AUDEMO®
S Y S T E M S

Made
in
Germany

USER MANUAL

DPM-2500A
Digital-Audio-Matrix

EN 54 16

Dante™

CONTENTS

1. General

This operation manual includes important notes on safe operation of the unit. Please read all instructions and safety regulations. Keep these instructions for future reference. Take care that the operation manual is available to all users.

Our products are subject to continuous development. Therefore, any technical modification subject to change without notice.

Symbols and Important Notes
This section provides you with an overview of safety warnings and symbols and their importance.

Safety Warning	Importance
DANGER!	Warning of a possible danger, which can lead to death or to serious injuries, if not avoided.
CAUTION!	Warning of a possible danger, which can lead to a possibly dangerous situation, if not avoided.

Warning Symbol	Type of risk
	Caution! Warning of a possible danger!
	Caution! Risk of electric shock!

2. Safety Instructions

1. Please read all instructions before operating the unit.

2. Keep these instructions for future reference.

3. Follow manufacturer's instructions.

4. Pay attention to all warnings. Do not remove any safety instruction or other information from the unit.

5. Use the unit only in the intended way.

6. Take note of applicable safety regulations.

7. **CAUTION!** Select the assembly site in such a way that the unit can be sufficiently cooled. Take care of the details of the brief instructions.

8. **CAUTION!** Do not block vents.

9. **CAUTION!** Keep away flammable materials, liquids and gases.

10. **CAUTION!** Do not use this unit near water or moisture. Take care that no liquid penetrates into the unit.

11. The installation must be carried out only with accessories recommended by AUDEMO SYSTEMS®. All options could only be assembled ex works in terms of warranty.

12. **CAUTION!** Do not open or modify the unit.

13. Opening of the security protected united for servicing, repair and so on is only allowed by the service department of AUDEMO SYSTEMS®. Interventions to the unit and breaking the seals will invalidate the warranty agreement!

14. Opening of the unit deactivates all functions! For reactivating in factory a fee will be charged!

15. **CAUTION!** Always take care about all connections and cables after installation to avoid damages and accidents with e.g. trip hazards.

16. **DANGER!** Pay highest attention while transporting that the system could never drop down or fall over and causes injuries and material damage.

17. **CAUTION!** In any case of acute malfunction of the unit, damage or impact of objects or fluids, switch off the unit immediately and disconnect mains and emergency power supply. The unit as well as the system could only be repaired or changed by the specialized company, the contracted maintenance company or the manufacturer.

18. Clean the surface of the unit with a soft cotton cloth.

19. Pay attention to actual waste disposal laws and regulations

DANGER!
Risk of electric shock of dangerous voltage within the units enclosure

Within the units enclosure there are uninsulated parts with high electric tension. Do not remove the cover. There are no user serviceable parts inside.

DANGER!
Risk of electric shock by short circuit

Always use properly earthed mains connections. Do not manipulate any cable or cable connector. Noncompliance could lead to electric shock with danger of serious injuries, death and fire! If you are not sure please contact the specialized company, the contracted maintenance company or the manufacturer

DANGER!
Possible Hearing Damage

The system produces a volume level which could damage your hearing continuously or temporarily while listening to long to headphone or loud speaker sound sources.

Do not reproduce high volume levels for a long time. Reduce the level immediately if any noise in ear or hearing loss occurs.

Note: The level of the alert announcement may not be changed!

CAUTION!
Operating Conditions

The unit is intended for indoor use. To prevent damage do not use this unit near liquids and moisture. Avoid direct sunlight, heavy dirt or strong vibration.

CAUTION!
Power Supply

Verify the mains connection before installation of the unit. Compare local conditions with the information of the schematic diagram.

Initial operation, maintenance and servicing could only be affected by the specialized company, the contracted maintenance company or the manufacturer.

