



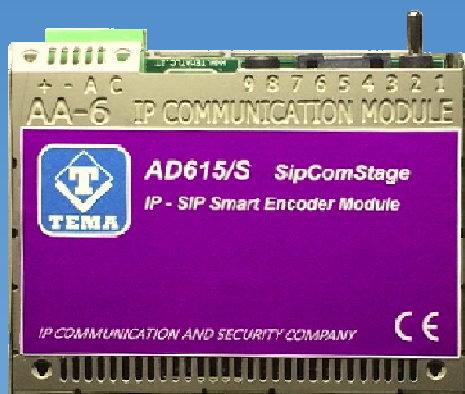
TEMA TELECOMUNICAZIONI

"IP COMMUNICATION AND SECURITY COMPANY"

WWW.TEMATLC.IT

AD615/S

*Analog/Digital Encoder
for Multicast Audio Streaming*



Audio Over IP Network Series **"SipComStage"**

Products for VoIP SIP LAN networking Communications, Paging Amplifiers Systems and Audio Applications. Zone Announcements, Night Ringer, Multicast general call, Background music, Standard SIP call or Emergency call, SD memory with pre-recorded messages, Relays for LAN drives.

PRODUCT MANUAL

Version HW 1.0 - Version SW 1.10



Revision	Date	Revision reason	Prepared	Checked/Approved
2	19/04/2018	Update	MM, DP	DP, FL



DICHIARAZIONE DI CONFORMITÀ CE

DECLARATION OF CONFORMITY CE

We, **TEMA TELECOMUNICAZIONI SRL** Via C. Girardengo, 1/4 - 20161 MILANO

declare under our sole responsibility that the product:

Product name **Encoder Multicast IP PoE**
 Trade name **TEMA TELECOMUNICAZIONI Srl**
 Type or model **AD615/S**
 and accessories --

to which this declaration relates is in conformity with the essential requirements and other relevant requirements of the R&TTE Directive (1999/5/EC, 2006/95/EC, 2004/108/EC).

The product is in conformity with the followings standards and/or other normative documents:

HEALT & SAFETY	EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011
EMC	EN 55022:2010, EN 55024:2010, EN 61000-3-2:2006 EN 61000-3-3 :2008

MILANO, 30 October 2017

TEMA TELECOMUNICAZIONI SRL
D. Pontillo

I. I MPORTANT INFORMATIONS REGARDING THE RECOVERY AND RECYCLING OF THIS ELECTRONIC DEVICE

The crossed-out wheeled bin symbol below indicates that this electronic equipment is intended to be disposed in a separate collection and not in an unsorted municipal waste, in order to provide for the treatment of WEEE (Waste Electrical and Electronic Equipment) using best available recovery and recycling techniques. Specific treatment for WEEE is indispensable in order to avoid the dispersion of pollutants and other hazardous substances into the waste stream, while recycling leads to reduction of disposal of waste and the negative impacts on environment and human health. That is, priority is given to reuse of WEEE in its components, subassemblies and consumables. As the final holder, the user has an important role in contributing to reuse, recycling and other forms of recovery of WEEE and is responsible to return this waste in the collection facilities set up by EC Member States and to fulfill other duties in compliance with Directive 2002/96/EC and local laws.



TEMA TELECOMUNICAZIONI is a certified company



UNI EN ISO 9001:2015

RECOMMENDATIONS

1. It is recommended to read this entire manual before proceeding to the installation of the device.
2. The installation and commissioning of the device can only be performed by specialized technicians.
3. The device is accurately manufactured and tested. In any case, the product is not recommended for use where an error of operations can cause property damage and/or injury to persons.
4. It is expressly not recommended maintenance inside the device which must be carried out by Tema Telecomunicazioni, the removal of the closures will invalidate the warranty and makes accessible internal parts with risk of electric shock.
5. Tema Telecomunicazioni accepts no responsibility for damage to property and/or persons resulting from incorrect use of the equipment or by procedures that do not comply with the instructions in this manual. Tema Telecomunicazioni reserves the right to make modification to the technical and functional specifications at any time and without any notice.
6. Products powered via PoE (Power over Ethernet) may only be connected with cables coming from the internal network company (inside the building), are not allowed connections LAN cables coming from outside the building.
7. Use for this device only and exclusively original spare parts and consumables supplied by Tema Telecomunicazioni. The company is not responsible for damage caused by the use of materials not supplied by the same.
8. Do not expose the unit to direct sunlight, protect from heat, dust, humidity and chemicals.
9. Tema Telecomunicazioni reserves the right to vary the product characteristics for improvement without prior notice. Check the WWW.TEMATLC.IT website for any updates to the latest firmware, manuals, and technical documentation.
10. This document is property of Tema Telecomunicazioni, It is forbidden any duplication and reproduction, even partial, as well as storage on any medium without written permission of Tema Telecomunicazioni.



This symbol in the descriptions indicates a general warning or a damage danger to equipment or people.



This symbol in the descriptions indicates useful information or a suggestion for the optimization of the device functionality.

INDEX	PAGE
1. PRESENTATION	5
2. FEATURES	7
3. PACKING LIST	8
4. TECHNICAL SPECIFICATIONS	8
5. OPERATION	9
5.1. SIMPLE APPLICATION WITH ENCODER AD615/S.....	9
5.2. APPLICATION OF THE ENCODER AD615/S WITH IP-PBX.....	9
5.3. EXTENDED AD615/S ENCODER APPLICATION	10
6. OPERATING MODES	11
6.1. MULTICAST AUDIO STREAMING	11
7. INSTALLATION	12
7.1. MOUNTING AND SYSTEM POSITIONING	12
7.2. CONNECTION	12
8. PROGRAMMING	14
8.1. PREPARATION FOR THE SYSTEM PARAMETERS PROGRAMMING.....	14
8.2. ACCESS TO PROGRAMMING.....	15
8.3. NETWORK PARAMETERS.....	16
8.4. AUDIO CHANNELS	17
8.5. MESSAGES	18
8.6. AUTOMATIC ANNOUNCEMENTS	18
9. MAINTENANCE	20
9.1. SYSTEM.....	20
9.2. LOGIN CREDENTIALS	21
9.3. DIAGNOSTIC LOGS	21
10. APPENDIXES	22
10.1. APPENDIX 1: USE OF THE VLC MEDIA PLAYER SOFTWARE AS AN AUDIO FILES PLAYER.....	22
10.2. APPENDIX 2: USE OF THE AUDACITY SOFTWARE FOR AUDIO FILES RECORDING.....	23
10.3. APPENDIX 3: CABLING OF A UTP RJ45 NETWORK CABLE ACCORDING TO THE STANDARD EIA568B.....	24

1. PRESENTATION

AD615/S Digital IP Encoder with Integrated PoE power supply converts an analog audio signal from any external source into a digital audio streaming in Multicast channels for audio signal distribution via LAN. AD615/S is ideal for background music streaming on the LAN in any environment (offices, factories, public places and outdoors) with the ability to make announcements in the same environments.

To the 3.5mm jack port of the device it is possible to connect FM radio tuners, CD-DVD players, MP3 players, Smartphones, iPods, Tablets, PC Sound Blaster sound card outputs etc. to convert analog audio to a digital audio streaming.

AD615/S also has an RJ45 socket with proprietary connections for an external microphone or a microphone base (only TEMA models) with which it is possible to launch Multicast general call on all AD600 series amplifiers and IP speakers connected to the network.

Audio Streaming Codec

AD615/S offers the possibility to choose the most appropriate codec according to the audio quality and the required LAN bandwidth. The following codecs are available: G711 (a/μ-law), G722, 16kHz/24kHz/32kHz Proprietary Linear for the highest audio quality.

