User's Manual

AUXILIARY SYSTEM CONTROLLER

Model: **LDAASC82NS01**

LDA audioTech

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WARNING:

This device can't be exposed to drippings or water projections and it must be situated far of objects containing fluids.

1 TECHNICAL DESCRIPTION:

The main function of the ASC-82N is to control the auxiliary system. This system allows having an alternate path to broadcast messages in case a failure occurs in the PA system's main server.

Aside from this main function, the ASC-82N manages 7 microphone inputs with ordinal priority, 1 of which can be configured as a CD input. The microphone inputs are designed for models MCA-1X, MCA-8X, MCA-1N and MCA-8N. It includes a pre-recorded emergency message player using high quality MP3 format, with the possibility of broadcasting long messages.

Finally, it has an Emergency Controller function, through which it allows interconnection with emergency detection systems, including logic inputs and outputs by contact closure. It also includes 4 outputs for the remote control of attenuators or sirens with 24V output.

The equipment allows monitoring and controlling the system locally and remotely. For local control, it includes an interactive front panel with display, keyboard and LEDs showing the status of every important item of the system to be monitored.

All of these functional characteristics allow complete integration of the equipment in the PA system, in compliance with the UNE-EN 60849 standard.

2 OPERATION DESCRIPTION

The ASC-82N is in charge of managing the LDA PA auxiliary system, and therefore the operation described corresponds to said auxiliary system. This occurs in the case of the statuses shown, given that when the system is monitored, each status of the equipment will correspond to the each status of the system.

2.1 PA SYSTEM OPERATION MODES

The security PA system can operate by means of two alternative paths. Depending on the path used, the mode is called the main system or auxiliary system.

In the case of high priority or evacuation messages, the system can use elements to ensure that the messages reaches the final recipients, such as attenuators with priority or warning sirens. These systems are activated in the emergency mode, with the normal mode being when they are disconnected.

Summary of classification:

- AUDIO PATHS: primary or auxiliary.
- MESSAGE PRIORITY: normal or emergency.

Based on these explanations, the operating modes or system statuses he following:

2.1.1. PRIMARY SYSTEM (with server)

The ASC-82N can work jointly with a system control server. In this case the ASC-82N operates as a supervision interface, monitoring the correct operation of the server.

The server will receive any alarm that occurs and can activate the emergency mode to broadcast high priority messages, activating the priority attenuators and sirens.

2.1.2. AUXILIARY SYSTEM IN STANDBY (automatic)

The auxiliary system is a redundant system going from the microphones to the amplifiers independently. It is controlled by the ASC-82N and it operates as follows:

In case of failure of the PA server, the ASC-82N continues in standby until a micr phone requests the floor. At this moment the ASC-82N automatically switches to the auxiliary system and allows broadcasting the message. When the server recovers, the system will return to a normal status or main system.

This mode is indicated by an orange LED system status light.

2.1.3. AUXILIARY SYSTEM

The auxiliary system can be activated manually by using the controls on the front panel and a security code. This operation mode will allow operating with a CD input, in addition to the system’s microphones. The sirens and attenuators can also be a tivated, in addition to manually broadcasting prerecorded messages.

It is also possible to enter the auxiliary system by using the emergency code, with which the emergency messages, sirens, etc., will be automatically activated following a predefined sequence.

2.2. SWITCH ON

When the equipment is switched on, the elements of the front panel are checked and the LEDs and the display are turned on.

With the start-up the ASC-82N recovers the last operating mode it was in when it was turned off: if the auxiliary system was active, it will switch on with this mode, etc.

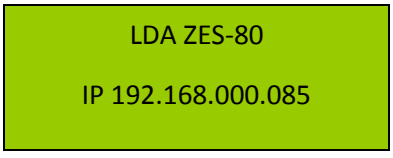
By default, the device starts up waiting to communicate with the server, and in case it does not get a response after 9 seconds it will switch to auxiliary mode in standby. If, on the other hand, it loses contact with server after being connected, it will switch to auxiliary mode in standby after approximately 30 seconds.

In the equipment's configuration menu, the assigned IP address, the input volumes and the CD inputs shall be configured, if necessary.