3. Technical Features

The Digital Paging Management Unit DPM-2500 A is a digital signaling audio control unit used to initiate/ manage live paging, audio signal routing and playing pre-recorded audio messages. The unit is ideal for different audio applications including the voice alarm, mass notification (general alarm), background music and professional public address. It is equipped with an internal monitoring of all alarm-relevant parts, internal error logging and permanent monitoring of all PADES® 2000 system buses as well as the audio signal path from the signal source to the loudspeaker line in accordance with the standard requirements of VDE 0828 and EN54 Part 16. The DPM-2500A is equipped with 4 independent (DSP-based) audio input channels. On the output side, you can use four independent preamplifier outputs for DPM -2500 A and DPM-2500B versions. The digital paging management unit is used in combination with DAA amplifiers and DMS-2021A to power multi-independent loudspeaker outputs supporting class A or class A/B wiring.

Up to ten digital selective remote microphone units DPM- 2550 A or DPM-2550 B can be operated with each DPM unit. If a DAM-2550 A system call station is to be connected to the paging management unit, this can be done over TCP/ IP media or RS 485.

The unit can be equipped with a digital Dante-enabled card, model number DMS -2034A. For more details: Review the user manual for DMS-2034A.

The audio signal processing allows the simultaneous operation of 4 independent speech paths in connection with a supplementary software license. With the digital-analog input module, up to 4 monitored digital or analog inputs are available. In order to play a selected input channel with priority, the NF-Digital-1-Channel-Priority-Control-Module is used. Furthermore, an NF-Digital External Volume Control Module allows remote volume control of a selected input channel. On the input side, there are high-performance audio AD converters with 128x oversampling and input channel gain adjustable in 6 dB steps (0 – 42 dB), and on the output side with high-performance audio DA converter with 128x oversampling and switchable output channel gain (0/6 dB) is available. For a professional, unadulterated reproduction of speech and music, each input/output features a five-band parametric equalizer. Each audio input could be configured as a Line or Mic input supporting phantom power input.

The below list describes the control ability of the system :

Number of Loudspeakers- Lines	1000
Number of Lines -Groups	1024
Number of Clock Events	8192
Number of Trigger Events	1024
Number of Events and Fault Logs	2047
Number of Priorities	255 x 255
Number of Signal Chain Entries	512
Number of Remote Paging Microphones DAM-2550A	64
Number of Remote Paging Microphones DPM-2550 A	32

For warranty reasons, all options can only be installed in the factory. All system components are delivered exclusively project related. A purchase of individual components is unfortunately not possible.

