KA line KA10

user's manual

CONTENTS

KA line **KA10**

1. INTRODUCTION

Congratulations on your purchase of the K-Array KA10.
The KA professional rack amplifier line has been designed to give answers to all the needs of touring and installation applications in which a large amount of power is needed together with the maximum flexibility, over low sizes and weight. The sophisticate electronics on-board allow to reach outstanding output power levels with over-high efficiency. DSP on-board can provide perfect signal processing for all K-array products, providing safe working conditions and a large choice of dedicated presets to solve the most parts of the needs of high-end applications. A dedicated remote control ensures a constant connection with all the units, allows the total management of the presets installed and the possibility of the download of new ones.

2. UNPACKING

Each K-array device is built to the highest standard and thoroughly inspected before leaving the factory. Carefully inspect the shipping carton before opening it, and then examine and test your new loudspeaker. If you find any damage immediately notify the shipping company. Only the consignee may institute a claim for damages incurred in shipping. It is suggested that you retain the original packaging so that the amplifier can be repacked at a future date if necessary.
Please note that K-array and its distributors cannot accept any responsibility for damage to any returned product through the use of non-approved packaging.

3. SYMBOLS

This symbol, wherever it appears, alerts you to important operating and maintenance istructions in the accompanying literature. Read the manual!	Warning! Dangerous voltages: RISK .	This device complies with Restriction of Hazardous Substances Directive.
Separate collection of electrical and electronic devices. For information about the disposal of Waste Electrical and Electronic Equipment (WEEE), please refer to the website at www.scanning.datalogic.com	The item meets all the essential "Health and Safety" requirements of the revelant European Directives.	This symbol alerts the user to the presence of recommendations about product's use and maintenance.

4. WARRANTY

K-array KA 10 are warranted against manufacturing defects in materials or craftsmanship over a period of **2 years** from the date of original purchase. During the warranty period K-array will, at it's discretion, either repair or replace products which prove to be defective provided that the product is returned in its original packaging, shipping prepaid, to an authorised K-array service agent or distributor. K-array cannot be held responsible for defects caused by unauthorised modifications, improper use, negligence, exposure to inclement weather conditions, act of God or accident, or any use of this product that is not in accordance with the instructions provided by K-array.

K-array is not liable for consequential damages.

This warranty is exclusive and no other warranty is expressed or implied.

This warranty does not affect your statutory rights.

Contact your dealer or distributor for repair or replacement.

5. SAFETY

⚠ WARNING ⚠

• To reduce the risk of electric shock, disconnect the amplifier from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.

• Connect the amplifier to a two-pole, three wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.

• Do not install the amplifier in wet or humid locations without using weather protection.

• Do not allow water or any foreign object to get inside the amplifier. Do not put objects containing liquid on, or near, the unit.

• To reduce the risk of overheating the amplifier, avoid exposing it to direct sunlight. Do not install the unit near heat emitting appliances, such as a room heater or stove.

• No naked flame sources such like lighted candles should be placed on the device.

• The amplifier should be placed so that its location does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, carpet, or similar surface that may create an obstacle for the ventilation openings.

• CAUTION, RISK OF ELECTRIC SHOCK, DO NOT OPEN. This amplifier contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user serviceable parts. Repairs should be performed only by factory trained service personnel.

• Be sure that both voltage set by the selector on the device and AC Power have the same value.
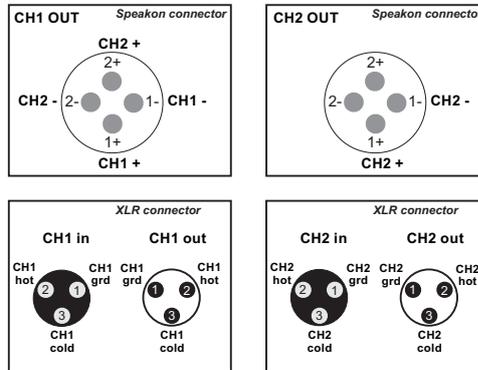
6. FEATURES

! Over-light weight

! Compact design, 2U rack for 4 chs

! Optical limiters

! Electronically protected

! Over-high efficiency

! DSP on-board to drive all K-array products

! Remote control and dedicated management software

! Top quality components for outstandig performances

! Aluminium frame

7. INCLUDED ACCESSORIES

- 2 Rack adapters
- 2 xlr Neutrik cable mt. 0,5
- 1 Lan cable, 8 poles cat5
- 1 adjustment pen screwdriver
- 1 software and utilities CD
- 1 User's manual

8. WIRING

9. REQUIRED VOLTAGE

KA 10 operates safely and without audio discontinuity if the AC voltage stays within either of two operating windows: 95-125 (voltage selector on 115 V) or 195-250 V (voltage selector on 230 V), at 50 or 60 Hz.

