Operation Manual

Commercial Series

DMA 8X8

DSP MATRIX

Keep these important operatin instructions.
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General Information

DMA 8x8 Operation Manual

Ver.: 1.1_UK 11/2022

The information contained in this manual has been carefully checked for accuracy, at the time of going to press, however no guarantee is given with respect to the correctness.

Exel Acoustics SL accepts no responsibility for any errors or inaccuracies that may appear in this manual or the products and software described in it. Technical specifications, dimensions, weights and properties do not represent guaranteed qualities. As manufacturers we reserve the right to make alterations and modifications within the framework of legal provisions, as well as changes aimed at improving quality.

EXEL ACOUSTICS SL

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IMPORTANT SAFE INSTRUCTIONS

Before using our product, be sure to carefully read the manual and safe Instructions. Keep this document with the device all time.

1. Read these instructions
2. Keep these instructions.
3. Heed all warnings.
4. Follow all SAFETY INSTRUCTIONS as well DANGER and OBLIGATION warnings.
5. Only use attachments / accessories specified by Exel Acoustics SL.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with Exel Acoustics' instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
10. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one more wide than the other. A grounding type plug has two blades and a third pin are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Service is required when the apparatus has been damaged in any way, such as power-supply cord or plug damaged, liquid has been spilled or objects have fallen into the apparatus, this apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

CAUTION: To reduce the risk of fire of electric shock, do not expose this device to rain or moisture.

14. Use the mains plug to disconnect the device from mains.
15. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
16. The mains plug of the power supply cord shall remain readily operable.
17. Do not connect the unit's output to any other voltage source, such as battery, mains source, or power supply, regardless of whether the unit is turned on or off.
18. Do not remove the top (or bottom) cover. Removal of the cover will expose hazardous voltages. There are no user serviceable parts inside and removal may void warranty.
19. If the equipment is used in a manner not specified by the Exel Acoustics, the protection by the equipment may be impaired.

CAUTION: Do not remove any covers, loosen any fixings or allow items to enter any aperture

CAUTION: The rear of the product may get hot. Avoid direct skin contact during operation and for at least 5 minutes after power has been isolated.

CAUTION: The product must only be positioned at floor level when operated in a horizontal position.

IMPORTANTES INSTRUCCIONES DE SEGURIDAD

Antes de usar este producto, asegúrese de leer cuidadosamente el manual y las instrucciones de seguridad.

1. Lea estas instrucciones.
2. Conserve estas instrucciones.
3. Respete y siga todas las advertencias.
4. Siga todas las INSTRUCCIONES DE SEGURIDAD, así como las advertencias de PELIGRO y OBLIGACIÓN.
5. Utilice solo accesorios autorizados por Exel Acoustics SL.
6. No use este aparato cerca del agua.
7. Limpiar solo con un paño seco.
8. No bloquee las aberturas de ventilación e instalar de acuerdo con las instrucciones de Exel Acoustics.
9. No instale el aparato cerca de fuentes de calor tales como radiadores, calefactores estufas u otros aparatos que produzcan calor.
10. Esta unidad debe ser conectada mediante un cable de alimentación de 3 hilos. Por razones de seguridad, LA CONEXIÓN A TIERRA NO DEBE DESCONECTARSE EN NINGUNA CIRCUNSTANCIA.
11. Proteja el cable de alimentación de ser pisado o aplastado, especialmente los enchufes, receptáculos y en el punto en el que salen del aparato.
12. Desconecte este aparato durante tormentas eléctricas, terremotos o cuando no vaya a emplearse durante largos periodos.
13. Confíe las reparaciones a personal cualificado. Se requiere servicio cuando el aparato ha sido dañado de alguna manera como por ejemplo si el cable de alimentación o el enchufe está dañado, se ha derramado líquido o han caido objetos dentro del aparato, el aparato ha sido expuesto a lluvia o a la humedad, no funciona con normalidad o se ha caído.

PRECAUCIÓN:Para reducir el riesgo de incendio por desgarga eléctrica, no exponga este aparato a la lluvia o a la humedad.