4. Operational Controls

Front Panel:
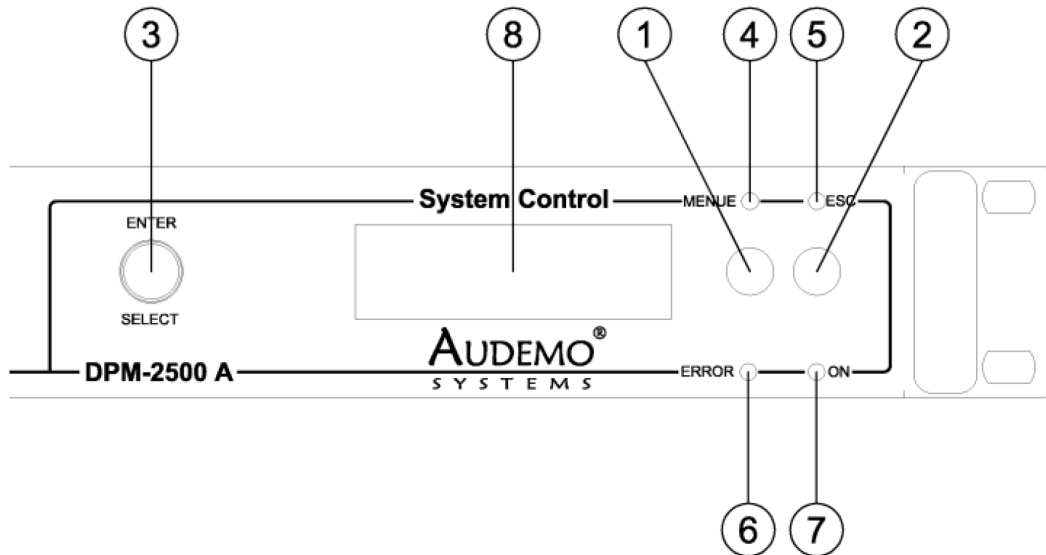
1	**Function Key MENU** Push the key to enter the next submenu.
2	**Function Key ESC** Push the key to leave the submenu to the next higher operating level.
3	**SELECT-Turning Encoder with ENTER-Key Function** Rotate the encoder to change the menu items. The menu driven handling is indicated on the integrated LCD-display. Push the encoder to confirmed a menu item (ENTER).
4	**MENU LED** The green LED MENUE is illuminated on selection of a submenu.
5	**ESC LED** The green LED ESC is illuminated on the possibility to leave a submenu to the next (higher) operating level.
6	**ERROR LED** The yellow LED ERROR is illuminated on each failure of the unit.
7	**ON LED** The green LED ON is illuminated on standby of the unit.
8	**LCD-Display** Display with changing colour in order to indicate an error status of the unit. The display is illuminated yellow if any failure occurs.

Rear Panel:
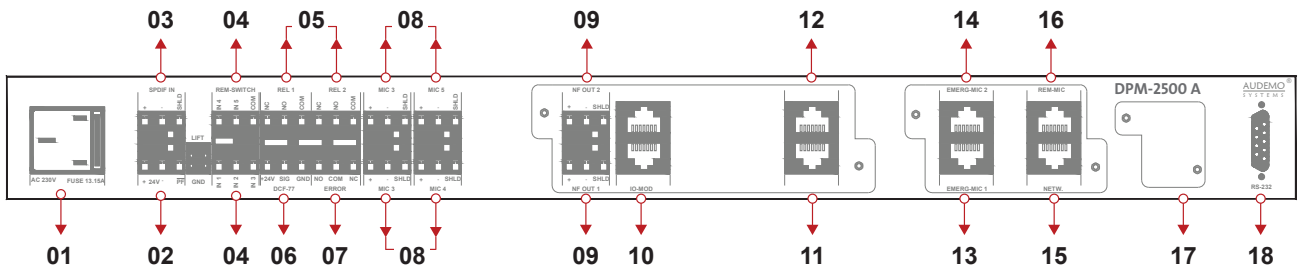
1	240AC 50/60Hz MAIN POWER SUPPLY
2	+24VDC SECONDARY POWER SUPPLY
3	SPDF IN
4	PROGRAMMABLE CONTROL INPUTS(5 INPUTS-NO/NC)
5	PROGRAMMABLE RELAY OUTPUTS
6	GPS PORT
7	ERROR OUTPUT
8	PROGRAMMABLE LINE/MIC INPUTS
9	PROGRAMMABLE LINE OUTPUTS
10	IO-MOD(2 Nos):CONTROL THE DAM-2525 AND DAA-237X RANGE OF AMP+CONTROL AND POWER FOR(DMS-2021A+DMS-2022A)
11	PRIMARY DANTE PORT(DMS-2034A)
12	SECONDARY DANTE PORT(DMS-2034A)
13	WALL MOUNT MICROPHONE (PRIMARY PORT TO DRIVE DAISY CHAIN OF REMOTE PAGING MICRO-PHONES)
14	SECONDARY PORT TO DRIVE DAISY CHAIN OF REMOTE PAGING MICROPHONES
15	ETHERNET PORT (INTEGRATION WITH MODBUS)
16	THIRD PORT TO DRIVE REMOTE PAGING MICROPHONES OR TO DRIVE PoE MICROPHONES
17	PROVISION TO DRIVE PERIPHERAL DEVICES LIKE DPA 2274A /B AND DMS-2041A
18	SERIAL LINK FOR PROGRAMMING

5. Programming DPM 2500x (digital paging module)

The programming is different depending on the internally installed or externally connected modules.