The device is default set to be connected to 230 V AC Power. To use the device on a 115 V AC Power you need, before connecting it, to move the voltage selector's cover, just loosening the two screws, and to choose the correct use voltage by the red switch. Be sure that both voltage set on the selector and AC Power have the same value . Always close the voltage selector's cover before connecting the device to AC Power. Change the label that points out the correct voltage in use.
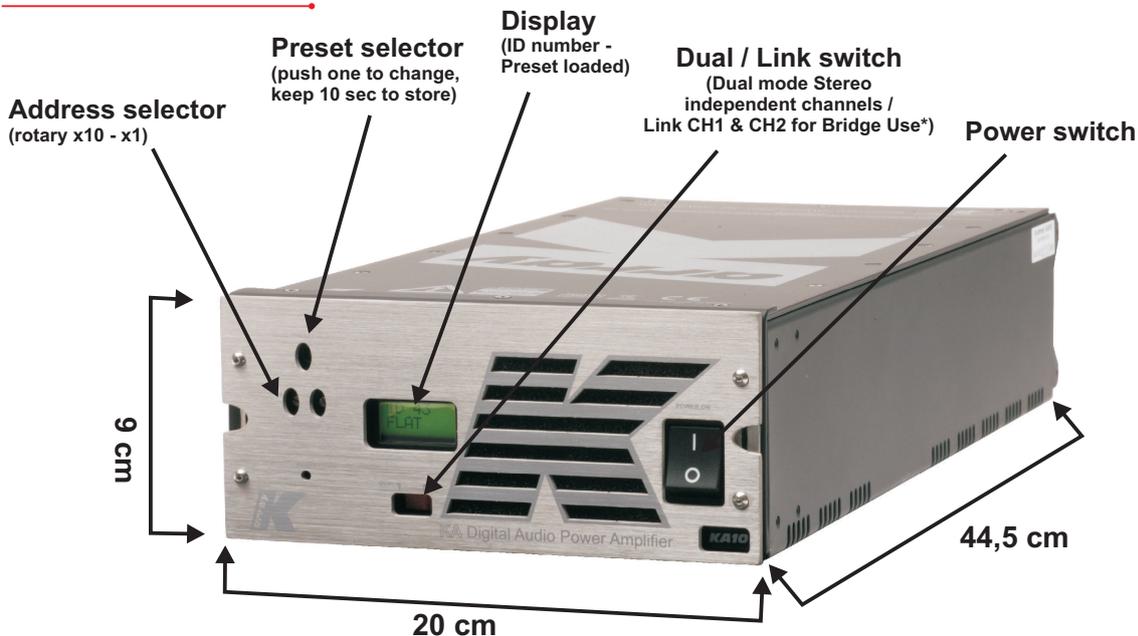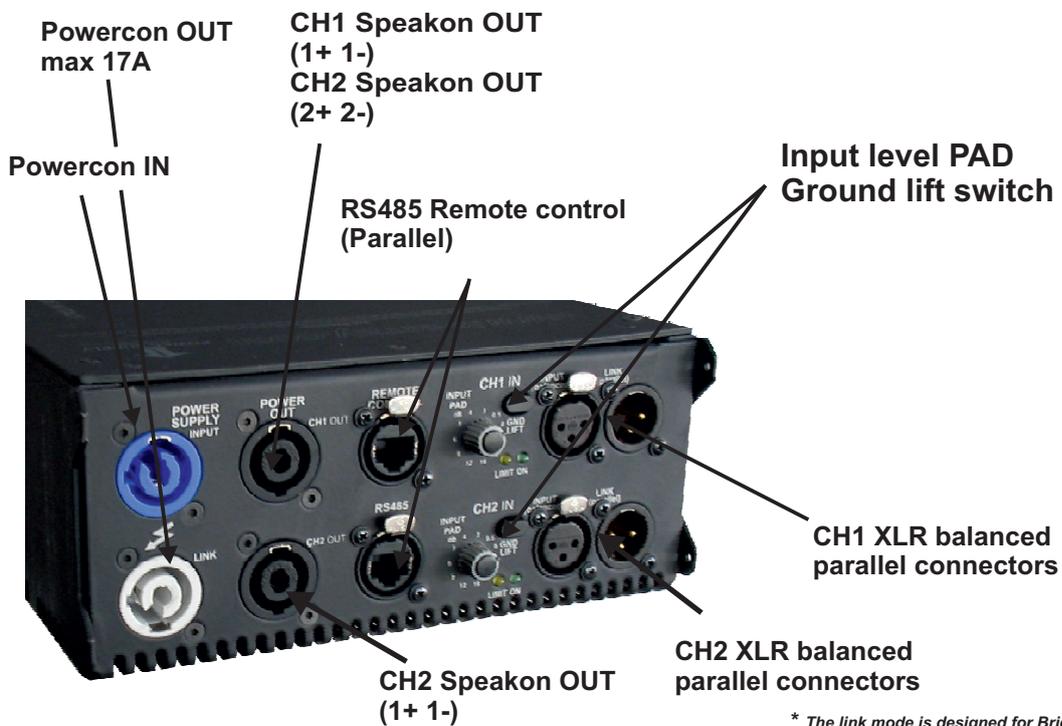
CAUTION