2.3 CONFIGURATION MENU

The equipment is configured and monitored by means of the menu that is accessible on the display.

When connecting the equipment the power supply and pressing the turnon switch, the following message appears on the display:



If With the MENU key, we gain access to the main menu, which is divided into three cyclic menus:

CONTROL OF THE SYSTEM

We can control the parameters of the auxiliary system, activate the emergency, messages, etc. You will need the control code. If after introducing the correct code the system stops interacting with the equipment for 20 seconds, it will return to the welcome screen, cancelling the code confirmation. The default code is 1234.

Emergency (ON/OFF) Activates/Deactivates the emergency status.

Once activated, the evacuation sequence is reproduced with the sirens or attenuators that are connected to the equipment.

Furthermore, the equipment will take control and will manage the microphones that want the floor. The evacuation sequence includes warning messages that must be recorded in accordance with the characteristics of the installation or sytem.

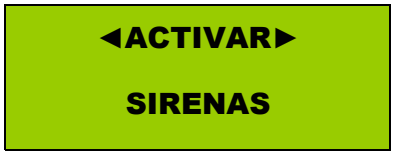
The emergency status priority to occupy the channel is as follows: first voice messages broadcast by the microphones, and then the evacuation sequence. Therefore, if there is an evacuation sequence or if it is being broadcast and a microphone wants the floor, the equipment will switch to the microphone, and after the microphone has finished speaking it will switch back to the emergency sequence.

The priority between microphones is determined by ordinal numbers; in other words, the microphone connected to input 1 will have more priority than the one connected to input 2 In case the message status indicator shows an error, the emergency cannot be broadcast. In addition, once the emergency has been broadcast or cancelled, the equipment takes about 2 seconds to activate the keyboard.

Auxiliary System (ON/OFF) Activates/Deactivates the auxiliary system. The control signal towards the power amplifiers will be activated and they will switch to the priority input.

If in this status any of the two microphone inputs (inputs 6 and 7) are configured as CD input, it will be given way. If a microphone that has more priority than the CD input requests the floor, the CD input will switch and give the floor to the microphone. Once that microphone has finished talking, the equipment will switch back to the CD input.

Activating Sirens: This allows activating the attenuator or siren output manually.



This activation is independent from the other functions. Therefore they can be activated when operating with the Server (primary system) or without it (auxiliary system).

- **All Attenuators (ON/OFF)** Activates/deactivates all sirens or attenuators.
- **Area 1 (ON/OFF)** Activates/deactivates the first siren or attenuator.
- **Area 2 (ON/OFF)** Activates/deactivates the second siren or attenuator.
- **Area 3 (ON/OFF)** Activates/deactivates the third siren or attenuator.
- **Area 4 (ON/OFF)** Activates/deactivates the fourth siren or attenuator.
- **Broadcast Messages:** The message selected from the memory card is broadcast, and the message will be reproduced indefinitelY.

Only one message can be broadcast at a time; in other words, if message 1 is broadcast, followed by another one, the first one stops and the second one is activated. The message also stops if the emergency is broadcast.

Messages cannot be broadcast in case the EMERGENCY is activated, or when the message integrity indicator is active, either because there are no messages in the memory card or because the memory card is not inserted. This error will be shown on the front panel by a red LED with labelled MSG. It should also be noted that once the message has been broadcast or cancelled, the device takes about 2 seconds to activate the keyboard.

The messages will be recorded on the SD card in MP3 format, and the name of the file will be message message_1.mp3, message_2.mp3, message_3.mp3, etc. The odd numbered messages, such as message_1.mp3, message_3.mp3, message_5.mp3, etc., are the previous messages and the even numbered messages, such as message_2.mp3, message_4.mp3, message_6.mp3, are the alarm messages.

Message 1(ON/OFF) Activates/deactivates message 1

Message 2(ON/OFF) Activates/deactivates message 2

Message 3(ON/OFF) Activates/deactivates message 3

Message 4(ON/OFF) Activates/deactivates message 4

System Monitor: Read-only menu in which all of the system's and equipment's important parameters can be controlled.

