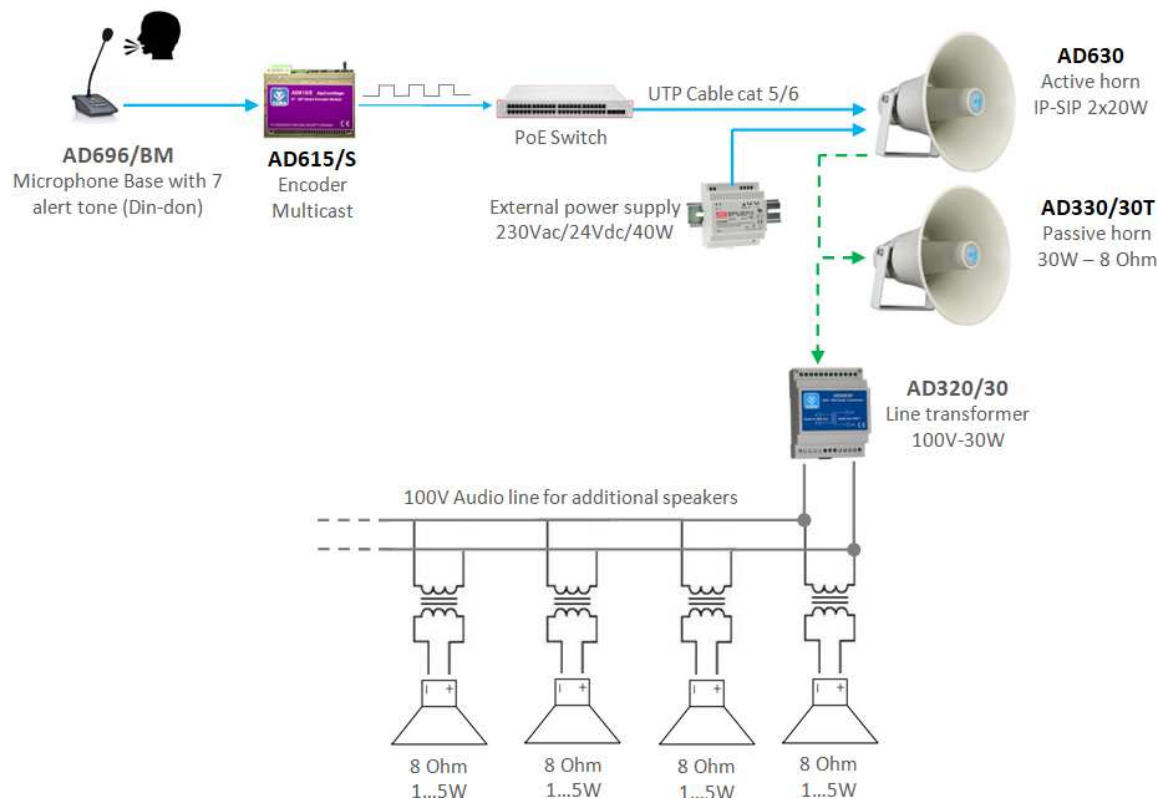
06A

AD630 Audio deterrence in video surveillance systems: Emission of Sounds and messages with local camera activation with Motion Detection
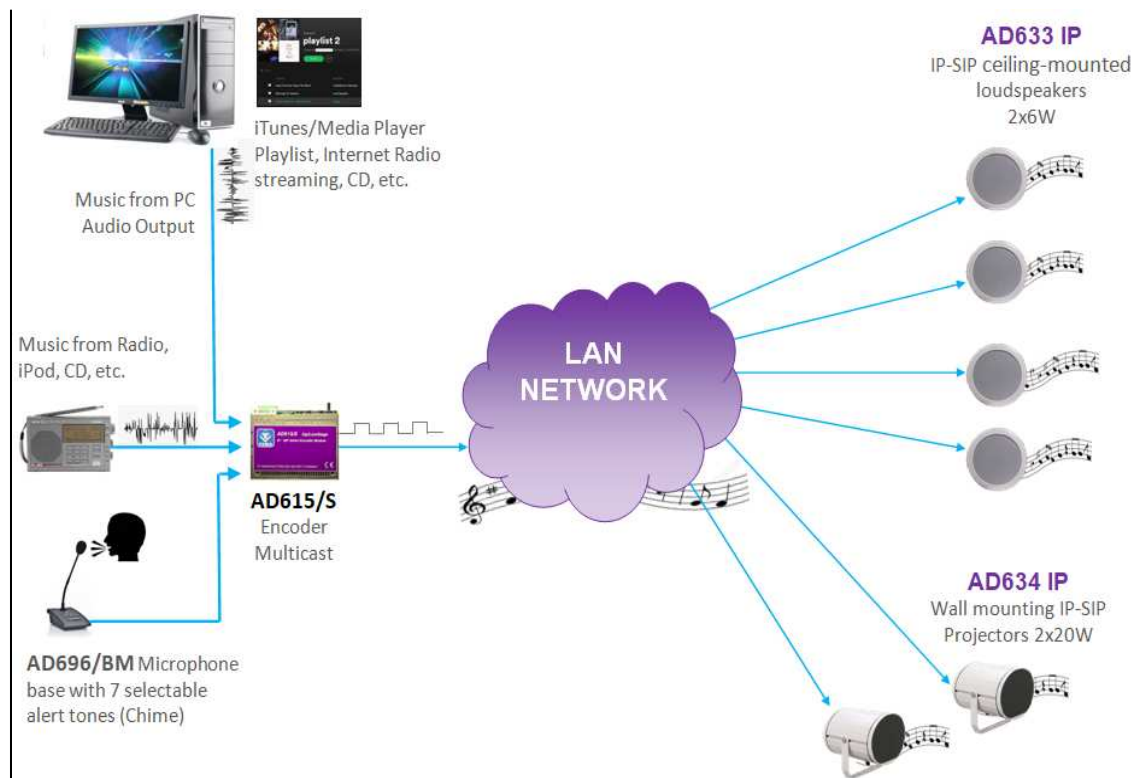
With the use of an IP-SIP horn it is possible to activate in the local area the emission of sounds or warning messages by means of an alarm contact coming from the camera following the intervention of the Motion Detection: when the contact is activated an automatic sound or a prerecorded message is emitted from the horn, at the end of which the horn can make a telephone call to the pre-set number and inform the surveillance personnel who can always call the horn and launch an additional announcement or interact activating the internal horn relay.
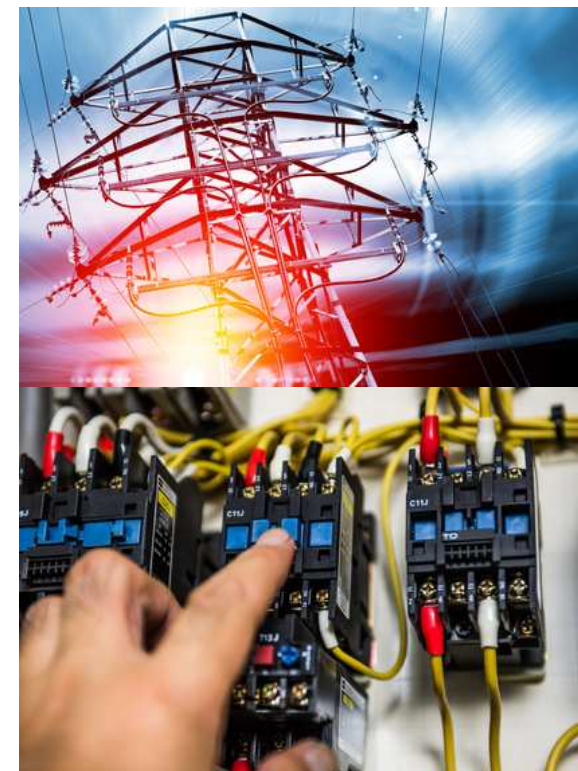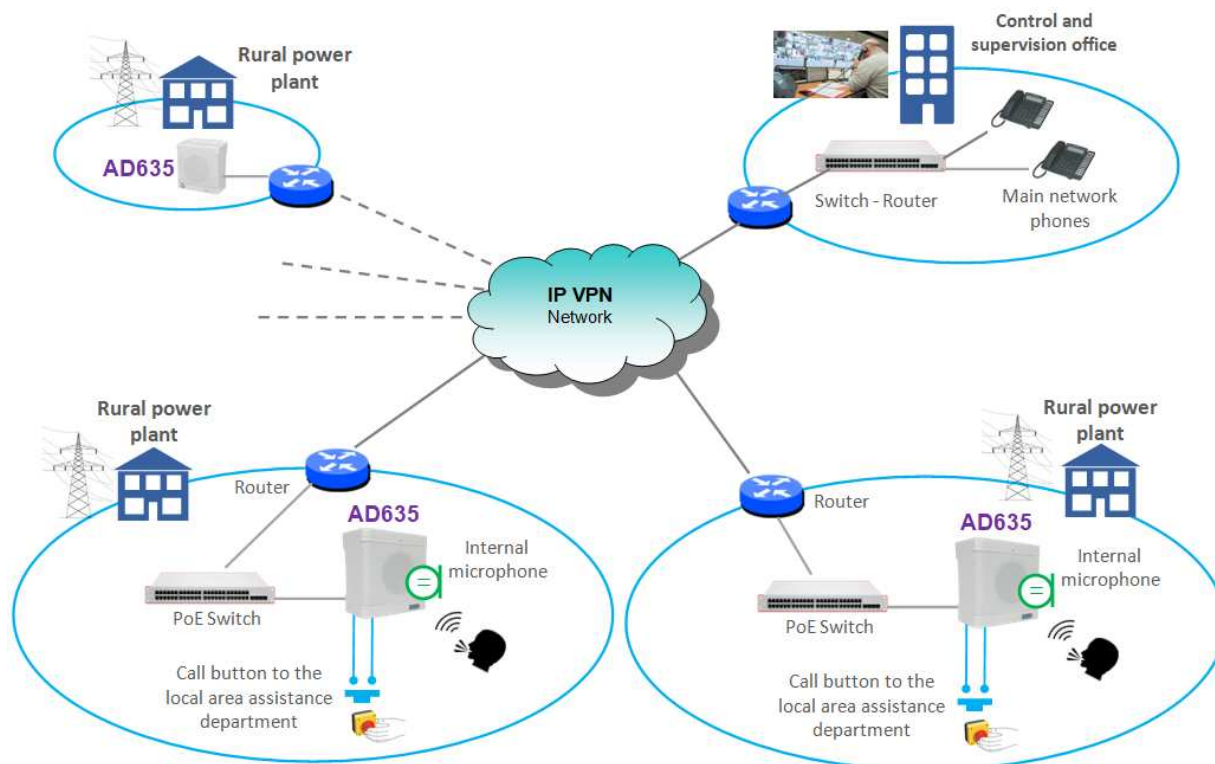
In a railway station there is a need to transmit announcements to passengers for arriving/departing trains and warning notices to people too close to the tracks, the figure shows a typical system realized: an active horn mod. AD630 to which can be connected a passive horn to double the sound power or direct the sound in different areas. In case of need to get the warnings even inside the station locals the passive horn can be replaced with a constant voltage audio line to which connect a number of passive speakers with volume adjustment transformer up to the total usable power of 20W. The microphone base allows to send an alert tone, among seven selectable types, before starting the announcement.

In a medium business there was the need to stream background music in all departments and also the need to give information announcements to customers in an immediate way but also automatically at pre-set times. It was requested not a traditional analog system but something more technological and modern open to future implementations of services and that could operate on the existing LAN network, without the need of other audio cables. For the need were provided:

4 AD633   IP-SIP ceiling-mounted loudspeakers
2 AD634   IP-SIP speakers for rooms without false ceilings
1 AD615/S   IP Multicast Encoder for music and announcements
1 AD696/BM   Microphone base with Chime
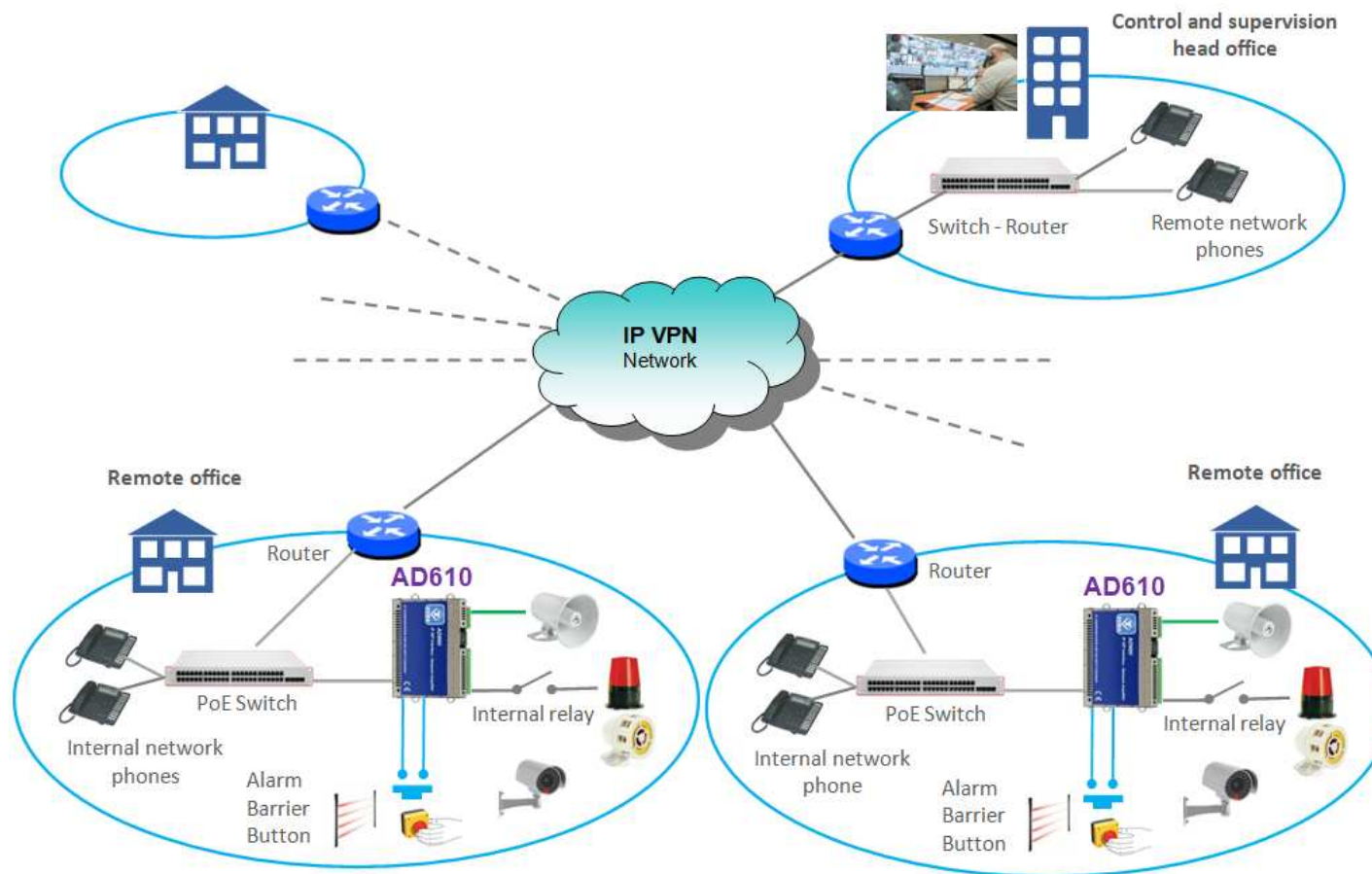7 AA-39P4   PoE power supply for all the supplied systems

In order to generate background music, the client has provided a PC, which is also used for other accounting tasks, from which it plays some preferred Playlist or FM radio in internet streaming, alternatively it also uses an iPod as a music source. The audio output of the PC or iPod is connected to the Encoder AD615/S that sends it to all installed AD600 Series IP loudspeakers.
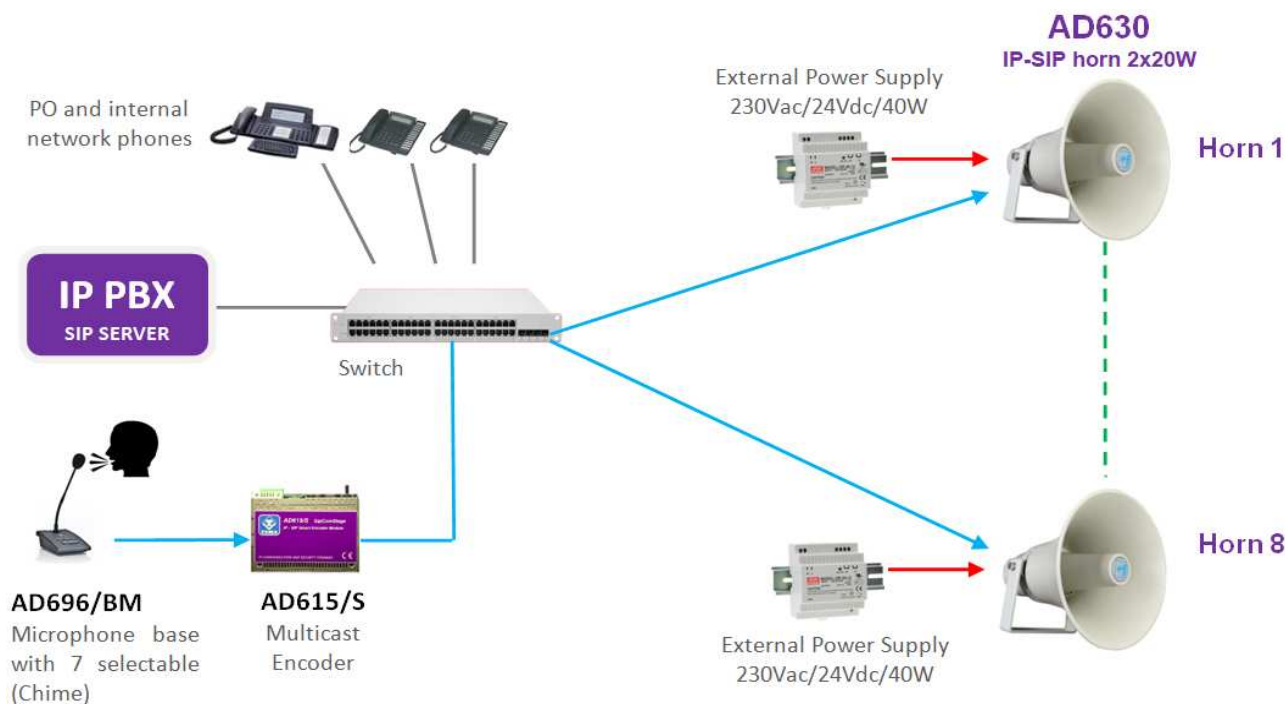
A municipal electricity distribution company based in Northern Italy installed over 40 IP-SIP bidirectional AD635 loudspeakers in as many distribution booths located throughout the territory with the aim of communicating with maintenance personnel during technical interventions. Very often these cabins are located in rural areas where the signal of the GSM network is often reduced or totally absent. Each plant is reached by the data network with a virtual private network (VPN) that is also used as a geographical extension of the IP-PBX of the headquarter and refers, according to the area, to different service personnel, with different telephone numbers, the AD635 systems were registered with a SIP number to the central IP-PBX through the VPN.

Upon arrival of the technician in the booth for the repair of a fault, if it needs support from the headquarters press a button connected to AD635 which establishes a hands free call with the phone number programmed into the system, at the reply, technician and support can communicate hands-free allowing the technician to move freely inside the cabin. The telephone numbers of the support often change according to times and days per week, AD635 handles these situations since it is possible to program different numbers according to times and days per week.

The control and supervision of AD610 devices, and of each product of the SipComStage series, can be implemented in a central control location through appropriate LAN/WAN/VPN settings, in this way it is possible to gather information and interact with all the devices located in each geographical position.