Connecting a 115V system on a 230V AC Power causes heavy damages to the device and serious risk for users .

10. FRONT PANEL

Display
(ID number -
Preset loaded)

Preset selector
(push one to change,
keep 10 sec to store)

Dual / Link switch
(Dual mode Stereo
independent channels /
Link CH1 & CH2 for Bridge Use*)

Address selector
(rotary x10 - x1)

Power switch

9 cm

20 cm

44,5 cm

11. REAR PANEL

**Powercon OUT
max 17A**

**CH1 Speakon OUT
(1+ 1-)**
**CH2 Speakon OUT
(2+ 2-)**

Powercon IN

**Input level PAD
Ground lift switch**

**RS485 Remote control
(Parallel)**

**CH1 XLR balanced
parallel connectors**

**CH2 XLR balanced
parallel connectors**

**CH2 Speakon OUT
(1+ 1-)**

*The link mode is designed for Bridge applications,
the output signal of CH1 & CH2 is out of phase!*

9

12. DSP CONTROL AND REMOTE CONTROL

A powerful DSP manages all the functions of the speakers. Each system can store on board 16 preset that can be recalled pushing the PRESET button. Once the preset will appear on the lower line of the display it will become automatically available after few seconds. If you desire to set a preset as "default" you just need, once selected it, to keep pressed for five seconds the PRESET button. After that, this preset will automatically be recall each time you will switch on your module. It is also possible to remote each module by an RS485 serial port. In order to remote your system, you need to set each module on a different address, so that, in your chain, no one module will have the same address. Two rotary encoders allow you to set the desired address number that will appear on the top line of the display. Using the remote control software it is possible to mute each system, select a desired preset loaded on-board or download a new preset pack.

For remote control operation please refer to REMOTE CONTROL AND SOFTWARE MANUAL in the next pages.

11.1 Cloner function & preset systems

It is possible to clone the entire presets bank from Speaker to Speaker without any PC connected. We will call SpeakerA the one with the presets bank that you want clone, and SpeakerB the one that will be upgraded.

Set the SpeakerA on ID 99, will appear CLONER on the display

Keep SpeakerB on any ID number between 10 and 90.

Turn off both the speakers and connect by a RJ45 8 poles cable

Turn on the SpeakerB and after the SpeakerA

SpeakerA will start to clone, on the display will appear a cont down (00/15, 01/15, etc)

Wait till 20 seconds after 15/15

Change the ID of the SpeakerA to any other ID and turn off both Speakers

Turning on the SpeakerA check that it is on mode 16x16 and NOT 4x4.

If SpeakerA is in mode 4x4, just turn off the speaker and keep press the Preset button during the turning on

The preset are cloned to the SpeakerB.

13. REMOTE CONTROL SOFTWARE

1 . To connect the K-array modules to a PC, it is needed a RS485-USB adapter, we recommend the K-USB adapter (pic.1).

K-USB
USB to RS485 adapter

1

Connect the K-usb to a PC and install the drivers required included in the CD-ROM.