Multicast Streaming Audio for music and announcements

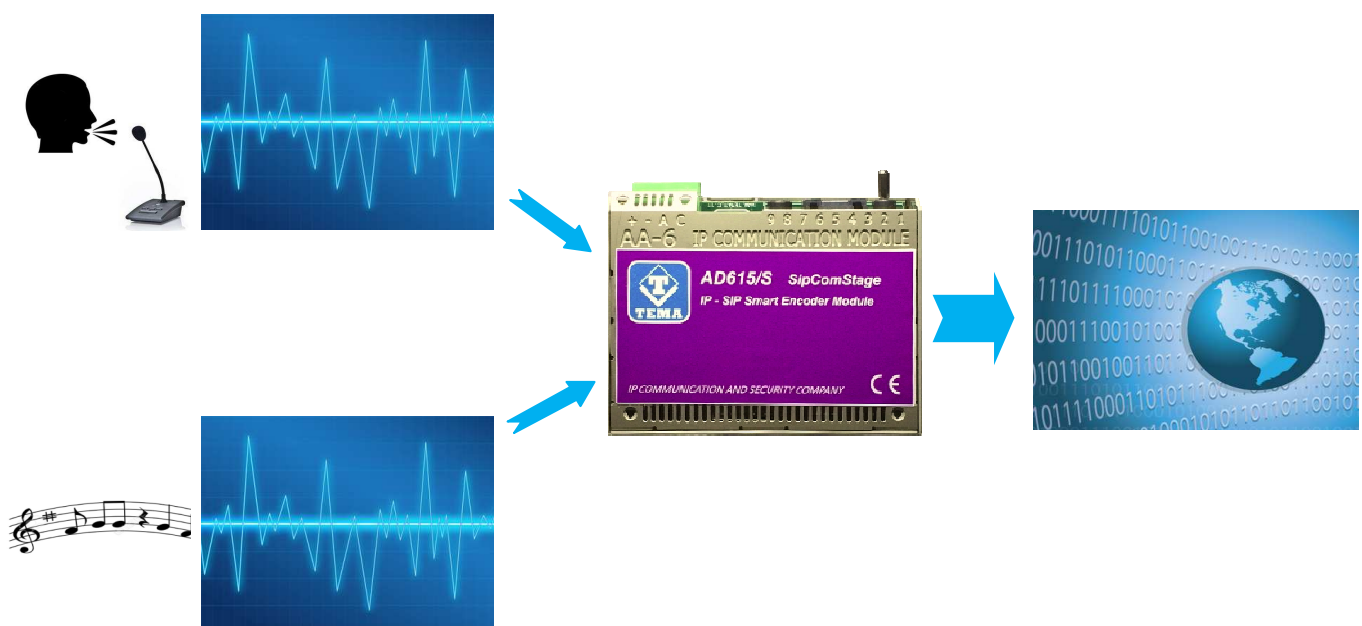
AD615/S can route the analog audio to its input to 2 multicast channels selectable by the front lever.

Programming

Programming is done remotely thanks to the integrated web server with security password. Total remote management for programming, configuring, replacing the firmware release, configuration backup and restore, system reboot.

Power Supply

AD615/S can be powered directly on the network LAN cable from a standard 803.af PoE injector. If the PoE power is unavailable, it is possible to power AD615/S with a 230Vac/12Vdc-1,0A power adapter (for example the TEMA model AA-39DL plug-in, the model AA-39D1A for DIN rail, the model AA-39P4 Injector PoE). The external power supply is NOT included.



VoIP SIP Amplifiers-Speakers Products and Accessories of the AD600 “SipComStage” series

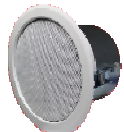
AD630 IP-SIP PoE 25W Horn Speaker with 40W internal amplifier (2x20W) IP65 protection.



AD635 IP-SIP PoE 12W speaker for wall mounting with the possibility of integrating a PoE injector adapter.



AD633 IP-SIP speaker 12W PoE open-to-ceiling version.



AD633C SIP IP-12W PoE Speaker ceiling version with IP54 flameproof cover.



AD634 IP-SIP 20W PoE Sound Projector Speaker metal version



AD610 2X2W PoE IP-SIP Amplifier Module, External Amplifier Adapter with Sound Isolation Transformer. Directly pilot external power amplifiers or 8 Ohm external passive speakers.



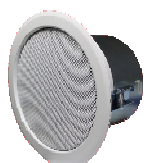
AD611 IP-SIP PoE 10W Amplifier Module (2X5W). Directly pilot 8 Ohm external passive speakers.



AD612 IP-SIP PoE 40W (2x20W) Amplifier Module when powered with an external power supply. Directly pilot 8 Ohm external passive speakers.



AD615/S Audio Encoder Module from analog to digital on LAN Network in Multicast/Broadcast Channels.



AD333/12XTP Passive 8 Ohm 12W speaker with anti-flame cover (AD333/12TP without cover), internal transformer for 100V audio line. Ideal for connecting to AD610-611-612 or as 2nd speaker to the AD63x series IP-SIP speakers.



AD335/06TP Passive 8 Ohm 6W speaker with 100V audio line transformer. Ideal for connecting to AD610-611-612 or as 2nd speaker to the AD63x series IP-SIP speakers.



AD330/25T Passive horn speaker 25W 8 ohm with transformer for 100V audio line. Ideal for connecting to the AD610-611-612 modules or as 2nd speaker for AD63x IP-SIP speakers.



AD330/xx Are available Speakers of different power, Horns and Loudspeakers for flush and ceiling mount.

**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 /-E6V**

DIN Power Supplies 220Vac/24Vdc-1,5A 220Vac/24Vdc-2,5A.



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-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.



AD696BM Desktop microphone base with 7 selectable Din-don



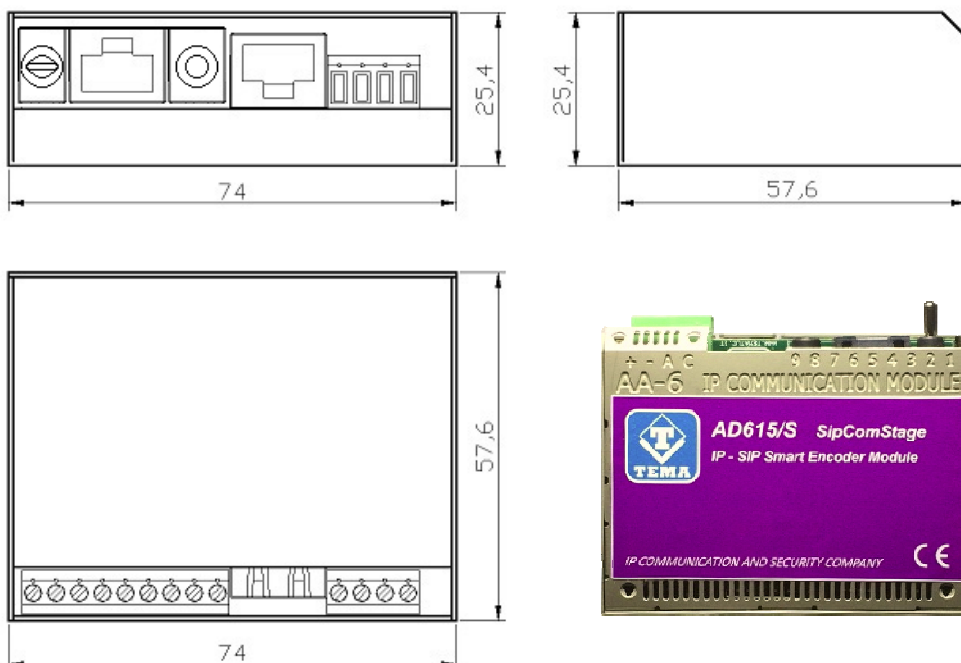
AD696B Simple Desktop microphone base (NO Din-don)

*** PRODUCT LIST MAY BE INCOMPLETE, PLEASE REFER TO TEMA WEB SITE FOR NEWS ***

2. FEATURES

- Analog/Digital Converter Encoder Function for 2 Channel Multicast Audio Streaming (Alternative)
- Music channel input from external analogu player with 3,5mm jack
- Microphone/microphone base input, RJ45 plug with proprietary connections
- Microphone volume adjustment
- 3-position switch lever to enable/disable LAN sending of digitized signal
- Selectable codecs: G711, G722, Linear 16kHz, 24kHz, 32kHz
- Power supply via PoE (Power over Ethernet) or external power supply, at the same time
- Programming via the Web Interface with password protection
- Possibility of software / firmware update via LAN
- Integration with the local LAN, 100BaseT Ethernet LAN port with RJ45 connector
- Integrated 802.af PoE, a single UTP cable for connection
- Extremely compact dimensions 74x58x25 mm
- Wall mounting, table/shelf and DIN rail
- Audio streaming with high quality codecs
- Possibility of diffusing pre-recorded announcements at pre-established times (up to 5 for each day of the week)
- Possibility of diffusing a pre-recorded daily announcement, at a set time or manually controlled, with programmable interval and repetitions

AD615/S - views and dimensions



3. PACKING LIST

The systems are supplied with the parts included in the following list:

- One AD615/S device
- System documentation manual (this one)
- A CD-ROM with complete documentation
- Cavo UTP Patch Cord LAN 1.5 metri
- UTP Patch Cord LAN cable 1.5 meters
- DIN rail kit (plastic adapter, 2 screws and 2 washers for fixing the unit, DIN bracket, 2 dowels and screws)
- 4 self-adhesive foots for table or shelf resting
- 1 cable for audio stereo input audio jack 3,5mm / 2 RCA male
- 1 cable for audio stereo input audio jack 3,5mm / stereo jack 3,5mm

4. TECHNICAL SPECIFICATIONS

LAN	TCP/IP Network 10/100BaseTx
Connection	SIP Server (IP-PBX) or P2P (Peer To Peer)
Protocols	SIP 2.0, RFC 3261
Audio communication	Monodirectional, from AD615/S to receiver devices
Bandwidth	80Hz – 20kHz
RTP Multicast audio Streaming	G711 μ , G711a, G722, L16 from 16 to 44 kHz
External audio input	Stereo 3.5 mm stereo jack connector. Isolation via internal system transformer, maximum signal level/impedance of 2Vpp/600 Ohm.
Microphone input	Proprietary connector, RJ45. Electret microphone with power supplied from AD615/S
Power Supply	PoE, PoE Injector and/or external Ac/Dc power supply
PoE	802.3af class 0 12,95W
External Power Supply (Opt.)	230Vac/12-24Vdc-1A
Technology	IMX25 400MHz microprocessor
Memory	256MB Ram, Micro-SD Flash 2GB
Programming	practical Web interface and password
Installation	wall, table, standard DIN rail
Storage temperature	from -20° to +65°C
Operating temperature	from -20° to +55°C
Relative humidity	95% non-condensing
Dimensions	74x58x25mm
Weight	200gr
Warranty	2 years, possibility of extension (Option)
Compatibility	CE, ROHS