In a mechanical industry in a very noisy department there was the need to communicate with the staff of 8 machine assembly areas without them having to interrupt the work, take off the gloves and go to a telephone station, also needed a warning call with a tone high enough to overcome the considerable noise of the environment. The service was not obtained with the installation of standard telephones. There was the need of a hands-free two-way system of communication and a sound volume that would allow the sound of the telephone call to be heard and which automatically answered the calls establishing a two-way hands-free communication. The company was already equipped with a VoIP telephone system with an IP-PBX. **For the need were provided N.8 AD630 IP-SIP horns bidirectional with microphone and N.8 AA-39E3 230Vac power supply.**

Subsequently the need arose to be able to give general warning announcements on all the installed horns and to be able to generate a warning signal of start and end of the shift schedule. At the plant were added n.1 AD696/BM Microphone base with 7 selectable chime and n.1 AD615 IP Multicast Encoder. In the Encloder AD615/S were added warning tones that are played on all the horns with a daily/weekly time schedule.

School: some applications for increasing productivity and safety

The installation of an IP-SIP speaker mod. AD635 in a classroom allows a series of innovative and low-cost services that increase productivity, communication and security. Here are some non-exhaustive examples of how this new technology can be used.
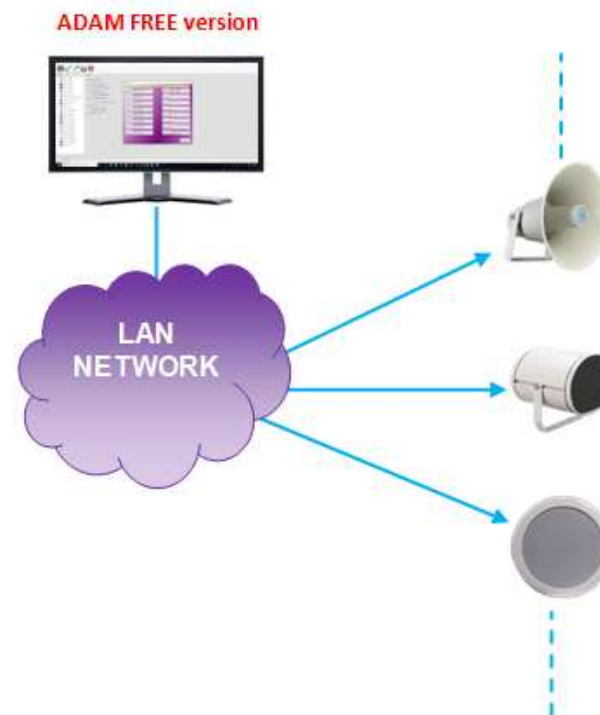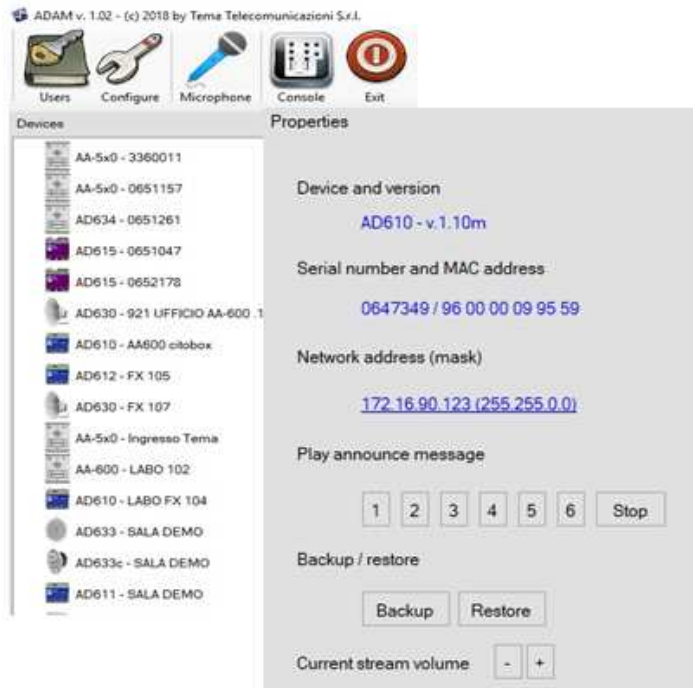

Optional Passive AD335/6TP Speaker

AD635 IP-SIP PoE Speaker

"Push To Talk" control button

Remote lesson application with local control of communication direction

1) **Remote-lessons, "Push to Talk" function:** by establishing a telephone communication with a teacher or a remote interlocutor, the amplified communication audio is broadcasted in the classroom. In order to cover the noise of the students of the class (and any uncontrolled comments) the communication is commanded by a special button connected to AD635 to allow communication from the class to the remote interlocutor exclusively when the button is pressed.

2) **Communications:** The school director can send an announcement or make an audible speech, the secretariat can launch service messages

3) **Announcements at scheduled times:** a sound/message of beginning and end of lesson can be transmitted, notices of return to class, etc.

4) **Streaming of multimedia contents:** from a centralized location with the Tema "ADAM" software, it is possible to transmit pre-recorded lessons, podcasts, and other multimedia contents in the classrooms.

5) **Safety:** from all the classrooms when an alarm button is pressed, an emergency/warning call can be made to the security personnel in charge and a signal or an alarm message can be streamed in the local area.

6) **IP-PBX integration:** it is possible to communicate with every single classroom from any extension telephone in the internal network of any technology.