The system monitor is composed of 11 cyclic sub-menus

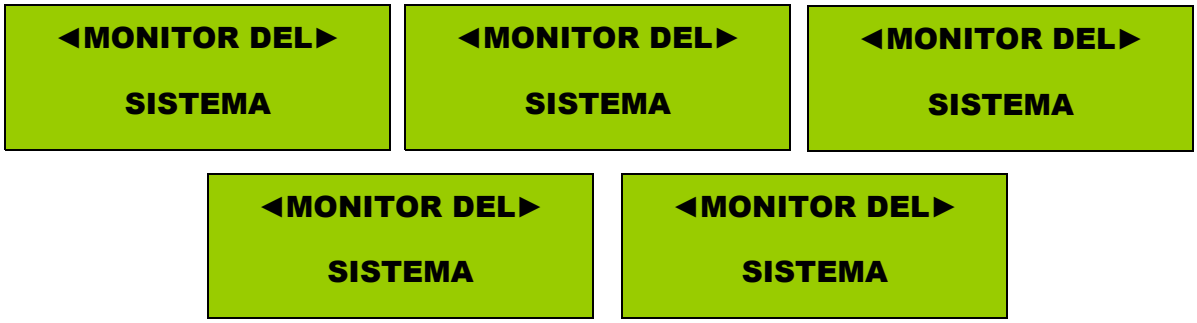
- **System Status:** it shows the system's current status, which can benormal, without server or auxiliary system activated.
- **ATD Output:** It shows the attenuator output status. 1 is active and 0 isin standby. By default it is in standby.
- **Microphone Input:** It indicates which microphone is busy at a givenmoment: 1 indIcates the microphone is busy and 0 that the microphone is not busy.
- **Fire Alarm and SAI [UPS]:** It shows the values of the fire alarm and SAI [UPS] logic inputs, where OFF indicates that it is not active and ON that it is active.

- **Volumes 1-4:** Values of the volumes configured for microphones 1 to 4. The default volume has a value of 50.
- **Volumes 5-7:** Values of the volumes configured for microphones 5 to 7. The default volumes have a value of 50.
- **Message Volume:** Value of the volume configured for the message player. The default volumes have a default value of 50.
- **IP Address:** It shows the equipment's IP address. By default, the IP is 192.168.0.85.
- **Subnet Mask:** It shows the equipment's subnet mask.
- **Input Configuration:** It shows the configuration of inputs 6 and 7, which can be configured as microphone inputs or as music sources for the auxiliary system and emergencies.
- **Microphone Configuration:** It shows if the microphones are configured in the mode without server (auxiliary system in standby) or in the auxiliary system mode only. In the mode without server, the equipment will consider a request for the floor when the auxiliary system in standby is active. In the auxiliary system only mode, it is configured without server by default.

System Configuration

The equipment's parameters can be configured in the menu, such as the volume and the CD line inputs. It is necessary to have the control code. If after introducing the correct code, the system stops interacting with the equipment for 20 seconds, it will go back to the welcome screen and will cancel the code confirmation. The default code is 1234.

The system's configuration menu is divided into 5 cyclic sub-menus.



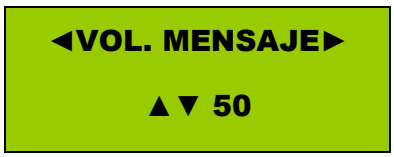
- **Volume Configuration**

In this menu we can configure the different volume levels of the equipment's micro-phone inputs and message player.

The volume configuration sub-menu is divided into 8 cyclic menus.

The gain of each microphone input can be configured in the first 7 menus. There are 62 different levels, with a range that goes from -90dB (0) to +12dB (62).

The eighth menu is the volume to configure the gain of the message player.

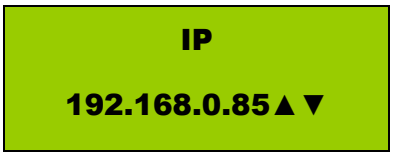


It configures the gain of pre-recorded messages; it has 54 different levels.