5. OPERATION

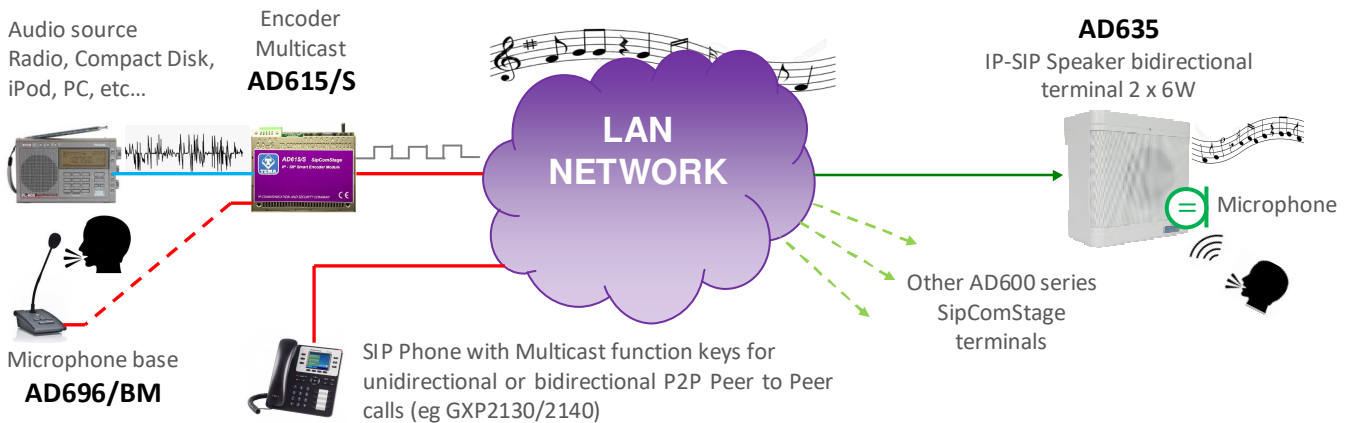
The device allows the sound broadcast in "streaming" Multicast. RTP audio to be sent over the network is taken from the analog inputs of the system (Jack 3.5mm and proprietary microphone RJ45 socket) and sent to the LAN. There is therefore a dedicated input for ambient music streaming and an input for a microphone.

In the Multicast mode, multiple remote devices connected to the same LAN where AD615/S is connected can communicate simultaneously the same transmitted audio content, useful for launch pre-recorded announcements or background music. Once programmed, in stand-by, the system waits for drives.

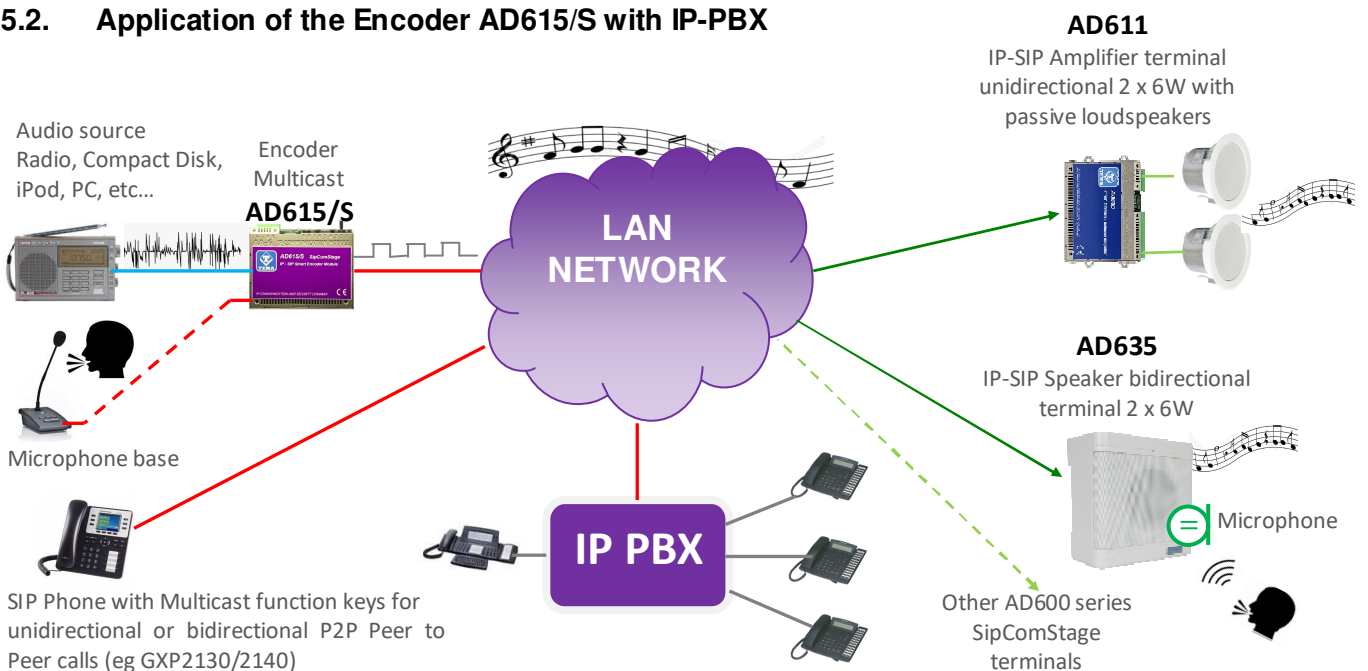
AD615/S will send the analog audio present at its inputs to the two multicast channels selectable from the front lever. With the lever in the center position, the device does not send anything. By activating the lever in the stable position, the audio provided on its input jack (typically ambient music) will be transmitted, continuous transmission. By moving the lever to the momentary position, however, the audio received directly from the microphone connected to the system on the proprietary RJ45 connector (eg, short operator announcements) will be transmitted.

With the optional microphone base, the operator who has to launch warning messages will operate directly on the table microphone base and no longer by the AD615/S system lever. The microphone output volume is easily adjustable with a trimmer located on the left side of the AD615/S (to better suit the various types of electret microphones).