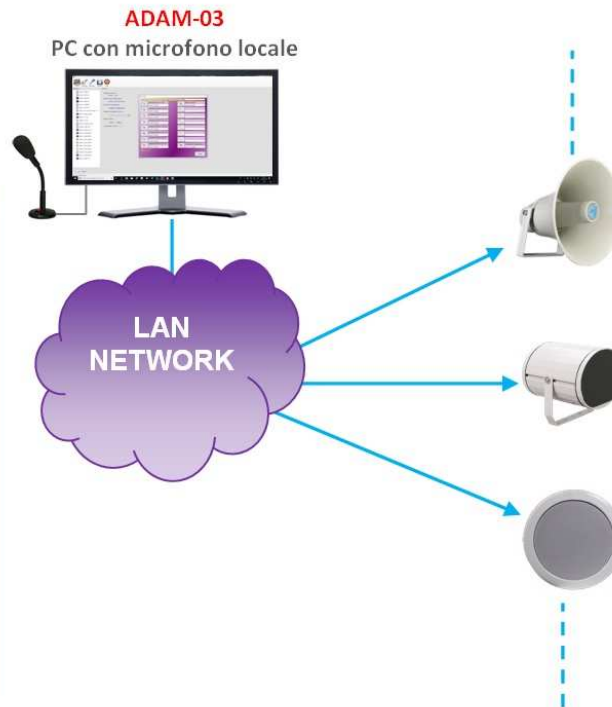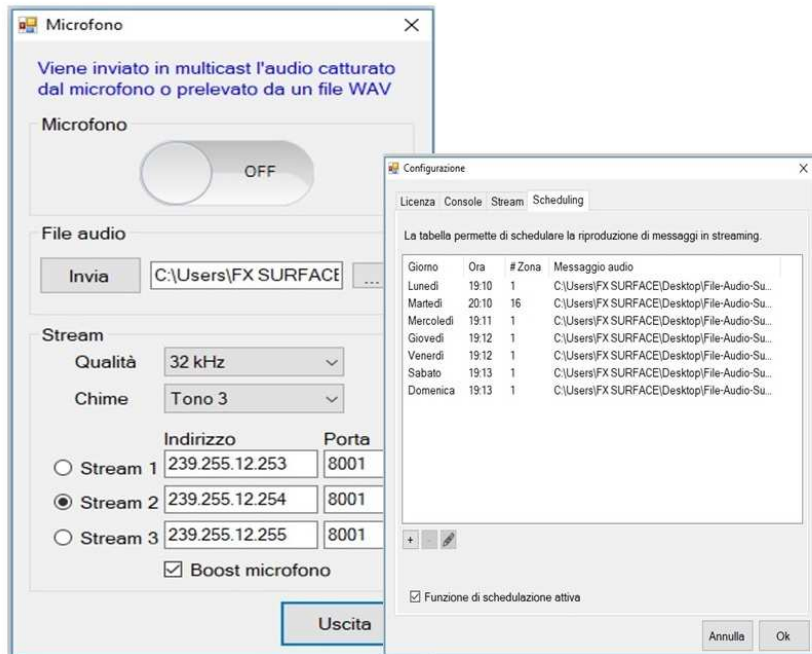**ADAM Audio Domain & Access Management Software: FREE version**

Administrator monitoring and management of all devices in the network

✓ **Search and display of AD600 devices on the network**

✓ **Main device parameters display**

✓ **Configuration Backup and Restore**

✓ **Audio volume adjusting**

Sending microphone announcements to 3 zones, scheduling, sending audio files, without IP-PBX.

ADAM-03
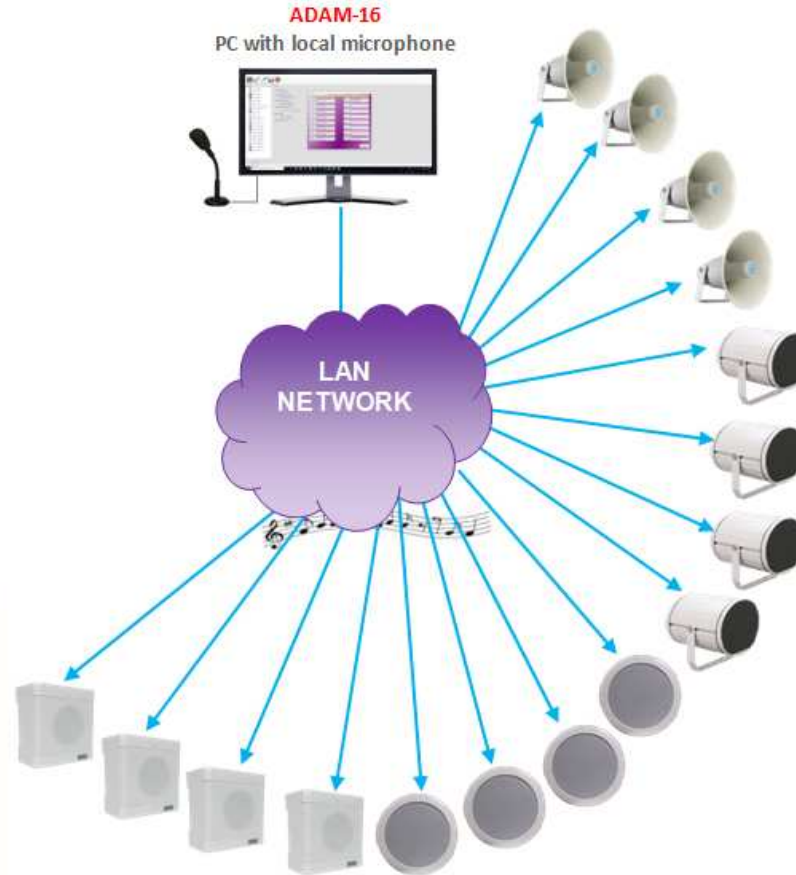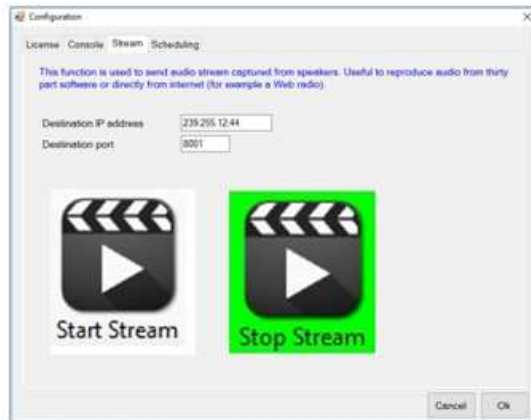PC con microfono locale

LAN NETWORK

In many environments where there is a traditional analogue PBX, either completely absent, or simply do not want to extend the existing VoIP PBX with additional SIP licenses, it is possible to realize a uniquely unidirectional audio announcements system in a "stand alone" way simply using the ADAM-03 software installed on a PC where the Tema microphone base mod. AD696/AA is connected. The realization is simple, immediate and cheap, without the need of new cables because the existing LAN is used.

NOTE: it is not necessary to upgrade to higher ADAM versions in case of installation of many IP-SIP loudspeakers as long as the 3 zones are not exceeded since more terminals can be configured on each single zone.