SYSTEM REQUIREMENTS

Operating systems:
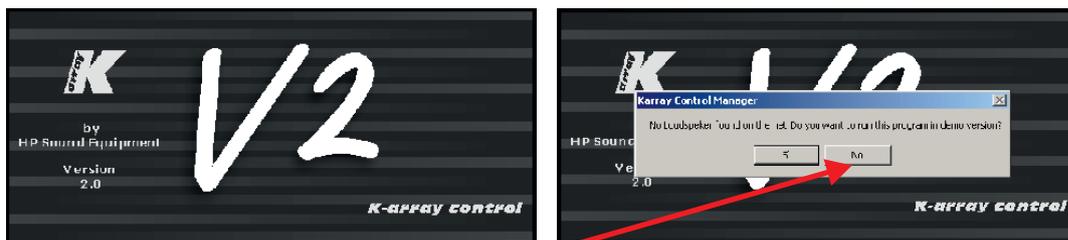 Win98/98SE/Me/2000/XP/Vista

Minimum requirements:
 CPU   300 MHz
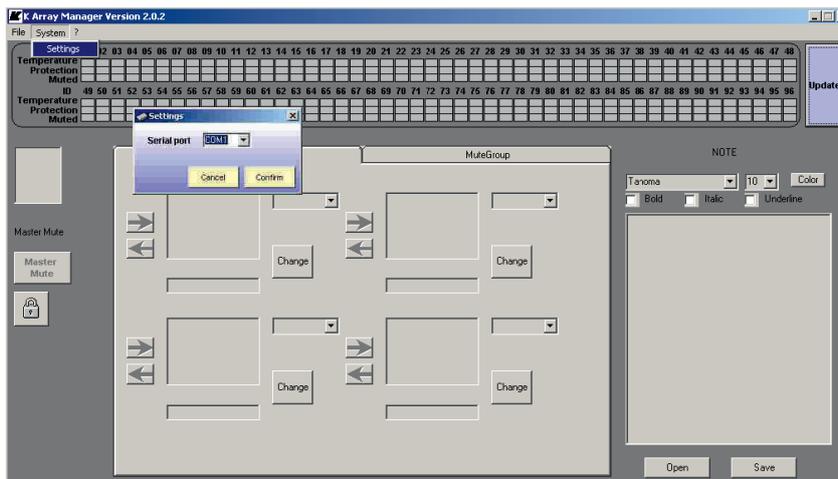 RAM   128 Mb
Recommended requirements:
 RAM   512 Mb

2 . Install the K array control software from installer in the CD-ROM

 2.1 Start the Karray_manager_V2 from Windows - Start - Software - Karray_manager_V2
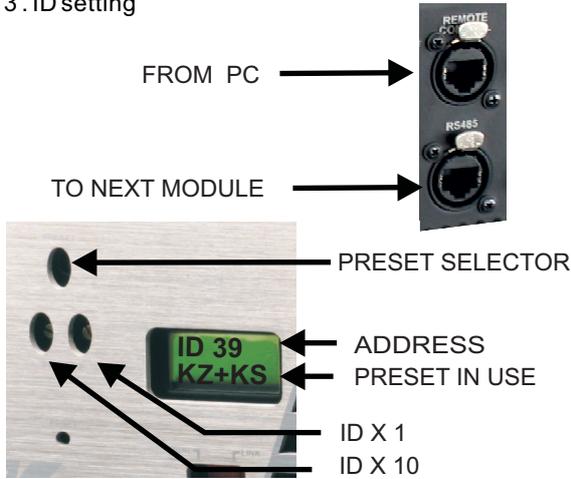

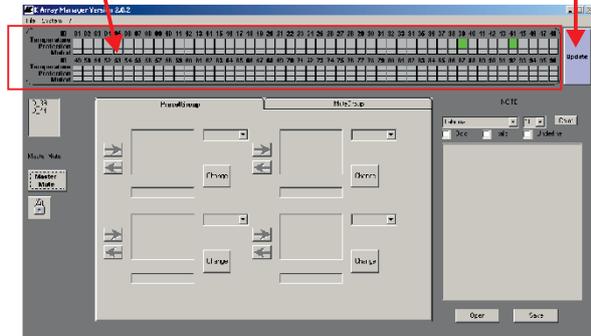 2.2 Click on NO when ask for demo mode start

 2.3 Click on System - Settings to configure which COM port use, the COM port of K-USB, usually is the higher number. If you don't find, you can check it on windows-control panel-system-hardware-COM Port

3 . ID setting

FROM PC

TO NEXT MODULE

PRESET SELECTOR

ID 39
KZ+KS

ADDRESS
PRESET IN USE

ID X 1
ID X 10

On this bars you can see all the modules connected in your net.