5.1. Simple application with Encoder AD615/S

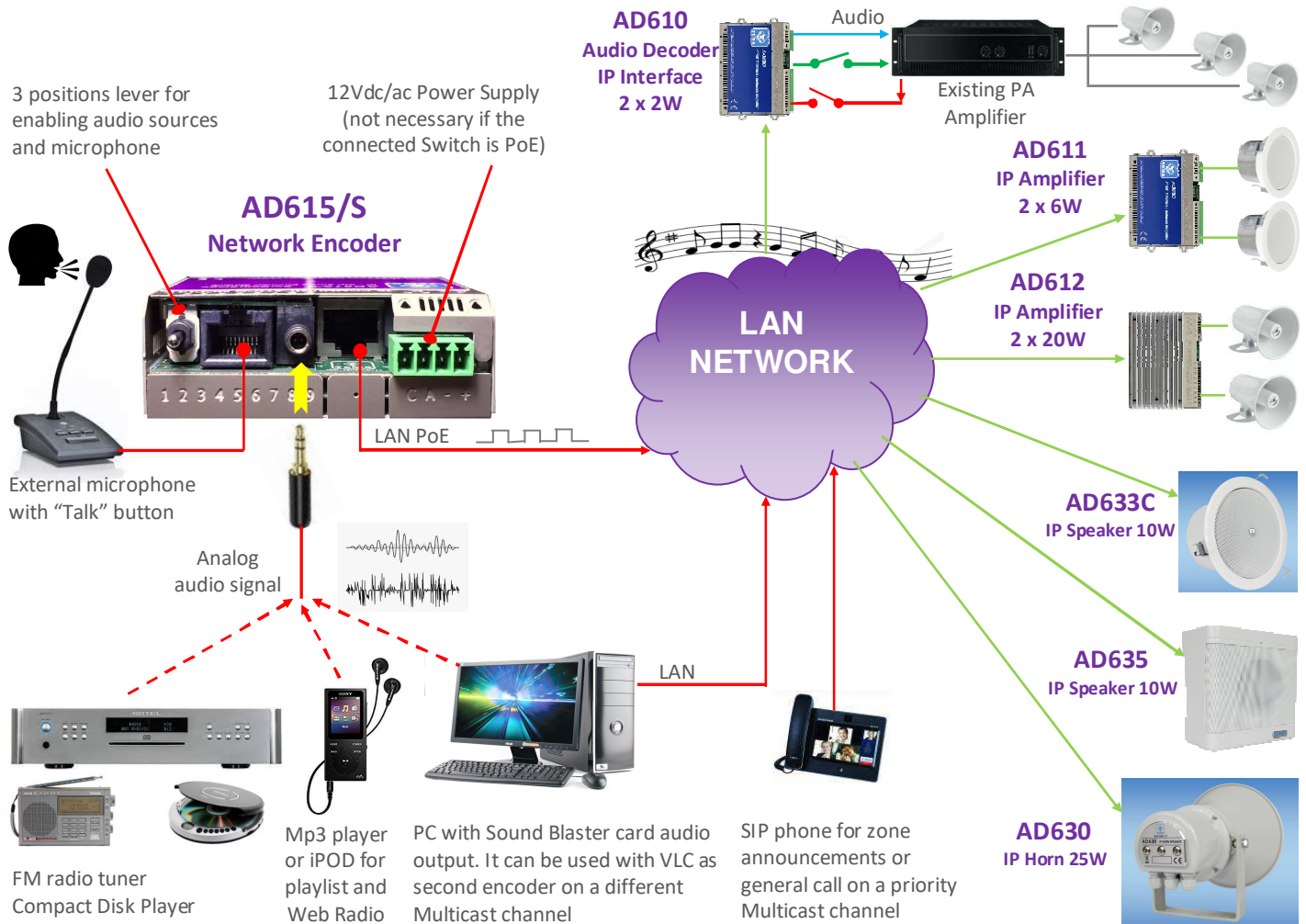


5.2. Application of the Encoder AD615/S with IP-PBX



5.3. Extended AD615/S Encoder Application

The picture below shows a more complete scenario of possible realization of a plant.



Starting from a musical sound source like a CD player or other, the analog signal enters the audio input jack of the AD615/S (the one used for the ambient music broadcast). The signal must be of "line" level like a typical output of a non-amplified stereo player. The volume is adjusted in the external music source.

WARNING: do not connect to this input outputs from amplifier equipment or devices that directly pilot a speaker, the levels would not be adequate for the correct operation of the system and you may get poor quality audio quality or you can damage AD615/S.

By moving the system lever from the center (no transmission) to the top position, AD615/S begins to encode the audio from the jack input and transmit it to one of the selected channels for LAN broadcast.

At the RJ45 proprietary input (the one used to connect a microphone base), is taken instead the audio of an electret microphone, to be used for the transmission of announcements by an operator. The microphone is powered directly from AD615/S (note that it is not a Phantom power, suitable for commercially available microphones, then it is necessary to have the accessories provided by Tema for generating announcements messages).

To broadcast the message (which AD615/S will send on the second address/channel that has priority over music) it is necessary to move the system lever down and keep it in this position for the duration of the announcement. With the microphone base, instead, use the suitable control buttons.

The various AD600 systems connected to the network and set to receive the streaming audio encoded by AD615/S will reproduce the sound from the sources on the various loudspeakers set up in the room to be sonorized.

6. OPERATING MODES

6.1. Multicast Audio Streaming

In a LAN network, the Multicast term indicates the possibility to distribute an information like data, audio or video, to a group of IP terminals of the Ethernet network. For Multicast are used class D IP addresses and they range from 224.x.x.x to 239.x.x.x. In our case AD615/S is able to transmit multicast audio starting from its analog inputs.

The audio can be generated from a PC software application (for example VLC) or directly from a CD or tape player. It is possible to program up to 16 audio receive addresses in the network terminals (AD6xx), each with its own priority and its playback volume, so that the same terminal, if it is already playing audio (eg music) can be interrupted by a higher priority stream (for example an announcement) and with a different volume (typically an announcement must be played at a higher volume than background music). The audio supported by this mode is in the G.711 format (aLaw or μ Law), G722 or linear high quality 16 bit (proprietary format, diffused through the AD615 device or an Intercom AA-540).

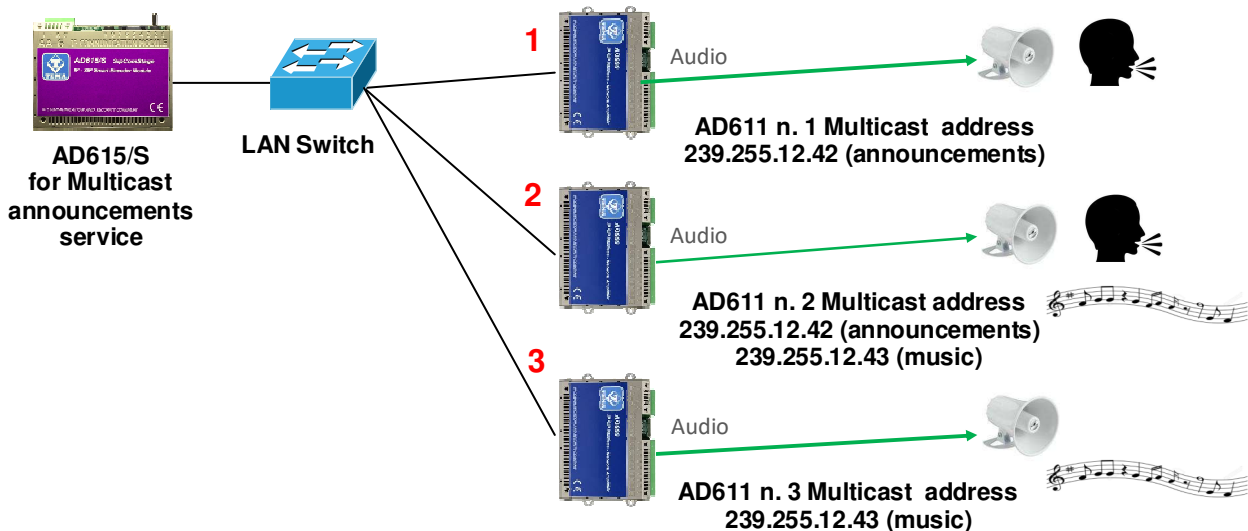
Streaming audio broadcast is useful for generating voice announcements, also known as "Paging". Obviously the Multicast audio streaming is unidirectional, the audio stream is sent from source to destination, but not vice-versa. The audio streaming can be received from multiple AD600 terminals simultaneously (programmed with the same multicast receive address). In AD615/S you can program up to two Multicast streaming address.

On receiving devices, the fact that it is possible to assign a priority level to each address (channel), give the opportunity to create a background music service on the less priority channel and overlapping announcements directly by an operator from its microphone base to another priority channel over the music channel.

Example

In a plant there are the systems showed in the diagram, connected to the same network switch.

AD615/S can make an announcement via Multicast to the address 239.255.12.42 or normally broadcast ambient music at 239.255.12.43:



Many more devices than those shown in the example may be connected, there are no limits. The receivers are programmed to receive only the announcement, the music plus the announcement or the only music that AD615/S makes available on the LAN streaming.

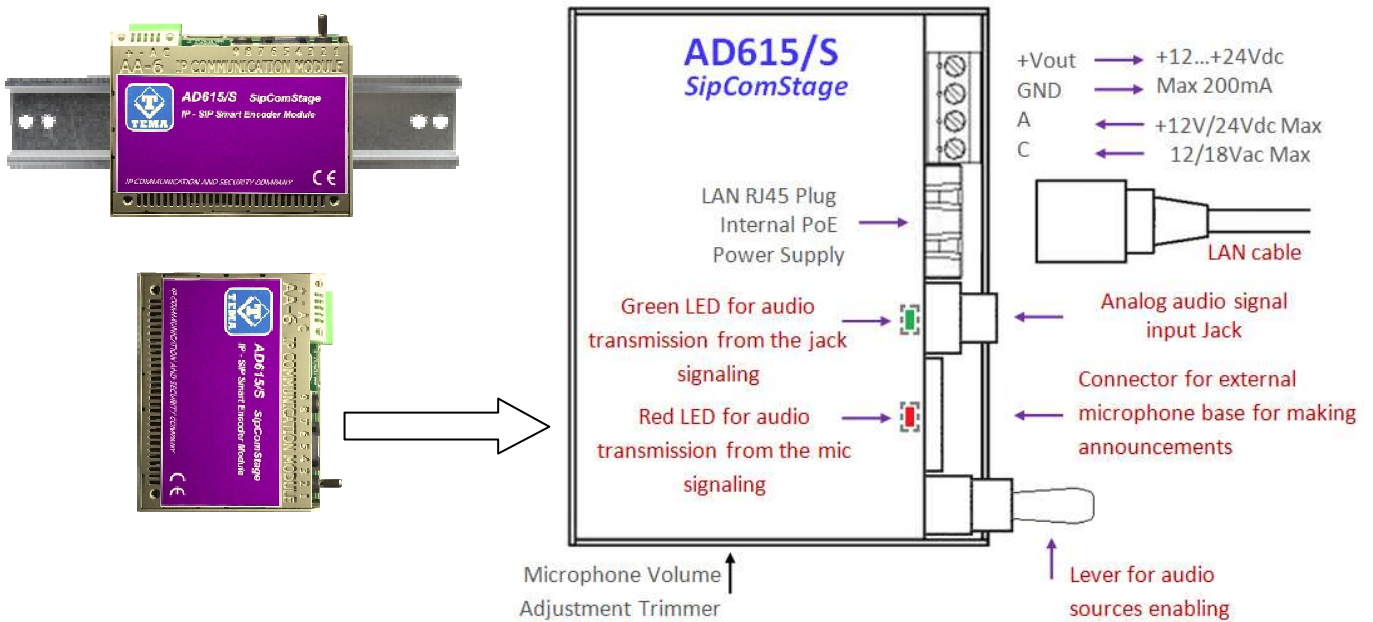
System number 1 in the example figure will only play the announcement message, the system number 2 will broadcast the music that will be interrupted due to the broadcast of a priority announcement, the system number 3 will always and only broadcast the music without ever listening to messages (the music will be interrupted anyway for the duration of the message being sent to other devices).