14. Desconecte completamente este aparato de la red eléctrica desconectando el cable de alimentación.
15. No exponga este equipo a salpicaduras ni coloque sobre él objetos que contengan líquidos, tales como vasos o botellas. Equipo IP20.
16. El enchufe o la conexión a red debe ser facilmente accesible.
17. No conecte la salida de la unidad a ninguna otra fuente de voltaje, como batería o fuente de alimentación independientemente de si la unidad está encendida o apagada.
18. No retire la cubierta superior (o inferior). La retirada de la cubierta lo expondrá a voltajes peligroso. No hay piezas reparables por el usuario en el interior y su extracción podría anular la garantía.

PRECAUCIÓN: No retire la cubierta, afloje tornillos o permita la entrada de elementos por ninguna abertura

PRECAUCIÓN: La parte trasera del equipo puede calentarse. Evite el contacto directo con la piel durante su funcionamiento y durante, al menos, 5 minutos después de que se haya apagado

PRECAUCIÓN: El equipo solo debe colocarse en el suelo cuando se opera en posición horizontal.

19. Si el equipo se utiliza de la forma no especificada por Exel Acoustics, la protección del equipo puede verse afectada.

SYMBOL USED

Warning

This simbol indicate **Risk of injury**. It is essential to observe this warning. Non-compliance can lead to serious injury or death.

Este símbolo indica **Riesgo de lesiones**. *Es fundamental observar esta advertencia. Su incumplimiento puede provocar lesiones graves o la muerte.*

Caution

This simbol indicate **Personal injuries**. It is essential to observe this warning. Non-compliance can lead to minor or slight injury.

Este símbolo indica ***Lesiones personales.*** *Es fundamental observar esta advertencia. Su incumplimiento puede provocar lesiones leves.*

Notice

This simbol indicate **Damage to the devices** or environment. It is essential to observe this warning. Non-compliance can lead to damage to property or equipment or environmental damage.

Este símbolo indica ***Daños a los dispositivos o al medio ambiente****. Es fundamental observar esta advertencia. Su incumplimiento puede provocar daños al equipo o daños al medio ambiente.*

tip or pointer

This simbol indicate **information** that contributes to better understanding.

Este símbolo indica ***Información*** *que contribuye a una mejor comprensión del producto.*

AVERTISSEMENT DE SECURITE

Pour déconnecter l'appareil de l'alimentation principale de façon permanente, débranchez le connecteur du câble fourni à l'arrière de l'appareil.

Ne retirez pas les couvercles, ne desserrez pas les fixations et ne laissez aucune pièce s'introduire dans les ouvertures.

Ne placez pas d'objets contenant du liquide à proximité de l'appareil.

Ne remplacez le fusible de réseau principal que par un fusible du même type.

Le radiateur arrière de cet appareil devient chaud. Evitez tout contact direct avec la peau pendant le fonctionnement et au moins 5 minutes après la mise hors tension de l'appareil

STANDARDS

FOR CUSTOMERS IN EUROPE

This product complies with both the LVD (electrical safety) 73/23/EEC and EMC (electromagnetic compatibility) 89/336/EEC directives issues by the commission of the European community.

Compliance with these directives implies conformity with the following European standards:

EN60065	Product safety
EN55103-1	EMC emissions
EN55103-2	EMC immunity

This product is intended for the following electromagnetic environments: E1, E2; E3 & E4.

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green and yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 2m long, have a 2.5mm2 CSA, a 300/500V rating and comply with EN50525-2-11 / H05W-F.

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

FOR CUSTOMERS IN THE USA

This product has been tested for electrical safety and complies with UL60065 7th edition

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

DECLARATION OF CONFORMITY WITH FCC RULES

We, EXEL Acoustics SL, CL Encinar 282, Pol. Ind. Monte Boya, 45950 - Casarrubios del Monte (Toledo), España, declare under our sole responsibility that this family of devices, complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FEDERAL COMMUNICATIONS COMMISSION NOTICE

An example of this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential and commercial installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FOR CUSTOMERS IN THE CANADA

This product complies with CA /CSA C22.2 No.60065-03
Ce produit est conforme avec CA /CSA C22.2 No.60065-03

THIS PRODUCT MUST BE EARTHED. Use only a flexible cable or cord with a green or green / yellow core which must be connected to the protective earthing terminal of a suitable mains plug or the earthing terminal of the installation. The cord must be a maximum of 6' long, be 14AWG, have a rating SJ, SJT, SJE or 300/500V H05W-F and be marked VW-1.