Pressing this button you can have a refresh of the modules connected.

4 . Single module control

This frame describes the state of all the loudspeakers on the net. The colour of the little rectangles into this frame represents the status of the loudspeakers. Each loudspeaker has three rectangles. Here there is the meaning of the rectangle's colour.

Two rectangles on top:

Both rectangles grey: the loudspeaker is not present on the net.

Click once on the ID module that you want control.

Module status

Preset slots on the

Temperature rectangle red: one module inside that loudspeaker is over-temperature.

Temperature rectangle green: all modules inside that loudspeaker have a good temperature.

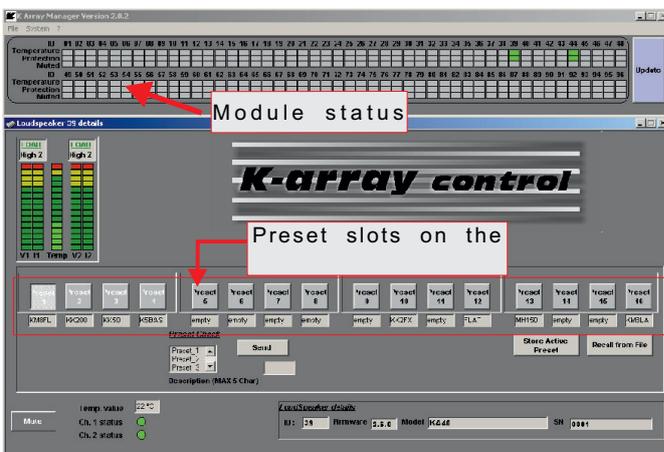Protection/Fail rectangle red: at least one module inside that loudspeaker is in protection.

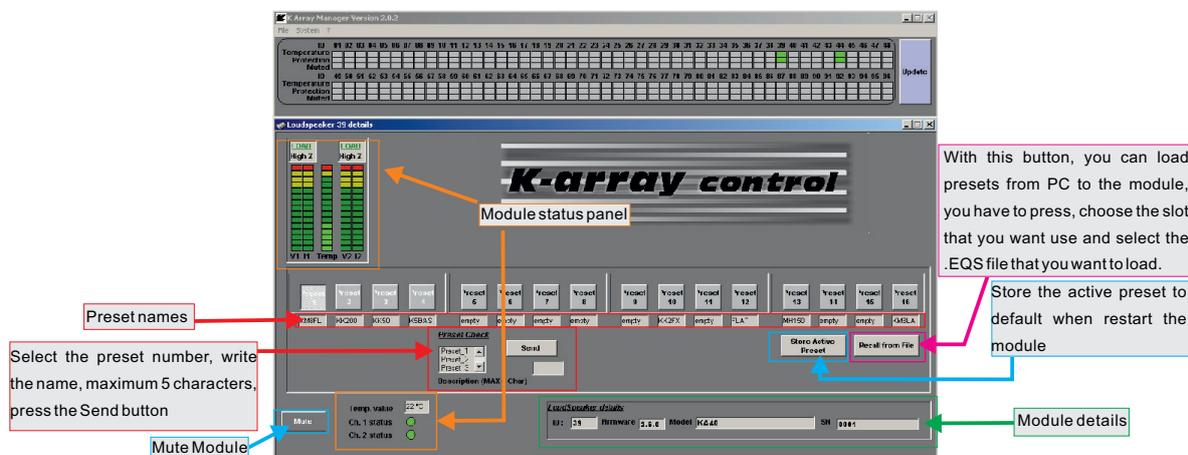Temperature rectangle green: all modules inside that loudspeaker are working properly.

Temperature rectangle black: if this rectangle is black it means that the loudspeaker is not responding.

The main causes of this malfunction are loss of power supply and loss of serial connection between the hub and the loudspeaker. Check the hardware. If this rectangle is black will be black also the Protection/Fail.

Protection/Fail rectangle black: see above.