To get a continuous service of ambient music you will need to have a second AD615/S in order to dedicate a system for the transmission of music and the other to the transmission of the announcement messages, because with just one system the music channel will be interrupted when a microphone announcement is being broadcasted.

7. INSTALLATION

Position, connect and operate AD615/S is very simple.

7.1. Mounting and System positioning



Simply place AD615/S on a table or shelf after applying the rubber anti-slip adhesive feet. Alternatively, if desired, it is possible to screw to the bottom of the system the practical accessory adapter for DIN rail using only the 2.5MA cross-head screws and washers supplied. Otherwise fix to the wall using the side fins with fastening eyelets and screw anchors with screws provided. Warning: the side flaps can be opened only once to avoid their weakening.

7.2. Connection

The connection must be carried out by qualified technical personnel, operate without power, strictly follow the specifications of voltage and current levels indicated in the figure.

4-pin removable terminal block

- +Vout** Terminal block from which it is possible to withdraw unregulated power supply, POSITIVE
- GND** Terminal block from which it is possible to withdraw unregulated power supply, NEGATIVE
- A** Terminal block to power the system, irrelevant polarity
- C** Terminal block to power the system, irrelevant polarity



At the "+Vout" output there is a + 12Vdc voltage when the device is powered via PoE, otherwise, at this output the voltage will be the same as at the terminals A-C. The use of "+Vout" is permitted as long as it is not exceeded a maximum 200mA current consumption and the load has a protection on the input current. Improper use of this output will permanently damage the unit.

RJ45 LAN Port

AD615/S requires a LAN cable to connect to the network. If the port cable has also PoE, it will not be necessary to supply the module with other power sources (Recommended solution).



Devices powered via PoE (Power over Ethernet) may only be connected with cables coming from inside the building, they are not allowed connections to LAN cables coming from outside the building.

Jack 3,5mm audio input

This is the input for a stereo cable ending with a 3.5mm stereo jack. The input is expected to be connected to a "line" output coming from a common non-amplified audio playback device such as audio CD players, FM tuners, MP3 players.



Do not connect to this input outputs from amplifier equipment or devices that directly pilot a speaker, the levels would not be adequate for the correct operation of the system and you may get poor quality audio quality or you can damage AD615/S.

RJ45 microphone base

At the RJ45 proprietary input can be connected an optional microphone base from which the audio of an electret microphone is picked up. The microphone is powered directly by AD615/S.



Please note that this is not a Phantom power, suitable for commercially available microphones, then it is necessary to have the accessories provided by Tema for generating announcements messages

Audio selector lever and current audio indicator LED

Is the three-position lever that controls the transmission of audio signals over the LAN network, encoded by AD615/S and sent in the selected protocol by the system parameters. A LED is located above each input jack. Red for the microphone and green for the audio input from the cable. Turns on when audio transmission is selected from either of the two ports.

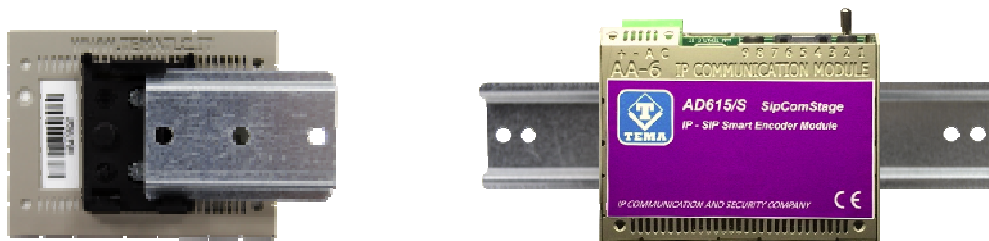
Wall installation with dowels

Use the anchors provided and before fixing to the wall fold the flaps with eyelet not used towards the side walls of the device.



Installation on standard DIN rail

Secure the plastic DIN accessory on the back of the device using the 2 flat washers + 2 countersink 2.5x6mm screws supplied and clip onto a standard DIN rail, fold all the flaps with eyelet towards the side walls of the device.



Installation support on table or shelf into Rack cabinet

Apply the non-slip rubber feet provided on the bottom surface of the device, fold all flaps with eyelet towards the side walls of the device.

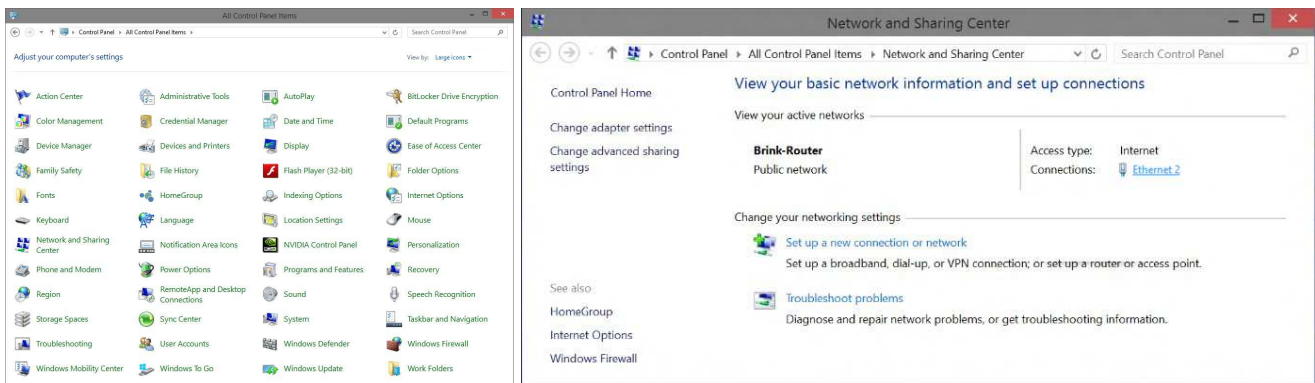
8. PROGRAMMING

8.1. Preparation for the system parameters programming

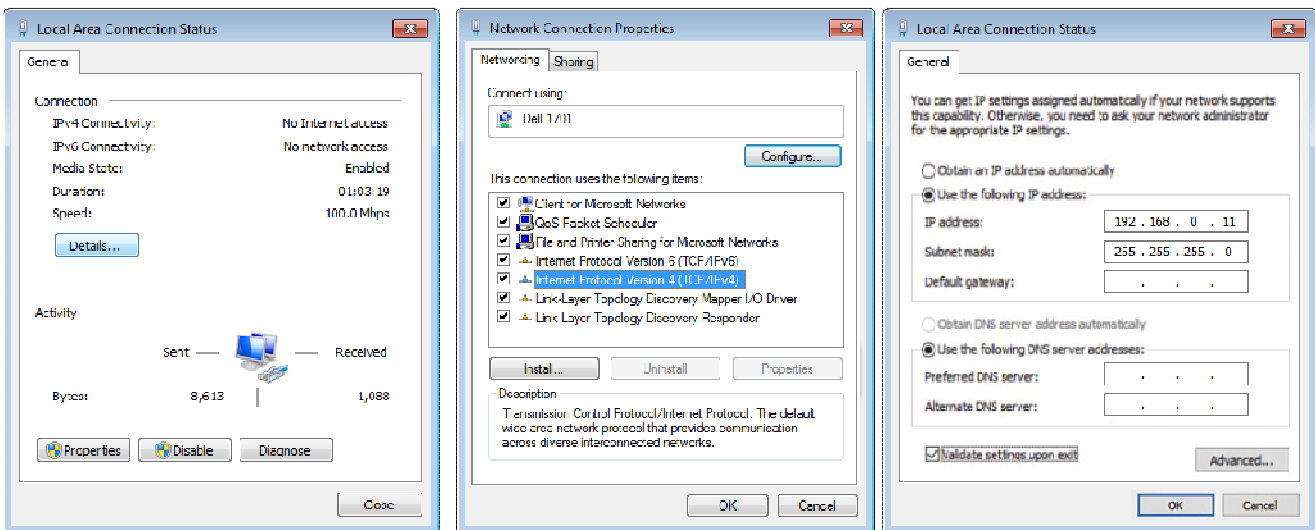
Programming is done via the WEB interface. To gain access, simply connect an Ethernet cable from a PC or from a switch to the LAN port of AD615/S.