Once the volume has been selected, it must be confirmed by pressing the OK key; if the Ok key is not pressed, the volume will not be saved and therefore when we turn off or on the device the new volume will not appear. The increase of volume stages is one by one, but it is also cyclic, so we can go from maximum to minimum and viceversa.

- **IP Address Configuration**

It configures the equipment's IP address. The current address will appear on the screen.



The last number of the IP address can be changed with the keyboard, using the up/down arrow keys. The level of increase is one by one, and it is also cyclic, which means you can go from the maximum value to the minimum one in just one step.

- **Audio Source Configuration**

The audio source configuration menu has three cyclic submenus.

All the equipment input configuration aspects can be configured with this menu.

With the first menu you can configure the type of source that inputs 6 and 7 are going to have, which can be microphone input or music source input.

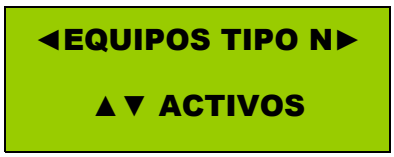
The options available are:

1. INPUTS. MICRO: Inputs 6 and 7 are microphone inputs. (default value)
2. INPUT 7 F.EME (*EMErgency.Source*): Input 7 is a music source for the emergency.
3. 6 AUX & 7 EME: Input 6 is a music source input for the auxiliary system and input 7 is a music source for the emergency.
4. INPUT F.AUX (*AUX.Source)*: Input 7 is a music source input for the auxiliary system.

With the second menu it is possible to configure whether the mode without server (auxiliary system in standby) or the auxiliary system only mode is activated or deactivated.

In the mode without server, the equipment will remain in standby until a microphone requests the floor. At this moment, the ASC-82N automatically switches to the auxiliary system and allows broadcasting the message. If on the other hand it is configured in the Auxiliary System Only mode, the equipment will not respond to the microphones' request when the system server is not connected. The default configuration is the mode without server.

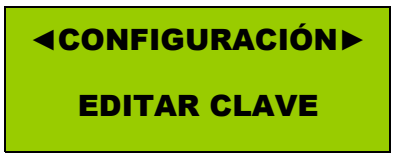
The third menu allows configuring the equipment so that type-N devices or other devices can be connected.



The characteristic of type-N devices is that the Asc-82N communicates with them and not with the others. When the microphones connected to the ASC-82N are of the X series (MCA- 1X and MCA-8X), they cannot be placed as microphone one input, but only from input two onwards, leaving number one input free.

- **Code Editing Configuration**

With this menu we can change the access code of the device, which is 1234 by default.



Once the new code is requested, it is introduced using the number buttons on the front panel and the OK key is pressed; a confirmation will be requested, and the code must be written again.

NUEVA CLAVE	CONFIRME CLAVE

If the confirmation of the code is correct, it will be kept and the next time the code is requested the new code will be used. If on the other hand the code is not properly confirmed, the old code will continue being used.

- **Attenuator Configuration**

With this menu we can configure if we want the system's attenuators to be activated when a microphone input is activated. This function is activated if the equipment has activated the auxiliary system or the system in standby.

◄ENTRADA X►

▲▼ SIN ATENUADOR

The x of the menu is the number of inputs that the device has.

2.4 FRONT PANEL INDICATORS

The front panel of the ASC-82N shows the system's most important parameters.

The image below shows the LED indicators on the front panel.

Ilustration 1: Front panel indicators

LED functions:

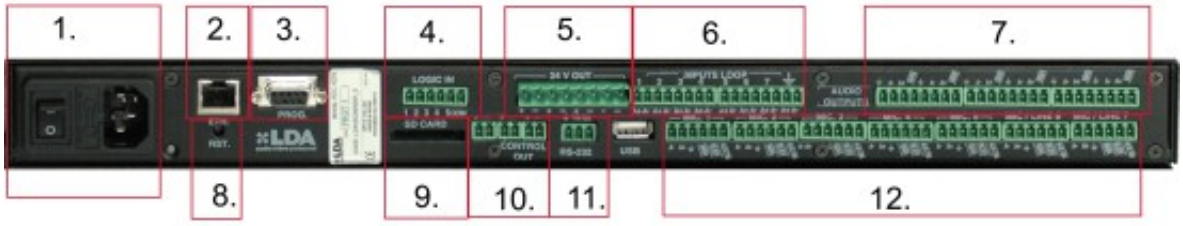
- PRIM/AUX: Indicates the system status; each status is explained in section 2.1 of this manual.
  - Green: Main System.
  - Orange: Auxiliary System in standby.
  - Red: Auxliary System active.