The remaining rectangle: Is related to the mute function; if red, the related loudspeaker is in "mute" status.
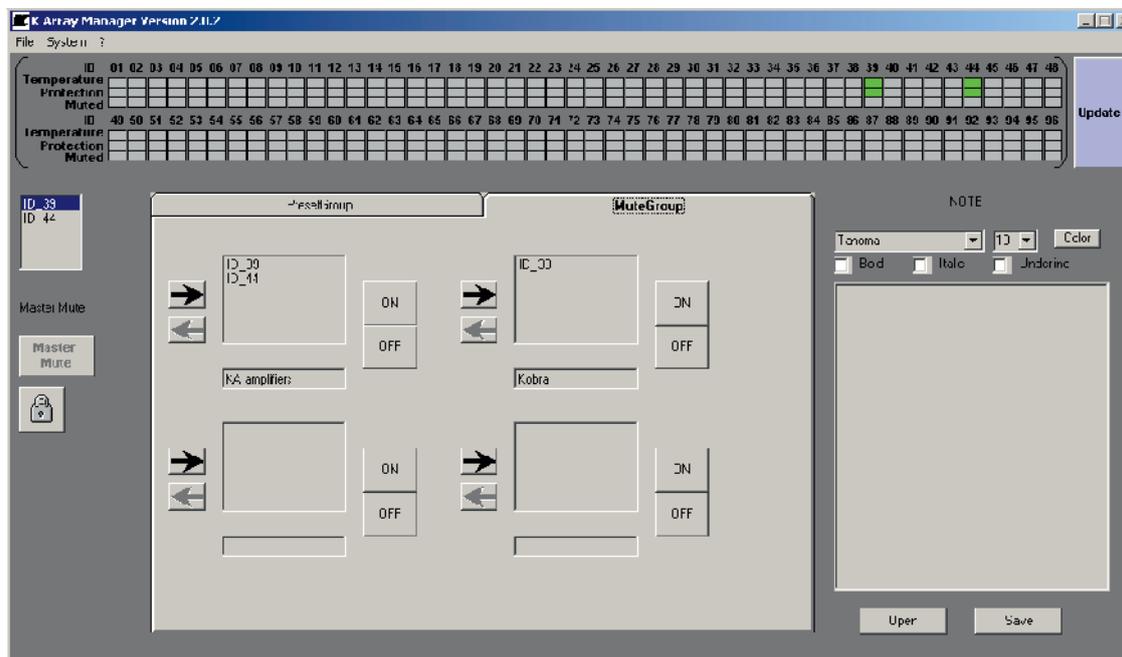
With this button, you can load presets from PC to the module, you have to press, choose the slot that you want use and select the .EQS file that you want to load.

Store the active preset to default when restart the module

Preset names

Select the preset number, write the name, maximum 5 characters, press the Send button

Mute Module

Module status panel

Module details

5. Mute groups

On the Mute Groups window, you can manage the modules Mute as groups, up to 4 different.

5.1   Choose the modules from the list on the right
Press the right arrow of the group that you prefer, to add the modules

5.2 It is possible to assign names to the groups, just writing in the fields.

6. Preset groups
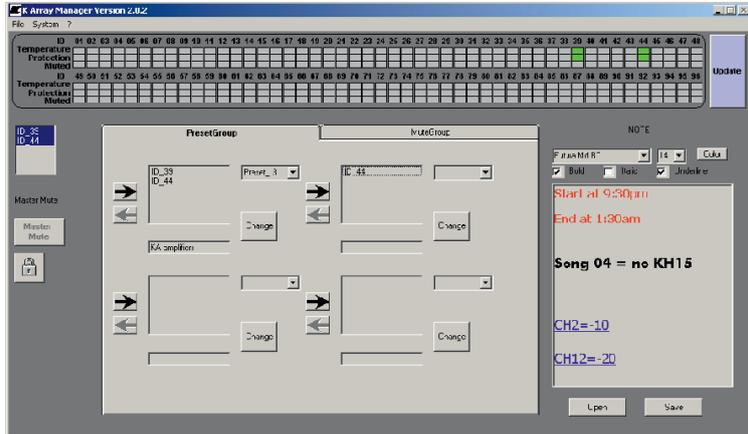
On the Preset Groups window, you can manage the modules Presets as groups, up to 4 different.