➢ **Announcements from local microphone with Chime**

➢ **Sending of pre-recorded audio files without microphone, no limits**

➢ **Sending of pre-recorded audio files at scheduled times or days**

Sending announcements from a local microphone on 16 zones, Multicast Streaming Generator

ADAM-16
PC with local microphone

LAN NETWORK

The **ADAM-16** version, in addition to having all the performance of other versions, allows to extend the zones up to 16 and is equipped with a practical Console window that significantly speeds up the sending of announcements and prerecorded audio files, ideal for applications where it is needed to have an easy view of the areas and operate with ease and speed.
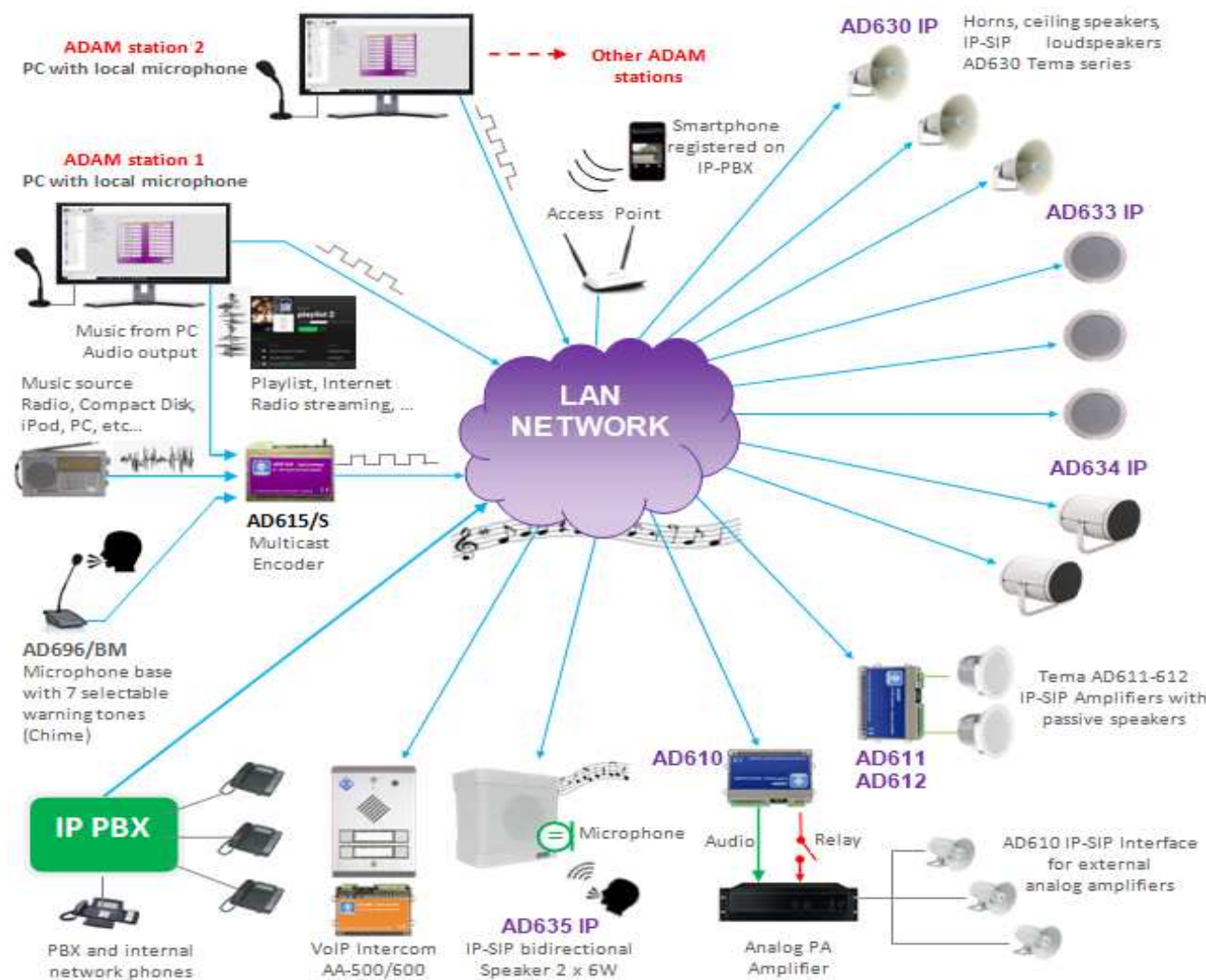
Generation of 2nd Multicast Stream Audio (Music)
Adam is able to capture in digital format any audio content played at that moment on the PC capturing it from its sound card, in this way it is possible to activate a second Multicast Stream that can be sent to a specific IP address normally used by receivers for background music. For example, if the PC is playing a radio or TV channel streamed from the internet, the content will be sent on the established Multicast channel and played by all the Tema AD600 series decoders in the LAN network enabled for the service.

With ADAM, the PC also becomes a multimedia station for the transmission of music and media content on the LAN.
Internet Radio and TV streaming, Youtube, Spotify, iTunes, Playlist, CD players, USB, local Smart Cards, etc.

For large and articulated plants

ADAM station 2
PC with local microphone

Other ADAM stations

AD630 IP — Horns, ceiling speakers, IP-SIP loudspeakers AD630 Tema series

Smartphone registered on IP-PBX

Access Point

ADAM station 1
PC with local microphone

Music from PC Audio output

AD633 IP

Music source Radio, Compact Disk, iPod, PC, etc...

Playlist, Internet Radio streaming, ...

LAN NETWORK

AD615/S Multicast Encoder

AD634 IP

AD696/BM Microphone base with 7 selectable warning tones (Chime)

IP PBX

PBX and internal network phones

VoIP Intercom AA-500/600

AD635 IP IP-SIP bidirectional Speaker 2 x 6W

Microphone

Audio   Relay

Analog PA Amplifier

AD610

AD611 AD612

Tema AD611-612 IP-SIP Amplifiers with passive speakers

AD610 IP-SIP Interface for external analog amplifiers

Base Services (Without IP-PBX))

• **Different Multicast music according to zone preferences**

• **Microphone alert messages by zone or all zones**

• **Messages from IP-SIP TEMA AA-500/600 series Intercom**

• **Multicast messages from a suitable SIP phone with function keys**
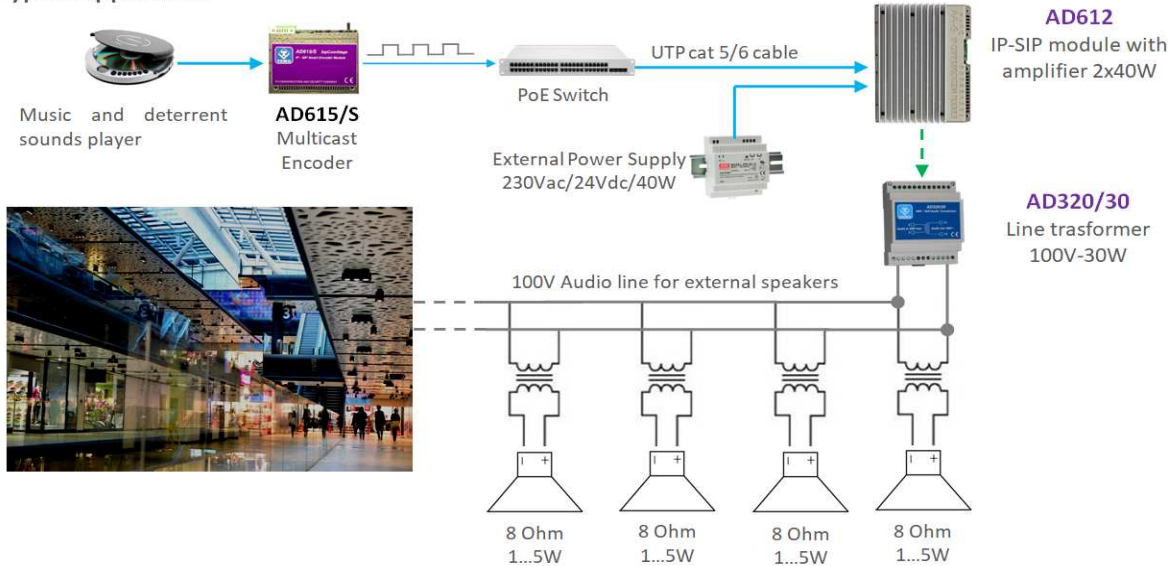
• **SIP calls in P2P (Peer to Peer)**