CE PRODUIT DOIT ÊTRE MIS À LA TERRE. Utilisez uniquement un câble souple avec un noyau vert ou vert / jaune qui doit être relié à la borne de terre de connecteur d'alimentation ou la borne de terre de l'installation. Le cordon doit être un maximum de 6' (2m) de long, 14 AWG (2.5mm2 CSA), être classé SJ, SJT, SJE ou 300/500V H05W-F et être marquée VW-1.

THIS PRODUCT IS DESIGNED FOR PERMANENT INSTALLATION. It must be fitted in to a 19" rack enclosure and not operated unless so installed. The rack enclosure should be open at the front and back to allow free ventilation and movement of air through the product.

CE PRODUIT EST CONÇU POUR UNE INSTALLATION PERMANENTE. Il doit être installé dans un boîtier rack 19-in. Le rack devrait être ouvert à l'avant et l'arrière pour permettre la ventilation et le mouvement d'air libre à travers le produit .

DECLARATION OF CONFORMITY WITH CANADIAN ICES-003

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

DECLARACIÓN DE CONFORMIDAD
DECLARATION OF CONFORMITY

EXEL ACOUSTICS SL

CL Encinar, 282. Polígono Industrial Monte Boyal. 45950 – Casarrubios del Monte (Toledo), España (Spain).

Declara que el procesador DMA 8x8 y sus respectivas opciones, cumple con los objetivos de las Directivas:

Declare under our sole responsibility that the DMA 8x8 amplifier products comply with relating Directives:

(1) Directiva de Baja Tensión - 2014/35/UE
(2) Directiva de Compatibilidad Electromagnética - 2014/30/UE
(3) Directiva RoHS - 2011/65/UE
(4) Directiva RAEE - 2012/19/UE

CE

(1) Low Voltage Directive 2014/35/EU
(2) EMC 2014/130/EU
(3) RoHS Directive 2011/65/EU
(4) WEEE Directive 2012/19/EU

Y es conforme a las siguientes Normas Armonizadas Europeas:
In compliance with these Harmonized European Norms:

(1) EN60065 8th. Audio, video and similar electronic apparatus. Safety requirements.
(2) EN55032:2012. EMC emissions & immunity.
(3) EN55035-2017

Table of Contents

1. Welcome and unpacking

1.1. Welcome to Tecnare

Thank you for choosing a Tecnare® **DMA 8X8** fully programmable digital audio matrix for your application.

Please spare a little time to study the contents of this manual, so that you obtain the best possible performance from this unit.

All Tecnare® products are carefully engineered for world-class performance and reliability.

If you would like further information about this or any other Tecnare® product, please contact us. We look forward to helping you in the near future.

As part of a continuous evolution of techniques and standards, Exel Acoustics SL as manufacturer of Tecnare® products reserve the right to change the specifications of its products and the content of its documents without prior notice.

Updates and supplementary information are available on the Tecnare® website:

http://www.tecnare.com

Tecnare Technical Support is available at:

- (T): +34 918 170 110 - +34 918 171 001
- (e-mail): support@tecnare.com

Thank you again for placing your confidence in Tecnare® products.

1.2. Unpacking

After unpacking the unit please check carefully for damage. Every Tecnare product is tested and inspected before leaving the factory and should arrive in perfect condition. If damage is found, please notify the carrier concerned at once. You, the consignee, must instigate any claim. Please retain all packaging in case of future re-shipment.

1.3. The User Guide

This user manual gives a progressively more detailed description of the functions of the Tecnare DMA 8X8 Matix processor.

A detailed explanation describes each individual function or feature with annotated images explaining its use is contained in the next sections. Where appropriate, the graphical display is shown to further elaborate on the unit operation.

To complete the manual a reference section is included, describing the technical performance and Mechanical drawing of the device.