Overview in the Pades2000 Config Tool

Example figure: Tree View Tab

Note: DPM2500 will appear always as DPM-2500B even for DPM-2500A. Serial number will define the version

  5.1) Highlight the serial number under the device displayed

Example figure: Tree view tab with serial number marked

  5.2) Select the device you want to configure in the Config Tool. In this case click on the TAB DPM-2500.

Now you will see the following in the main window:

Example figure: main window with selected TAB "DPM-2500"

6. Setting up speaker lines (Speaker Line)

6.1) DMS-2021A

- Click on the TAB SpeakerLine - SpeaklerLine
- Double click on the first free row in the main window.
- The following window appears:

- Look for your device under Device Type. In this case DMS-2021A
- Enter a serial number if it was not recognized by the system.
- For Relay/Ch-Index, enter the position on the relay to which this line is connected
- Give the line a unique name for "Line Name".
- Enter the index number of your amplifier under AMP index

- Check "Enabled" to activate the line you have configured.
- Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.
- Click OK to apply your settings.

Example image: After setting up several speaker lines

Note: Repeat the process as described in point 6.1 until you have set up all your speaker lines.

6.2) DMS-2061A

- Click on the TAB SpeakerLine - **SpeaklerLine**
- Double click on the first free row in the main window.
- The following window appears:

- Look for your device under Device Type. In this case DMS-2061A
- Enter a serial number if it was not recognized by the system.
- For Relay/Ch-Index, enter the position on the relay to which this line is connected
- Give the line a unique name for "Line Name".
- Enter the index number of your amplifier under AMP index
- Check "Enabled" to activate the line you have configured.
- Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.
- Click OK to apply your settings.

Example image: After setting up several speaker lines

Note: Repeat the process as described in point 6.2 until you have set up all your speaker lines.

6.3) DMS-2068A

- Click on the TAB SpeakerLine - SpeaklerLine
- Double click on the first free row in the main window.
- The following window appears:

- Enter a serial number if it was not recognized by the system.
- For Relay/Ch-Index, enter the position on the relay to which this line is connected
- Give the line a unique name for "Line Name".
- Enter the index number of your amplifier under AMP index
- Check "Enabled" to activate the line you have configured.
- Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.
- Click OK to apply your settings.

Example image: After setting up several speaker lines

Note: Repeat the process as described in point 6.3 until you have set up all your speaker lines.

6.4) DAA-235XX

- Click on the TAB SpeakerLine - SpeaklerLine

- Double click on the first free row in the main window.

- The following window appears:

- Look for your device under Device Type. In this case DAA-235XX

- Enter a serial number if it was not recognized by the system.

- For Relay/Ch-Index, enter the position on the relay to which this line is connected

- Give the line a unique name for "Line Name".

- Enter the index number of your amplifier under AMP index

- Check "Enabled" to activate the line you have configured.

Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.

Example image: After setting up several speaker lines
Note: Repeat the process as described in point 6.4 until you have set up all your speaker lines.

6.5) DAA-236XX

- Click on the TAB Speaker Line - SpeaklerLine
- Double click on the first free row in the main window.
- The following window appears:

- Look for your device under Device Type. In this case DAA-236XX
- Enter a serial number if it was not recognized by the system.
- For Relay/Ch-Index, enter the position on the relay to which this line is connected
- Give the line a unique name for "Line Name".
- Enter the index number of your amplifier under AMP index
- Check "Enabled" to activate the line you have configured.
- Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.
- Click OK to apply your settings.

Example image: After setting up several speaker lines

Note: Repeat the process as described in point 6.5 until you have set up all your speaker lines.