- MIC. Indicates the status of the security microphone.
  - Green: Security microphone checked and ok.
  - Red: Failure of the security microphone, without connection or failure in capsule.
- SPK. Indicates the status of the speaker lines
  - Green: Speaker lines checked
  - Red: Failure in speaker lines or line supervisor.
- SRV. Shows the status of the system's server
  - Green: Central server active.
  - Red: No connection to central server.
- NORM/EMER. It shows if the system is in normal or emergency mode. It will show if the control outputs for attenuators and sirens are active or not.
  - Green: Operating in normal mode.
  - Red: Emergency system active (attenuator output).
- MSG. Indicates the status of pre-recorded security messages
  - Green: Pre-recorded messages verified
  - Red: Error in pre-recorded messages
  - FIRE. Fire detection system monitor. For this function to be active, it must be connected to the installation's central fire station interface.
  - Green: Fire system input ok.
  - Red: Fire alarm detected.
- SAI [UPS]. It shows the status of the main power supply. For this function to be active, it must be correctly connected to the installation's SAI [UPS] system.
  - Green: Primary power supply, SAI [UPS] system verified.
  - Orange: Reserve power supply active.
  - Red: Failure in the system's security power supply.

Display function: The display has 16 letters per line and two lines to visualise all of the information regarding the equipment. For this purpose, it has a clearing function every time the different buttons of the equipment are pressed. When the buttons are not used, the equipment automatically clear the display and turn off the lights. Also, it can be cleared manually by simultaneously pressing buttons 2 and 3 on the front panel.

2.5 CONNECTIONS

The following image shows the back of the equipment; the connections are described below.



Ilustration 2: Rear panel

Nº	ELEMENT	DESCRIPTION
1	Network base	220V power supply connection~ with switch
2	Ethernet Connector	Ethernet connection for PA system
3	Programming Connector	Connection for firmware update
4	Emergency logic inputs	Common point connection: 1- Evacuation warning, emergency. Actv. at 0. 2- SAI [UPS] Monitor. 1= primary supply, 2 secondary supply 3- Status SAI [UPS]. 1=OK, 0=failure 4- Control input, 0= auxiliary system active. 5- Monitor of lines. 0= failure in a line
5	Remote control outputs	Outputs for attenuators or sirens, getting 24V and 1A per output.
6	Inputs loop	Each microphone input signal reached these outputs without any modification, to be connected to the digital matrix or monitor.
7	Amplifier outputs	8 audio+control outputs to be connected to amplifiers with LDA auxiliary system.
8	Reset button	Resets the microprocessor.
9	SD card	Input for SD card, where pre-recorded messages are stored.
10	Control outputs	Auxiliary control outputs, activated by voltage free contact closure: 1- Activates auxiliary or emergency system indistinctly 2- With emergency. Active only with Emergency Output 3- Simultaneously activates audio output MAN signal
11	RS-232	RS-232 port
12	Microphone inputs	Inputs for PA microphones. Description of pinouts: 1- GND 2- Audio+ 3- Audio- 4- Control input, active at 0 5- Output. Indicates if it is busy. Active at 0 6- Output indicating auxiliary system active. Active at 0.

Chart 1: Connections

The power connections consist of cable insert clamps fastened with screws or by pressure for easy installation.

3. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	
Power supply	220—240~ 50Hz
Consumption	< 40 W
Volume control	From -90 to 12dB
Sensitivity	0 dBm
Line connectors	Insert clamps, fastened with screws
Pre-recorded messages	Mpeg player 3 format
Ethernet interface	RJ-45 (10/100Mbits)
Dimensions	44 x 483 x 310 mm (height x width x depth) Equipment for 19” rack

Chart 2: Technical specifications

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