2. Overview

2.1. Introduction

The DMA 8X8 is equipped with several core technical features to facilitate the work of audio engineers. DSP-based remote audio equipment is routed, processed and controlled by computer.

The Tecnare DSP Controller is a Windows-based application, which is used to conduct configuration and control of DSP hardware. DSP Controller has 16 built-in presets, and the modules and sequences for each preset can be flexibly designed in accordance with the designer's requirements. After the design is finished, it can be saved for future use. The sequences and parameters of DSP Controller's built-in processing modules accord to most of the application scenarios without any change.

DSP Controller is a full-featured application, including the parameter adjustment and peripheral accessory settings of all modules, such as RS232, RS485, click-and-drag panel configuration and optional Dante network audio control. The most interesting part is the user interface, which allows the engineer to customize user interface so that the Integrator can edit it or the on-site technicians or end users who have no idea of relevant techniques can operate it. Superior safety functions make it possible for the end users to access to the controls allowed by the engineer or designer.

2.2. Key features

- ***DANTE® network audio optional***
- ***Network TCP / IP control, can realize management of multiple devices***
- ***8 balanced MIC/LINE inputs (independent phantom power per input channel)***
- ***8 balanced LINE outputs***
- ***Built-in ADI SHARC DSP 21489***
- ***4 GPIO control ports (General Purpose Input / Output)***
- ***Programming and remote management via Ethernet Using Tecnare DSP Controller (also point-to-point, with a direct CAT5 cable, or from an Ethernet network)***
- ***Remote control bus for DMA digital Panel***
- ***16 Configuration memory presets***
- ***Extensive DSP available:***
    - ***Routing matrix/mixer, from any input to any output with adjustable level, crossover points (independent mixes of different inputs for each output)***
    - ***Link channel processing***
    - ***Level control, muter, meters, polarity and input sensitivity selector for inputs and outputs***
    - ***Internal signal generator (sine, white and pink noise) for input***
    - ***Parametric EQ on inputs and outputs***
    - ***Expander, compressor, Auto Gain Control and Feedback Inhibition for each input channel***
    - ***Delay and limiter setting for each output channel***
    - ***Automixer***
- ***USB Soundcard***

2.3. Front and Rear Panel

2.3.1. The Front Panel and LED indicators

The DMA 8X8 system is designed to be mounted in a standard 19”/1HU rack enclosure.

Fig. 1 Front panel

Fig. 2 Front indicators LED

On the front panel, an LED (PWR) lights up when the unit is switched on. A second LED (STATUS) indicates the operation status of the device.

- ***Status LED indicator (STATUS):***
  - If the device is switched on and the device is configured, the LED continuously toggles between green and unlit even if it is not connected to Ethernet.
  - If the device is switched on and it has been “reset to default” or “Restore to Factory Setting”, the LED would be on permanently.

2.3.2. The Rear Panel

The rear panel of the DMA 8X8 offers 8 balanced analogue signal inputs accepting both line and mic level signals, 8 analogue signal output, an RJ45 type connector, a GPIO for 0-5 Vdc continuous control voltage, RS-232 & RS485 port, USB audio port and Power connector.

Fig.3 Rear panel

- ***Main socket:*** 230 Vac / 50Hz; 40W
- ***Ethernet Connector (RJ45):*** 10/100 Base-T Ethernet connector is used for IP-based PC Software and host and third-party accessory controller.
- ***GPIO:*** 6-bit 3.81mm terminal. 4 input/output contacts to be assigned to different functions.
- ***RS-485:*** Used as serial communication port A-B that’s connects to a third-party control device. The *Port setting* should comply with the following specifications: 115200 baud (default), 8 data bits, 1 stop bit, no parity, no flow control.
- ***RS-232:*** Used for the serial communication port Tx = sending or data output or Rx = receiving or data input that connects to a third-party control device. The Serial Port setting should comply with the following specifications: 115200 baud (default), 8 data bits, 1 stop bit, no parity, no flow control.
- ***USB Audio Port:*** USB soundcard (1-in-1-out), which can be used to play audio or for recording function.
- ***Signal Input & Output terminal:*** Signal input and output connectors are 3 position screw terminal block.