The default IP address of AD615/S is "192.168.0.10".

Remember that in order to successfully connect to the web interface of AD615/S, it is necessary that, in the IP addresses configuration of your PC, is present the subnet 192.168.0.x, where "x" is any number between 1 and 254 and different from 10. See below how to configure your PC to reach the correct subnet. The shown procedure applies to Windows® operating systems. Open the Windows Control Panel and set the field "View by": "Category" "Large Icons" or "Small Icons". Choose "Network and Sharing Center" as shown in the first figure, detect your LAN connection, choosing the one referring to the network card that you are using to connect with AD615/S.



Once the correct connection is identified, click on it and it will appear the window where it is necessary to click on the "Properties" button. It will then open the window where must be selected "Internet Protocol Version 4 (TCP/IPv4)" and then click the Properties button again. See the following figures:

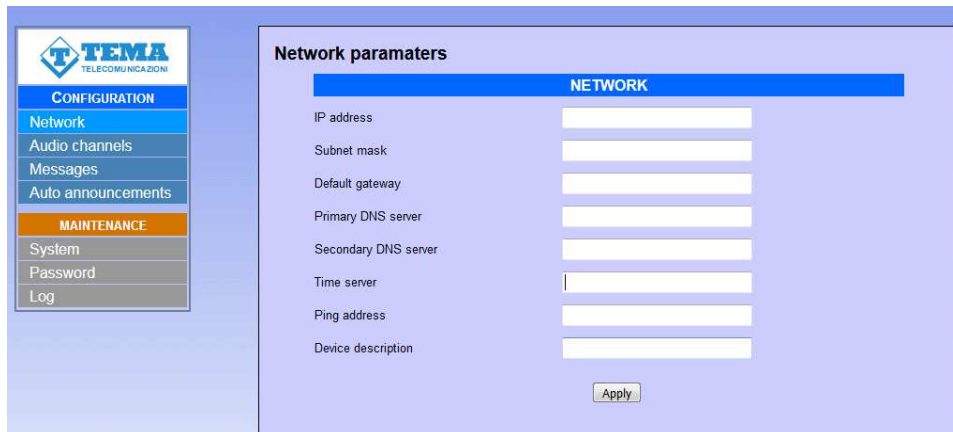


If the PC is already on subnet 192.168.0.x with a mask 255.255.255.0, ignore the following steps. Otherwise, proceed as follows. (The address of the PC configuration should not be 192.168.0.10). Remember the current TCP/IP configuration of your computer for any subsequent restore of the correct parameters. Click "Use the following IP address" and type in the appropriate field the following IP address: 192.168.0.11 (instead of "11" used in the example it is possible to enter any number between 1 and 254, but excluding the 10 which is the default address of the system to be programmed). In the "Subnet Mask" enter the netmask 255.255.255.0. Click OK to confirm the changes. The PC is now ready to configure the door phone. Remember at the end of programming to restore the network configuration of the PC to its original state if necessary.

Once the IP address of your PC is successfully configured, it is possible to reach the Web interface to configure AD615/s at the address 192.168.0.10 .

8.2. Access to programming

To program the device, it is sufficient to use a standard browser such as Explorer, Firefox, Chrome or others.



The screenshot displays the TEMA web interface. On the left is a navigation menu with two main sections: 'CONFIGURATION' and 'MAINTENANCE'. Under 'CONFIGURATION', the 'Network' option is selected and highlighted in blue. Other options include 'Audio channels', 'Messages', and 'Auto announcements'. Under 'MAINTENANCE', options are 'System', 'Password', and 'Log'. The main content area is titled 'Network paramaters' (sic) and contains a sub-section 'NETWORK'. This section lists several configuration fields, each with a corresponding text input box: 'IP address', 'Subnet mask', 'Default gateway', 'Primary DNS server', 'Secondary DNS server', 'Time server', 'Ping address', and 'Device description'. An 'Apply' button is located at the bottom right of the configuration area.

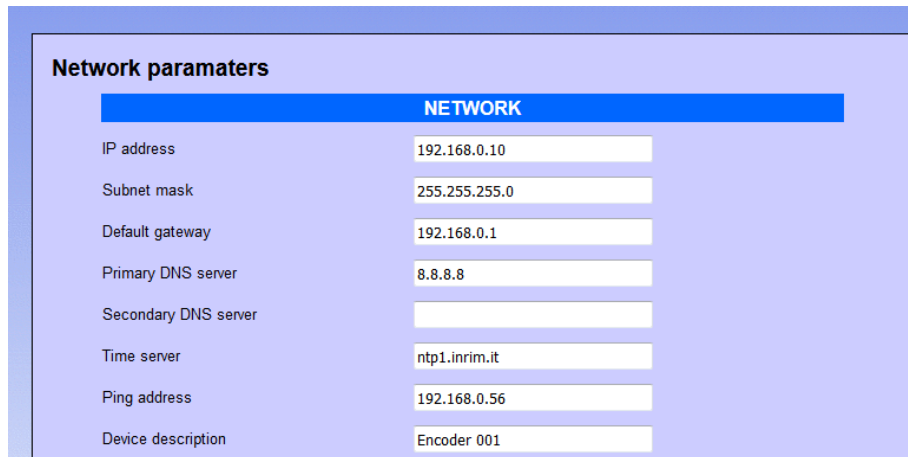
The default address of the device is **192.168.0.10** with a mask of **255.255.255.0**, and the user/password with which to connect are **master/master**. Make sure to have access to this network segment from your computer. Once logged in, it is possible to change the administrative password for the maximum safety of your device.

The use is very simple and intuitive, it is always visible on the left the menu for selecting the functions to be programmed, while on the right is shown the configuration window that is currently active.

Any change will be confirmed by pressing the "Apply" or "Save" buttons. Closing the browser or changing the page without selecting those buttons will make lost any change. Any changes do not require restarting the device (except the change of IP address, and the software update).

8.3. Network parameters

On this page it is possible to set the network parameters, such as IP address, netmask, etc.:



Network parameters	
NETWORK	
IP address	192.168.0.10
Subnet mask	255.255.255.0
Default gateway	192.168.0.1
Primary DNS server	8.8.8.8
Secondary DNS server	
Time server	ntp1.inrim.it
Ping address	192.168.0.56
Device description	Encoder 001

The default IP address of the device is **192.168.0.10**. Gateway and DNS are only needed if you want the device to have the ability to access the Internet (for example to get the current date / time, in the example from the site time.nist.gov).

The changes to the network settings are taken over by the device until the next reboot. Once you have completed the configuration steps so be sure to reboot the system and if necessary, change the network segment of your computer so that it can connect to the new address.

- IP address: specify the IP address you want to assign to AD615/S.
- Subnet mask: indicate the subnet mask to be assigned to AD615/S.
- Default gateway: indicate the gateway that can enable AD615/S to access to internet.
- Primary and secondary DNS server: indicate the addresses of two DNS servers you want to use to resolve IP addresses.
- Time server: indicate the address of the server you want to use for time synchronization device.
- Test address (ping): if inserted, this address is used by the system to verify the correct operation of the network connection.
- Device description: optional, is the description that appears on the net with the search tool Tema "ADAM Audio Domain & Access Management" a very useful software for the centralizad management of all devices IP Audio series AD600 and IP Intercom series AA-500/600.

8.4. Audio channels

This section contains the basic programming, where to configure the destination addresses of multicast traffic and the audio codec to use:

Multicast audio stream destination		
Channel	IP address	Port
Channel 1	#239.255.12.43	8001
Channel 2	#239.255.12.44	8001
Channel 3		
Channel 4		
Channel 5		

Audio quality	
Stream codec	4 - LN 32k

The stream addresses must be preceded by the "#" character (but the software will add it anyway). Channel 1 represents the stream destination associated with the high position of the lever (generally the music) while channel 2 is the destination of the audio associated with the lower position of the lever (announcements from the microphone). The two streams addresses can also coincide.

Channels from 3 to 5 are not used and are intended for future use.

The stream codec parameter indicates which codec to use when digitizing the incoming audio signal. It is not necessary to program the type of codec set up in AD615/S of the receiving devices as the detection will be automatic. It is possible to choose between the G711 quality (the lowest) and the L16 quality at 32 kHz (the highest). Obviously a best quality matches a greater bandwidth.

The selected codec in AD615/S in the above window will be the same for the background music stream as well as for the stream output of a voice announcement from the microphone.

8.5. Messages

In this window it is possible to change/listen to the Announcement messages. The memory contains a default message for each position, the user can change any of them and the messages format must be WAV PCM 8 kHz, 16 bit, mono. Max duration is 16s upgradable to over 8 minutes each with licence.



These messages will be used for the function described in “Automatic announcements”.

8.6. Automatic announcements

It is possible to program the diffusion of announcements at pre-set times, which can be streamed to other devices.



Daily activation:

it is possible to automate the diffusion of a daily announcement (which will take place at the set time) for each day. It will be reproduced for the number of repetitions, with separation between a message and the other given by the number of seconds set. It is also possible to manually activate the message (with the "Activate now" button) or stop

playback (with the "Stop" button). If the manual activation mode is only used, it is not necessary to indicate the start time.