Additional services in the presence of an IP-PBX

• **Bidirectional telephone call on each SIP loudspeaker**

• **Telephone call from smartphones registered on the IP-PBX**

• **Messages from smartphone with iOS/Android APP or softphone**

• **Night call ringtone repetition (Night Ringer)**

It is possible to insert multiple **AD615/S encoders** in the network, without limits, each of which transmits a musical sound stream on a specific Multicast channel, in this way the IP-SIP speakers can be tuned to different musical contents according to the needs and preferences of the environments to be sounded. .

AD610 allows to interface a traditional amplification system to the LAN network while the IP **AD611-612** amplifiers in the same way allow to drive the speakers and the passive horns of the previous traditional system.

Typical application

Music and deterrent sounds player

AD615/S Multicast Encoder

PoE Switch

UTP cat 5/6 cable

External Power Supply 230Vac/24Vdc/40W

AD612 IP-SIP module with amplifier 2x40W

AD320/30 Line trasformer 100V-30W

100V Audio line for external speakers

8 Ohm 1...5W   8 Ohm 1...5W   8 Ohm 1...5W   8 Ohm 1...5W

In order to discourage the camp of groups of young people near shops, shopping malls, public places and perimeters of companies, the use of specific audio deterrents can be used as needed. Numerous research has shown that for young people and adolescents classical music is unbearable and therefore tend not to stay long in a place where this music is broadcasted. In the United States, a restaurant chain has installed outside the local loudspeakers that broadcast classical and lyrical music to ward off groups of people stationed outside compromising the business and often leading to more serious crime actions (See links below). The technique is also applied in the perimeter of companies or establishments, in the corridors of railway and underground stations, near condominiums, etc. The type of music and sounds is used on the specific need.

5 things to know about fighting crime with classical music - Do the sounds of Bach and Vivaldi really have the power to combat loitering and other petty offenses?
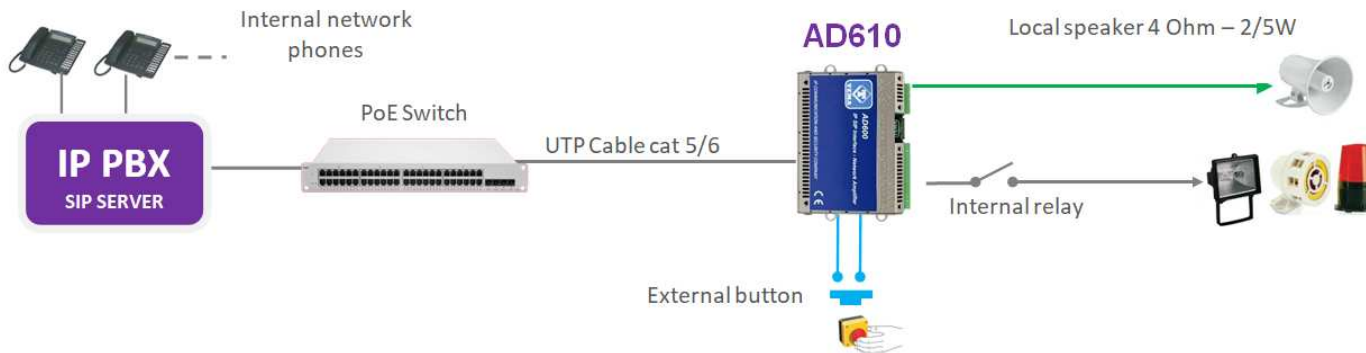https://www.policeone.com/bizarre/articles/475738006-5-things-to-know-about-fighting-crime-with-classical-music/
Classical music still effective at dispersing loitering teens
http://latimesblogs.latimes.com/culturemonster/2011/04/classical-music-still-works-at-dispersing-loitering-teens-.html
Does Classical Music at Train Stations Really Deter Crime?
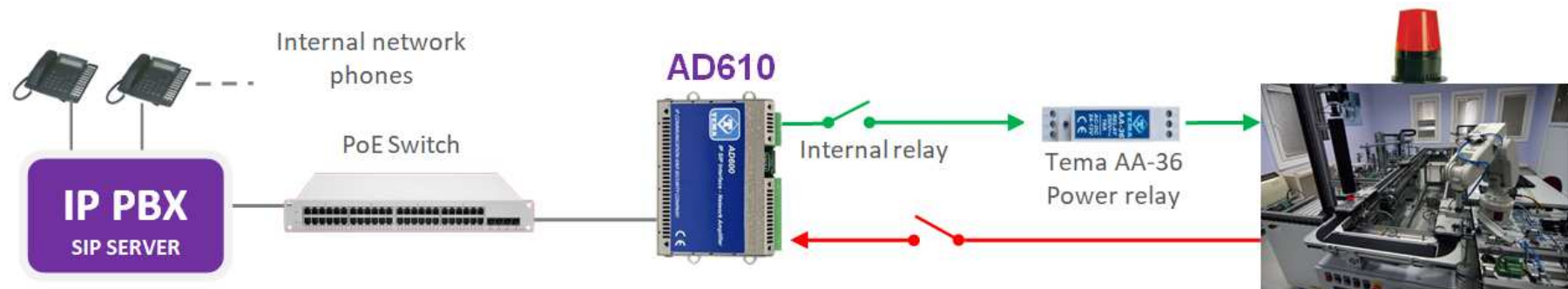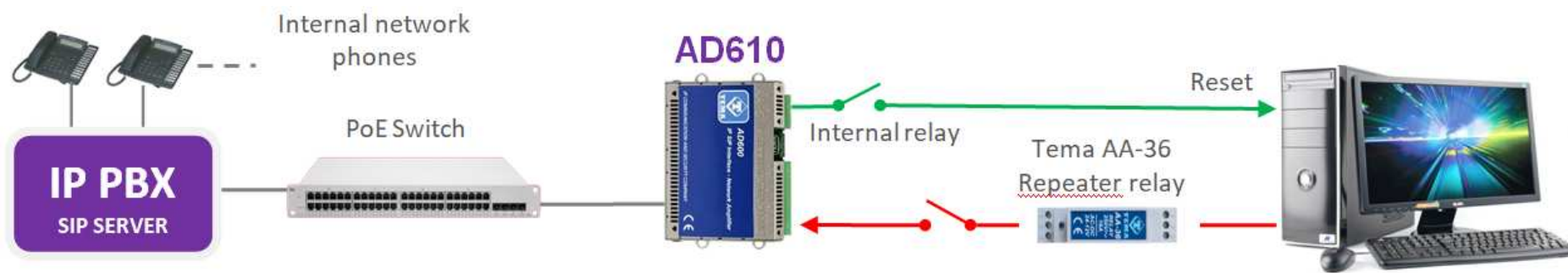https://www.wqxr.org/story/281248-does-classical-music-train-stations-really-deter-crime/