3. Connections

3.1. Audio Input Connections

The rear panel of DMA 8X8 offer 8 balanced analogue MIC/LINE inputs. It features a couple of removable balanced 12 pin Phoenix terminal strips.

Fig 4. Input & Output Phoenix terminal

Analog input section supports microphone or line-level signals whit nominal levels of 0dBu, 10dBu, 20dBu, 30dBu, 40dBu and 43dBu. +48VDC phantom power can be adopted for each input. Preamp gain and phantom power can be easily controlled through the Tecnare DSP Controller.

Fig. 5 Input source setting on the Tecnare DSP Controller Software

3.2. Audio Output Connections

The rear panel of DMA 8X8 offer 8 balanced analogue MIC/LINE inputs. It features a couple of removable balanced 12 pin Phoenix terminal strips.

Unit gain (0dB) is set through volume control, and the analogue output section is corrected to +4dBu with 20dB headroom. That is to say, 0dBFS digital signal is equivalent to +24dBu output signal. If other signal levels are required, you may change the volume to achieve it.

3.3. Audio Wiring Reference

- ***Balanced Connection***

The HOT, + or 'in phase' connection should be made to pin + on the terminal strips or pin 2 of the XLR connector.

The COLD, - or 'out of phase' connection should be made to pin - on the terminal strips or pin 3 of the XLR connector.

GND Pin, corresponding with Pin 1 of the XLR connectors is internally connected to the chassis.

The shield of the input cable should always be connected Pin 1 to ensure the EMC performance and regulations are met.

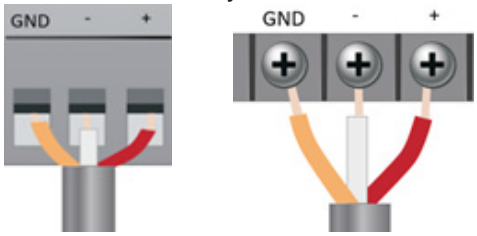

Fig. 6 PIN assignment DMA 8X8 Analogue Input/Output - Balanced connection

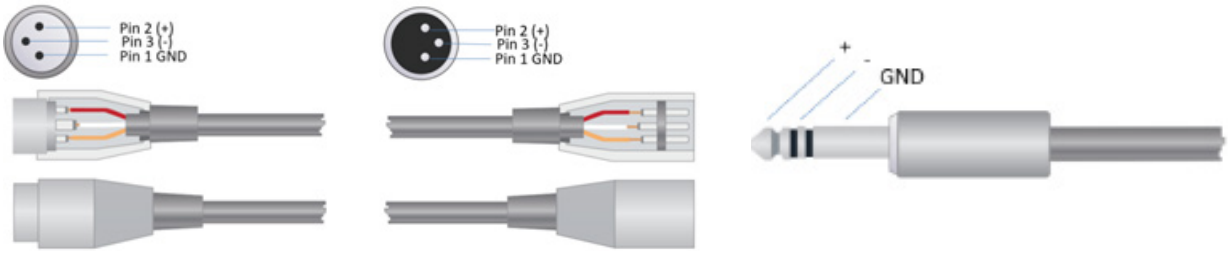

Fig. 7 Balanced wiring of different connectors

Note: For one XLR interface, the female connects to the output device and the male connects to the input device.

- ***Using unbalanced connection***

Please note that the use of unbalanced connections is not recommended, however when connecting the matrix to an unbalanced audio source, the signal conductor should be connected to XLR pin2. The 'Cold' conductor or cable screen should be connected to pin 1 with a short connection made between pin 1 and pin3 as shown in Figure 8.

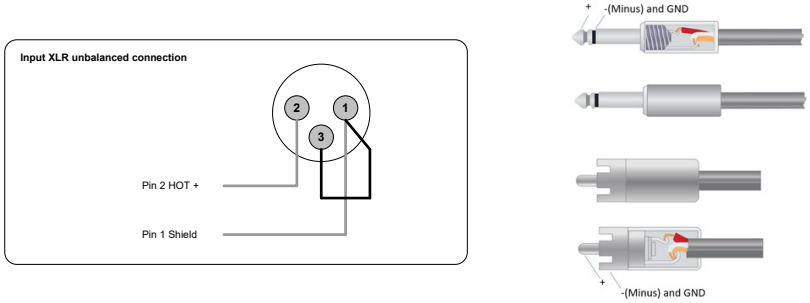

Fig. 08: Balanced to Unbalanced Analogue wiring and PIN out.