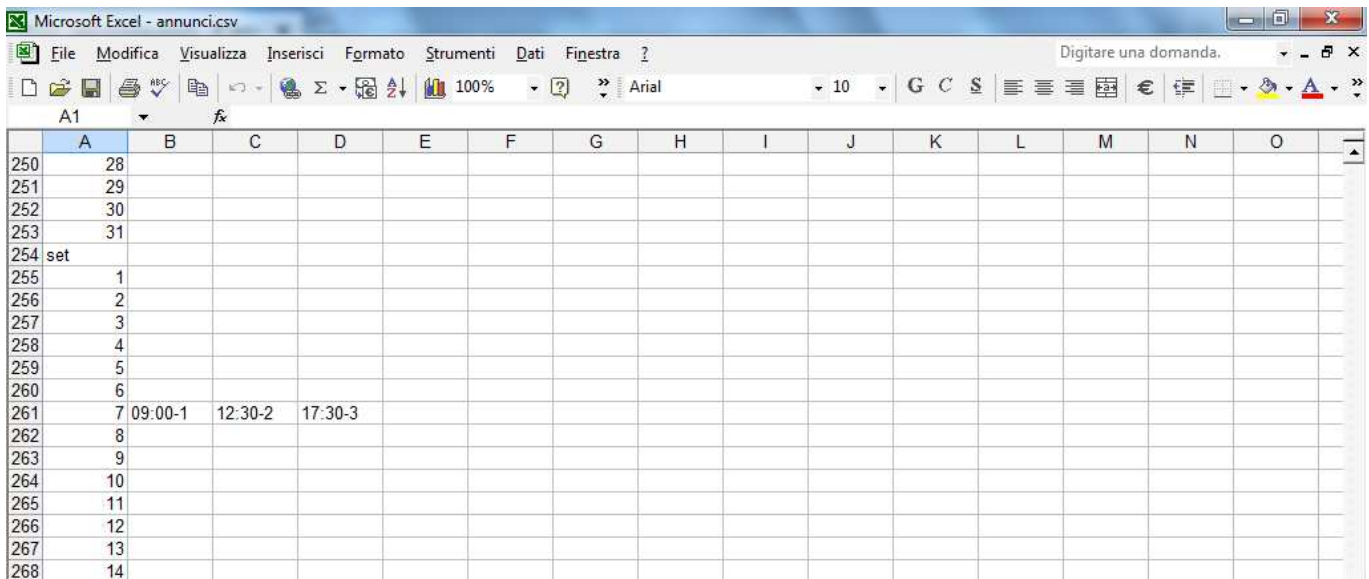
The shown message is one of the 6 alarm announcement messages that can be found in the "Message Management" followed by the number of stream channel (see just below).

Periodic activation from table:

if you activate this function, it is possible to indicate in the table below, for each day of the week, up to five different times, for each of which it is possible to specify one of the six pre-recorded announcement messages.

Periodic activation from file:

it is possible to upload a text file in "csv" format (easily editable with "Excel") that contains, for each day of the year, up to 5 times in which to make the announcement diffusion. To compile the file simply download the default one already present (and empty), modify it and re-upload it (do not change the written months, are used by the device to index itself in the document):



In the example it was indicated that on September 7th (every year) the message 1 should be reproduced at 09.00, message 2 at 12:30 and message 3 at 17:30 .

Streaming

Since the device does not have a local speaker, it is only possible to play the indicated messages only to a streaming multicast address. To do this it is necessary to insert, after the message number, the letter S followed by the multicast channel number programmed in the "Audio Channels" mask. **For example: 1S2 means streaming message 1 to the address programmed on channel 2.**

NOTE1:

the playback volume is given by the volume of the multicast channel programmed in AD600 devices receivers.

NOTE2:

since the device does not have its own internal clock, the automatic diffusion of messages can take place only if it is synchronized with a time server (which can be one into the local network or any other on the internet, see the "Network parameters").

9. MAINTENANCE

9.1. System

System administration

INFO

Serial number 0000000

MAC address 00-00-00-00-00-00

Firmware version 1.08 Nessun file selezionato.

License

Backup and restore Nessun file selezionato.

Reset to factory settings

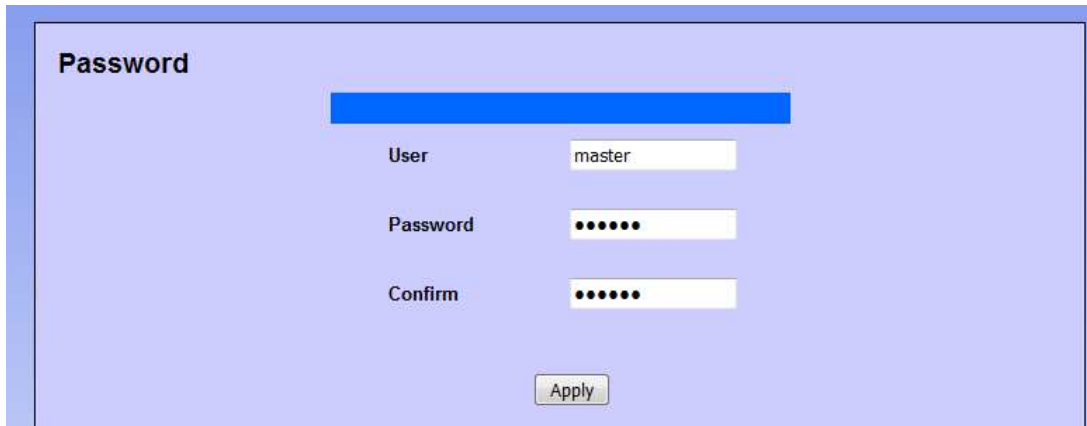
Device reboot

On this page it is possible to check the current firmware version, update software, and backup / restore the system configuration:

- **MAC address**: is the physical address assigned to the network interface.
- **Firmware version**: displays the currently installed version of the program. It is possible to upload a different version (possibly provided by the technical support of TEMA) using the Browse/Update. Once you've uploaded the new version, the device must be restarted.
- **License**: enter in this field the license key to activate any additional services (such as the use of messages over 16 seconds).
- **Backup and restore**: it is possible to save the current settings to restore them in case of a programming error or device replacement.
- **Reset to factory settings**: all settings are lost and reset to factory defaults. You are prompted to confirm the operation.
- **Device reboot**: reboot as if it were taken away and put back power. Useful in case you have not physically present in front of the device and it needs to restart it. You are prompted to confirm the operation.

9.2. Login credentials

By default, the user name and password for access to the configuration are **master/master** (lowercase). It is not possible to have more than one user (there are not hierarchical levels of programming), but it is possible to change the login credentials. The password must be entered twice for confirmation.



Password

User

Password

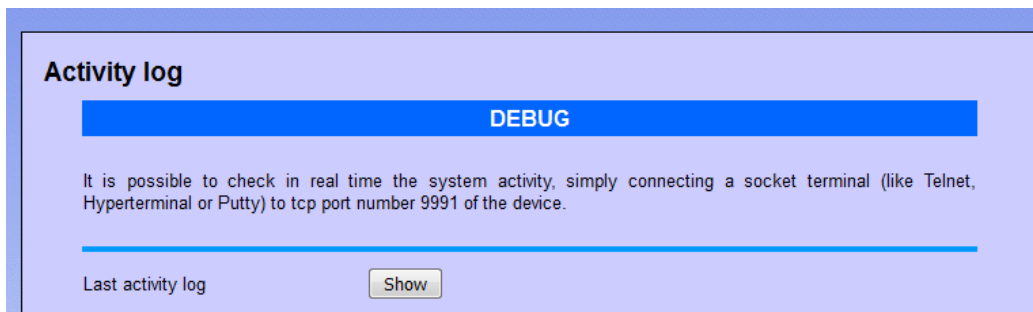
Confirm



Make a note of the new credentials introduced to then re-enter the system !

9.3. Diagnostic logs

To identify small configuration problems, it is possible to activate a diagnostic summary on the activity of the two VoIP channels of the device. Simply connect via TCP port 9991 with Telnet or a terminal like Hyperterminal. It is also possible to view the history of activities for each module by clicking "Last log". The log is deleted when it exceeds the size of about 2 MB.



Activity log

DEBUG

It is possible to check in real time the system activity, simply connecting a socket terminal (like Telnet, Hyperterminal or Putty) to tcp port number 9991 of the device.

Last activity log

10. APPENDIXES

10.1. Appendix 1: Use of the VLC Media Player software as an audio files player

With the free VLC program downloadable from the link <http://www.videolan.org/vlc/index.it.html> it is possible to use your Windows PC as an analog audio player.