- Bathroom and Security alarm for Hotels
- Banks and Financial Institutions
- Machinery Supervision
- Remote drives via the network
- Security in Courts, Prisons
- Security in Educational institutions
- Safety of people and things
- Alarms transmission via the network

By connecting a button or an external contact, AD610 it can call a phone number programmed to alert the event with a warning specific message. The remote operator can acknowledge the event and break the repetition with a code, also can remotely activate a relay. By connecting a speaker to AD610 it is possible to play a message or a prerecorded sound file before sending the call.
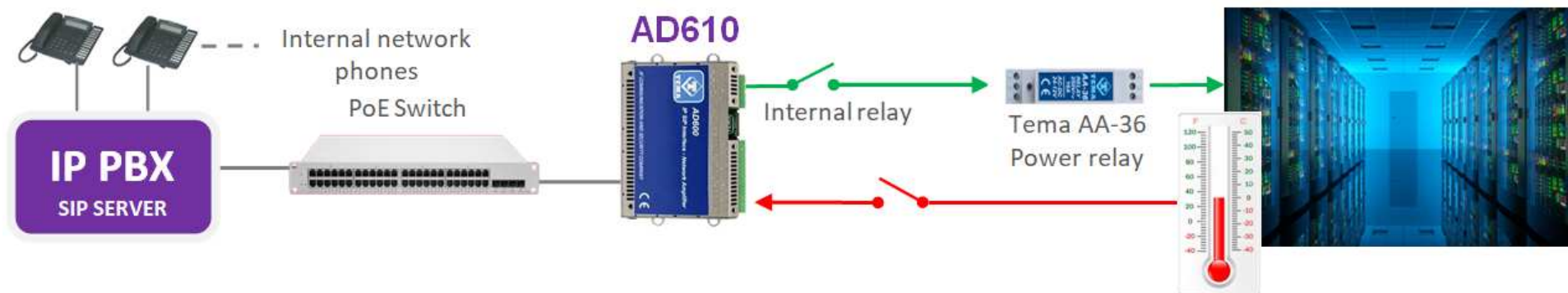
This function is ideal in all those cases of emergency, call for help or information, alarm systems, video surveillance, machine controls etc.. in any geographical point of the network. The service can be used in a "fair" way by banks and security services with a hidden button.

AD610 warns with a SIP call when an industrial machinery is faulty, the called operator can activate a relay for an attempt to reset the machine.
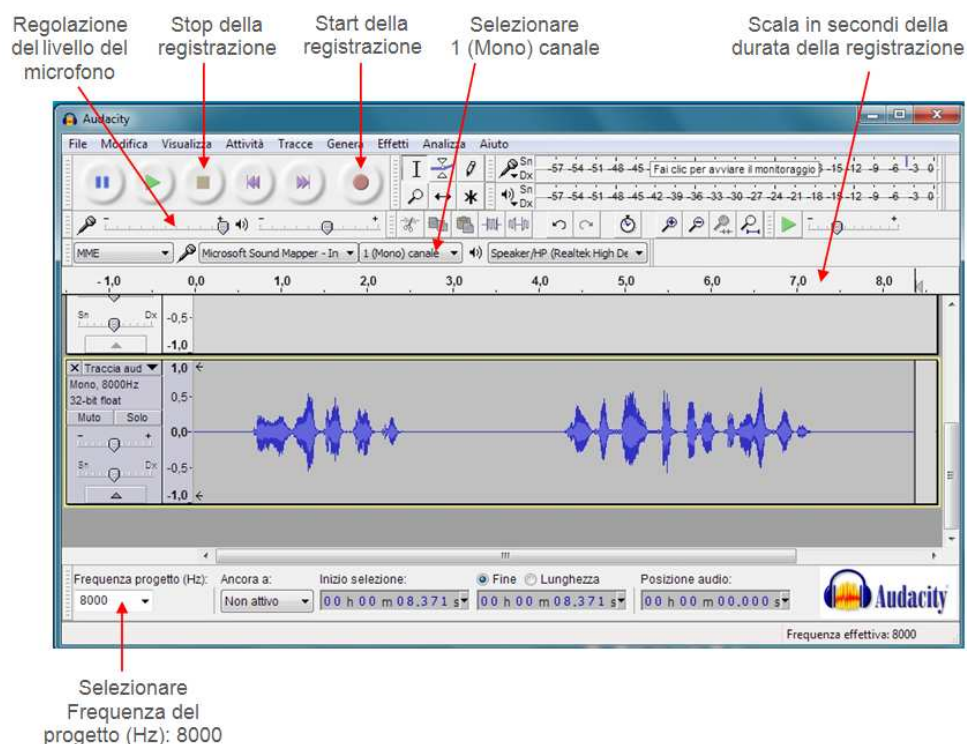
AD610 warns with a SIP call when a computer or a server is faulty, the called operator can activate a relay for reset.

AD610 warns with a SIP call when the temperature in a server room is faulty, the called operator can activate a relay for re-store the air conditioning system.

For recording your audio files, it is possible to use one of the free software such as AUDACITY downloadable for free from the link http://www.audacityteam.org/ remembering to record and save audio files in .WAV format at 8KHz-16Bit Mono, other audio file formats will not work with the AD600 series devices. Below there are some information about basic operations. For more information on the AUDACITY program, please refer to the manufacturer program guide.

TEMA provides you with its own internal recording studio for the creation of professional prompts with multilingual male and female speakers from texts on customer specifications.

Customer support

TEMA offers advice and expertise to the customer to facilitate the design of new installations or retrofit old plants. Do not hesitate to contact us for any need.

- Advice and offers on individual products and projects
- Possible on-site inspection and acoustic measurements
- Project based on the layout of the rooms and specific services
- Post-sale assistance
- Continuous updating of products and software performance
- 24 month warranty on the supplied products

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