3.4. ETHERNET port for programming and control

An RJ45 type (fig.9), 10/100 Base-T connector, allows connecting the equipment to an Ethernet network through an IP-based Windows application.

- ***Management of Tecnare DSP Controller application. Please, refer to the Tecnare DSP Controller software manual for more information.***
- ***Possibility of direct connection (point-to-point) between a computer and a DMA 8X8 device.***

3.4.1. Connecting the DMA 8X8 to the Tecnare DSP controller Software

Install the ***Tecnare DSP Controller*** software in your Computer and connect it on the same network of DMA 8X8.

Launch the software and go to **"Device List"** menu (fig.10) on the upper right corner, and wait while the connected DMA 8X8 appears.

In order to connect to the DMA 8X8 its IP address must be set in the same range as the network IP address. By default it is configured with the IP address: **169.254.10.227**. To change the IP address of the device, pressing "Set IP" from the "Device List" menu and set it according your network configuration. If it is already configured correctly, then make click on "Connect" and the software will sync with the DMA 8X8.

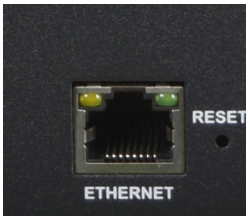

Fig. 9 Ethernet Port

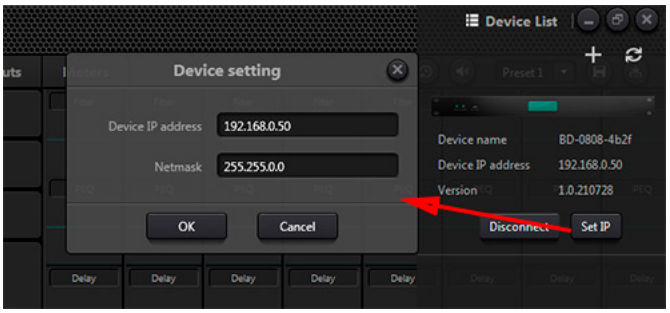

Fig. 10 Device List and IP Setting

Once the device has been connected and synchronized, you will be able to manage and configure all the system parámeters, identify every device connected to the network in real time together the digital wall panels as well as load and store presets.

Note: Please refer to the Tecnare DSP Controller Software for more information.

3.5. RS-232 Remote control Port

The built-in RS-232 port in the rear panel (fig.11) allows an external device to communicate with an DMA 8X8 unit via a serial connection.

The serial connection should comply with the following specifications:

Baud Rate: 115200 (default)
Data bits: 8
Parity: None
Stop bits: 1
Flow Control: None

Wiring RS232-DB9		
RS232		DB9
Tx	Sending or Data Output	Pin 2 (RxD)
Rx	Receiving or Data Input	Pin 3 (TxD)
GND		Pin 5 (Signal GND)

Fig. 11 RS-232 & RS-485 control Ports

3.6. RS-485 Remote control Port

The built-in RS-485 port in the rear panel (fig. 11), used for serial communication (Tx= sending or data output; Rx = receiving or data input) allows the communications with a third-party control device.

RS485 can be used for voice tracking control (or other output commands), or for bus input control. A central command can be used to conveniently integrate it into your software.

Baud Rate: 115200 (default)
Data bits: 8
Parity: None
Stop bits: 1
Flow Control: None

Wiring RS232-DB9		
RS485		DB9
A	Tx Data -	Pin 3 (TxD/RxD-)
B	Rx Data +	Pin7 (TxD/RxD+)
GND		Pin 5 (Signal GND)

3.7. GPIO Remote Control Port

The rear panel of the DMA-8X8 offers 4-channels, logic input/output that allows independent input or output configuration.

Each input is a 0-5 VDC continuous control voltage, and can be connected to an external physical device.