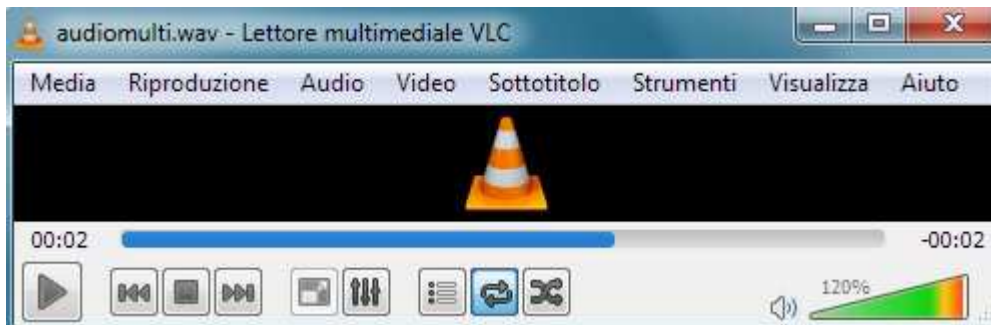
For example, it can play an audio file. The file, of any duration and format managed by the program, can be an announcement or a music compilation to be sent to the AD615/S Encoder system.

AD615/S will encode it according to the selected algorithm and codec and make it available on a programmed Multicast channel.

All AD600 listening (receiving) systems on that particular Multicast channel will broadcast this audio.

To do this, follow these steps:

1. Download the VLC program and install it on your Windows PC, the folder where the VLC program is installed is located under C:/programmi (x86)/VideoLAN/



2. Record or obtain an audio file.
3. From the program window, select the file to play and play it.

AD615/S will transform the analog audio playback of the computer into Multicast audio streaming on the LAN, for the various AD600 receivers in the network.

It will be possible with program options, to play the file once, to perform a cyclic and continuous playback, for example by combining multiple tracks to play...

For more informations on the VLC program, refer to the manufacturer guide of the program.

10.2. Appendix 2: Use of the AUDACITY software for audio files recording

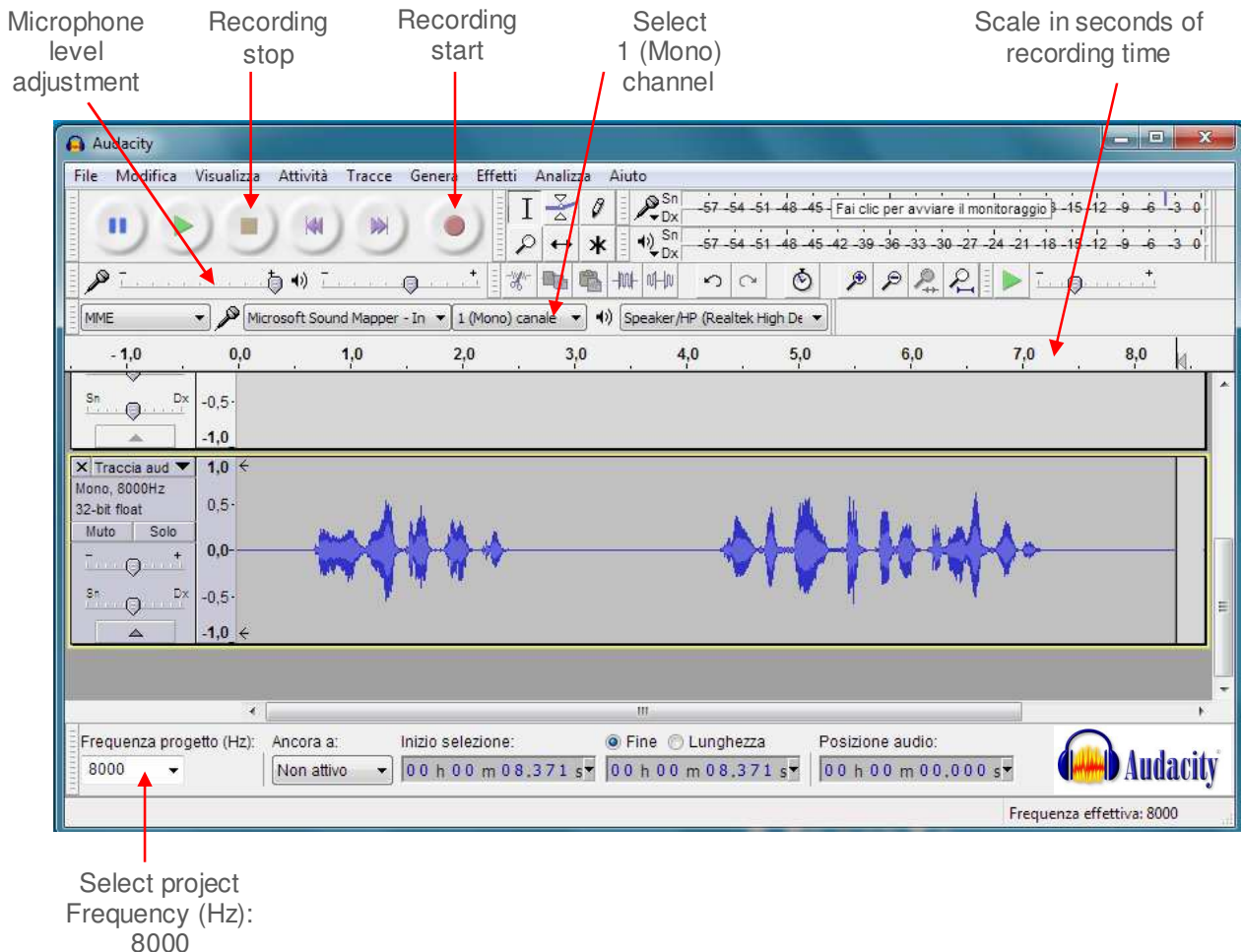
For recording your audio files, it is possible to use one of the free softwares such as AUDACITY downloadable for free from the link <http://www.audacityteam.org/> remembering to record and save audio files in .WAV format at 8KHz-16Bit Mono, other audio file formats will not work with the AD600 series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

Proceed as follows to record a message from the built-in microphone or connected to the PC.

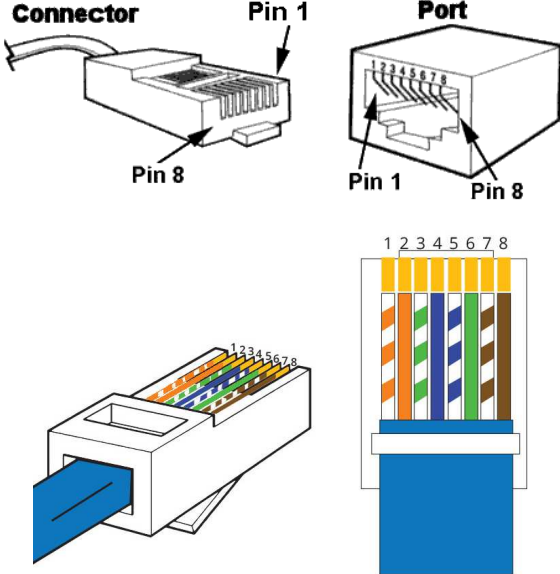
1. Select the 8,000Hz sampling rate, click Start Recording and start talking.
2. To end the recording, click on Stop recording, listen to the recorded audio, and then repeat recording if not optimal. To delete the previous recording, simply select the audio track (crawl from start to finish), press the "Delete" button and repeat the recording. With this procedure it is also possible to delete small parts of silence or sound inside the track.
3. To save the recording click on "File", "Export Audio", give a name and select in the "WAV (Microsoft) 16-bit PCM format" drop-down list. The saved file is ready to be used on all devices in the AD600 series or used with the VLC program (see previous appendix) to be sent as Multicast audio streaming.

The AUDACITY software allows a large number of audio signal processing such as: amplification/reduction of audio levels, duplication of track parts, elimination of silences, insertion of DTMF tones or tones, noise reduction, etc. For optimal use please refer to the product manual.

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



10.3. Appendix 3: Cabling of a UTP RJ45 network cable according to the standard EIA568B



Pin	Signal	Connector 1	Connector 2
1	TX+	White/Orange	White/Orange
2	TX-	Orange	Orange
3	RX+	White/Green	Bianco/Green
4	PoE-	Blue	Blue
5	PoE-	White/Blue	White/Blue
6	RX-	Green	Green
7	PoE+	White/Brown	White/Brown
8	PoE+	Brown	Brown

NB: if the cable colors are different, the right matches must be maintained.

- Cut the sheath (about one centimeter) to discover the wires.
- To facilitate the process it is possible, by exploiting the elasticity of the sheath, to pull the wires some additional millimeter. (Hold with one hand the wires and with the other pull the smoothing sheath).
- Straighten the wires previously individually pair twisted.
- Compose the color sequence following the pattern.
- Level the length of the cables into place.
- Insert the tightened wires into RJ45 connector holding them between your fingers until they are channeled into the guides inside the connector itself.
- Push well until the wires will touch the bottom of the connector (check in transparency that all the wires are in place).
- Make sure that the sheath has penetrated into the connector for at least 8 mm so that it can also be crimped.
- Place the connector in the crimping tool and tighten all the way. Should be audible a click caused by the outer stop.
- Repeat exactly all the above steps to crimp the cable on the other side.

Notes