6.6) DAA-237XX

- Click on the TAB Speaker Line - SpeaklerLine
- Double click on the first free row in the main window.
- The following window appears:

- Look for your device under Device Type. In this case DAA-237XX
- Enter a serial number if it was not recognized by the system.
- For Relay/Ch-Index, enter the position on the relay to which this line is connected
- Give the line a unique name for "Line Name".
- Enter the index number of your amplifier under AMP index
- Check "Enabled" to activate the line you have configured.
- Note: The "uses in LineGroup" display does not show any line groups when speaker lines are set up for the first time. This only fills up when you have created line groups, see point 7.
- Click OK to apply your settings.

Example image: After setting up several speaker lines

Note: Repeat the process as described in point 6.6 until you have set up all your speaker lines.

7. Setting up line groups (Line Group)

7.1) DMS-2021A

Here you have the option of grouping together the individual speaker lines that you set up under point 6, for example to play announcements or background music throughout or in parts of the building.

- Click on the TAB Line Group - LineGroup
- Double click on the first free row in the main window.
- The following window appears:

Example illustration: Here you can see the loudspeaker lines configured under point 6.1

- Click on "Enabled" so that your group, which you are now defining, becomes active

- Give your group a unique name in "GroupName". This is important so that you can later assign your groups accordingly. Example: "All Call" for All speaker lines if they select all

- Select the lines you want.

- When you have made your settings, click on "OK". These are then adopted by the system.

Example image: After setting up a line group

Note: Repeat this process, as described under Point 7.1, until you have grouped all the speaker lines you want.

8. Installing the Controller

Unpacking

Unpack your controller and inspect for any damage that may have occurred during transit.

If damage is found, notify the shipping company immediately. Only you can initiate a claim for shipping damage, though AUDEMO-SYSTEMS® will be happy to help as needed. If the product arrived, showing signs of damage, save the shipping carton for the shipper's inspection.

We also recommend that you save all packing materials for use if you ever need to transport the unit. Never ship the unit without the factory carton and packing materials.

9. Connections and additional Possibilities

9.1) Connection of loudspeaker lines

Take care for correct phase relation when you connect any loudspeaker.

Danger! Beware of short circuits and earth fault.

Adjust each speaker with the preset power as noticed in the cabling diagram. Test each single loudspeaker line by a measurement of line impedance at 1000 Hz (Z-Meter with tone-signal) with exact protocolling of the result.

10. Options

Order number	Description	Max. extension per unit
DPM-2500A	Digital-Audio- Paging-Controller	
DPM-2500B	Digital-Audio -Paging- Controller	

All options could only be assembled ex works. All components of the electroacoustic system could only be delivered referring to a project. Unfortunately, there is no possibility of buying single components.

11. Technical Specifications

Frequency range	20- 20000Hz
Gain Control	-42 dB
Signal-to-noise ratio	>92 dB
Harmonic distortion	< 0.01 %
DSP resolution	32 bit
Dynamic range (DSP)	192 dB
D/A converter – resolution	24 bit
Dynamic range (D/A converter)	118 dB
A/D converter – resolution	24 bit
Dynamic range (A/D converter)	106 dB
Output voltage	220-240 V AC, 50 /60Hz
Emergency Power	24 VDC
Dimensions (W × D × H)	483 × 44 × 300 mm (1U)
Weight	4.7 kg
Protection rating	IP30
Temperature range (operation)	-5 to +55°C

12.   Environment Protection

In any case of replacement, the substituted unit is taken back from the manufacturer.

This product is subjected to European directive 2002/96/EG and 2012/19/EU (WEEE-directive). Dispose this product never with your domestic waste.

Dispose a control center system with an accredited waste disposal company or your
local disposal facility. Take care of applicable regulations. In case of doubt please contact your local disposal facility.

User Manual DPM-2500A Version 01052023