Each output is a 0-5 NO/NC (normally open / normally closed) relay output. These outputs may be assigned by the logical output control module of the software. Polarity and threshold can be definde as well.

Fig. 12 RS-232 & RS-485 control Ports

3.8. USB Soundcard

USB Soundcard is used for recording and broadcasting audio using personal computers.
The cable used is Type-B USB (Fig.13). For initial connection, "*Found New Hardware*" will pop up on computer screen, and the driver will be installed automatically. After installation, USB sound card will appear in the computer soundcard list. Users may select USB soundcard in soundcard setting at software playlist.

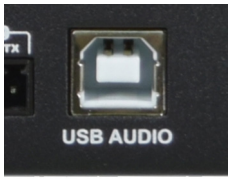

Fig. 12 USB Port

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4. Typical Application Example

A capacitor microphone can be connected to the matrix, and this to an amplifier. Two kinds of remote controls can be daisy chained to various areas for personnel attending in preset setup, volume control, source selection and other functions can be performed via UDP.

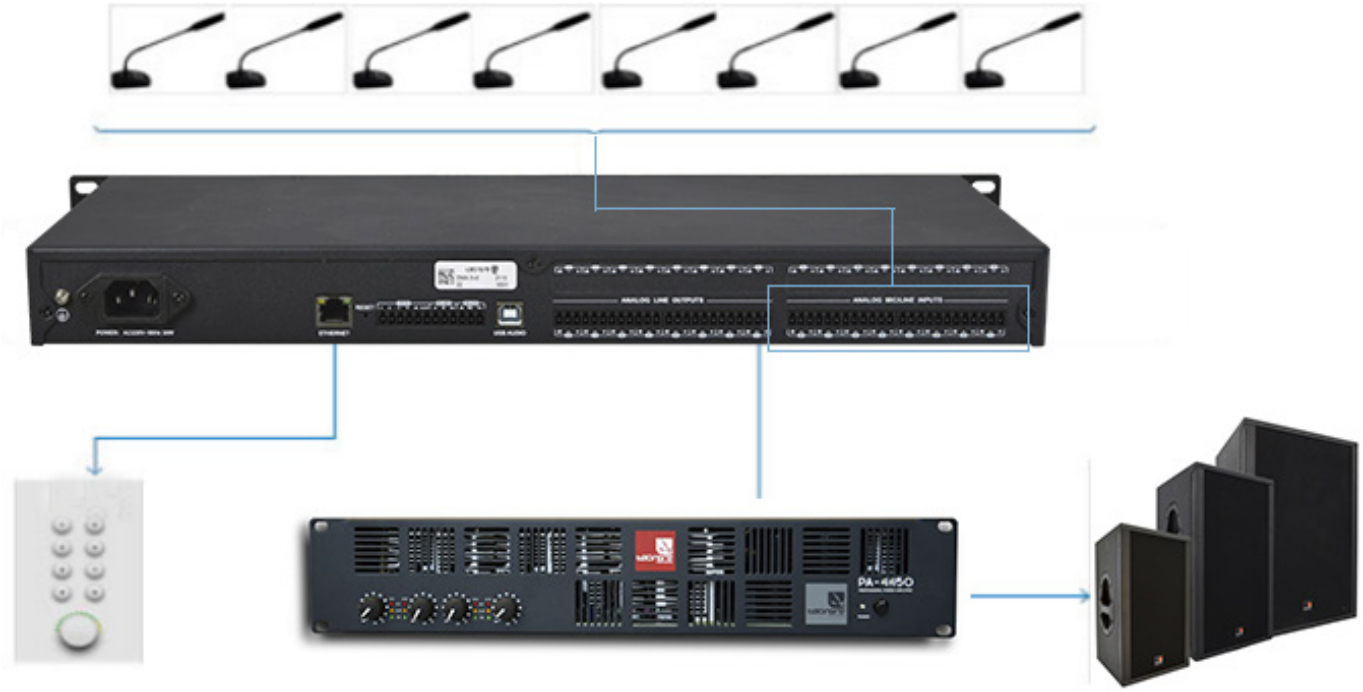

Fig. 13 Application Example

5. Key Panel

The Control Panel must be connected to the system through Ethernet and supplied by PoE.

It has 8 keys and one rotary knob on key panel. The knob is used to adjust gain, and 8 keys can be used to set different functions through programming. These include volume adjustment, mute, preset and command. Configuration will be carried out through the software.

Fig. 15 Key Panel Panel A-DMA8X8

5.1. Operations

1. Key indicator stays on, which indicates the key is configured with mute function.
2. Key indicator keeps flashing, which indicate the key is configured with gain function. To set the gain, use the rotary knob. It can be set between -72dB and +12dB. 13 LEDs indicators around the rotary knob indicate gains.
3. A sudden flash happens when pressing the key indicator indicates the key is configured with preset or command function.

6. Oled Screen

The Control Panel must be connected to the system through Ethernet and supplied by PoE.

OLED Control Panel consists of a 1.3” OLED screen and one Encoder knob. OLED screen will show a classification based to a menu. There is a total of three types of items including menu, buttons and presets. Configuration will be carried out through the software.

Fig. 14 Oled Screen - Panel B-DMA8X8

6.1. Operations

4. It Display panel name and IP address on the screen. Turn the knob left or right to switch menu.
5. Press the encoder button, and the second row on the menu interface starts to flash, which indicates that it enters edit mode.
6. Turn the encoder left or right to change the value.

7. Technical Specifications

AUDIO

Input impedance	9.4 kΩ balanced
Output impedance	102 Ω balanced
Input Gain	0/6/12/18/24/30/36/42/48 dBu
Input Level	0/-6dB
Max Level	+24dBu
Frequency Response	20Hz - 20kHz+/-0.2dB
THD+Noise	0.003% @4 dBu
Dynamic Range	110 dB
Background Noise (A-weighted)	-91 dB
Channel Isolation	108 dB @1kHz
Phantom Power	+48V

INDICATORS, CONTROL & COMMUNICATIONS

Front panel:	
Monitoring facilities	Power
	Status
Rear panel:	
Network and control	Ethernet
Control Protocols	RS-232, RS-485 and UDP (transport layer)

DSP

Processor	ADI SHARC 21489
Sample Rate	48khz/24bits
Work Mode	Stereo, Bridge, Mono, Free Matrix
System Delay	<3 ms

POWER SUPPLIES

Input voltage	AC 230 v / 50-60 Hz nominal +/- 10% (110v optional using TRF-
Max Power Consumption	<40 W

THERMAL

One variable speed fan. Airflow is from right to left.

PHYSICAL

Height	1HU, 44mm
Width	482mm, 19” (front panel)
	440mm, 17,32” (rear chassis)
Depth	200mm, 7,87” (behind rack)
Weight	3 Kgs, 6.61 pounds

CONNECTIONS

Mains	IEC-C14
Audio input	2 x 12 pin Phoenix Terminal
Output	2 x 12 pin Phoenix Terminal
USB	Type B (peripheral type)
Network and Com.	1x RJ45 socket; TCP/IP, 1000base-T/100base-TX
	RS485/RS232 via 3 input/output Phoenix Terminal
	GPIO via 6 input/output Phoenix Terminal

PANEL A-DMA8X8

Description	Remote control
Control	8 x button 1 x Rotatory button
Communication	Ethenet
Power Supply	PoE (not included)
Colour	White
Dimensions (WxDxH)	96 x 33 x 156 mm
Shipping weight	550g

PANEL B-DMA8X8

Description	Remote control
Control	1 x Encoder button
Communication	Ethenet
Power Supply	PoE (not included)
Colour	White
Dimensions (WxDxH)	
Shipping weight	550g

REGULATORY COMPLIANCE

This product complies with the EMC & LVD directives as issued by the Commission of the European Community. Compliance with these directives implies conformity with the following European standards:

EN55103-1 Electromagnetic Interference (Emission)
EN55103-2 Electromagnetic Susceptibility (Immunity)
EN60065 Electrical safety
DMA8X8 also meets the requirements of FCC part 15B.

Reinventing The Rules

***DMA 8X8 DSP MATRIX** Operation manual*

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