6.1   Choose the modules from the list on the right.

Press the right arrow of the group that you prefer, to add the modules.

Select the number of the preset you want to choose,

6.2   It is possible to assign names to the groups, just writing in the fields.

7. Text editor

It is available a text editor on the software, it can manages .RTF files.

8. Master Mute control

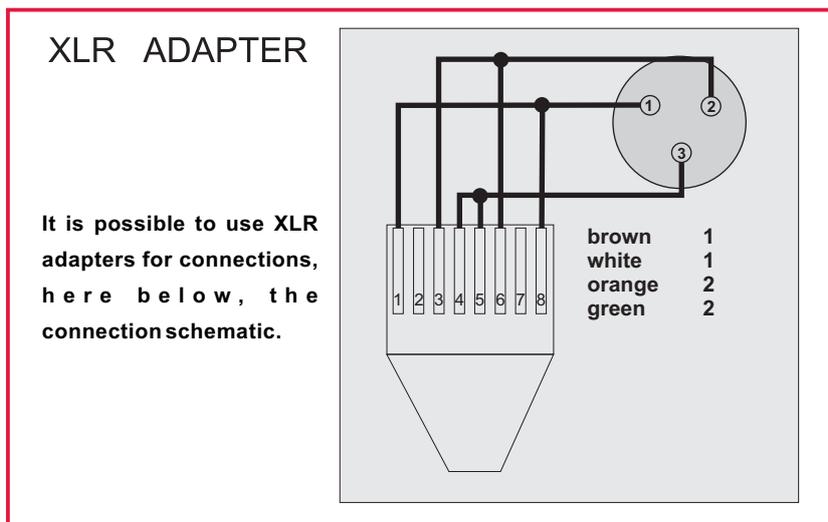It is possible to Mute all the modules connected just pressing Master Mute button.

To protect from accidental pressing of this button, you will need to Unlock by pressing the Unlock button below it.

9. Exit option

When you choose to exit from the software, will appear an alert window that alert you about Unmuting all the modules connected, this is important because the Mute function is controlled only

10. Save and Load

It is possible to save the speakers configuration for Mute and Preset Groups, just Save a .CONF file.

XLR ADAPTER

It is possible to use XLR adapters for connections, here below, the connection schematic.

brown	1
white	1
orange	2
green	2

14. SPECIFICATIONS

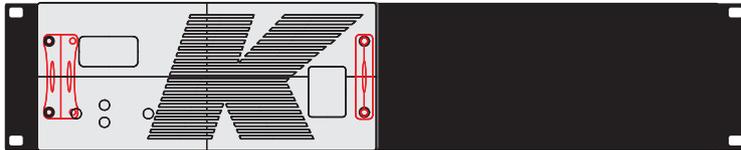|	
Output power Continuous 4Ω (0.5% THD) EIAJ 4Ω (1% THD) Continuous 8Ω (0.5% THD) EIAJ 8Ω (1% THD) Bridged - EIAJ 8Ω (1% THD)	390 W[1] 500 W[2] 240 W[1] 260 W[2] 1000 W[2]
Audio Specs Slew Rate 8Ω S/N Ratio Distortion Input impedance Gain Output Bandwidth Damping Factor 8Ω (100 Hz)	50V/uS >105 dB/A <0.5 (THD, DIM, SMPTE) 20K bal. 10K unbal. Variable Unbalanced to ground 10 Hz - 30 KHz >500
Protections Thermal protection Short circuit / over-load Clip Limiter, Perm. signal li miter	Yes Yes Yes
Audio Input Connectors Wiring	2 x male + 2 x female 3 poles balanced XLR *Pin1* = ground / Pin*2* = hot / Pin*3* = cold
Remote control Input Connectors	2 x female 8 poles RJ45
Power Output Connectors	2 x female Speakon 4 poles
Power Input / Output Connectors	2 x PowerCon Parallel IN/OUT (max out 17A)
AC power Operating range I. nom Max continuos and burst current	*115/230 V 50 / 60 Hz* *2.6 - 1.6 A* 230 V 5A(>10s) - 10A (<1s) 115 V 10A(>10s) - 20A(<1s)
Physical Measures Weight	88(2U)x200(½Rack) x485mm 3.5 Kg

Notes for data
1. RMS Continuous Power, both channel driven on nominal load
2. RMS Power tested under the specifications of EIAJ standard, both channel driven on nominal load.
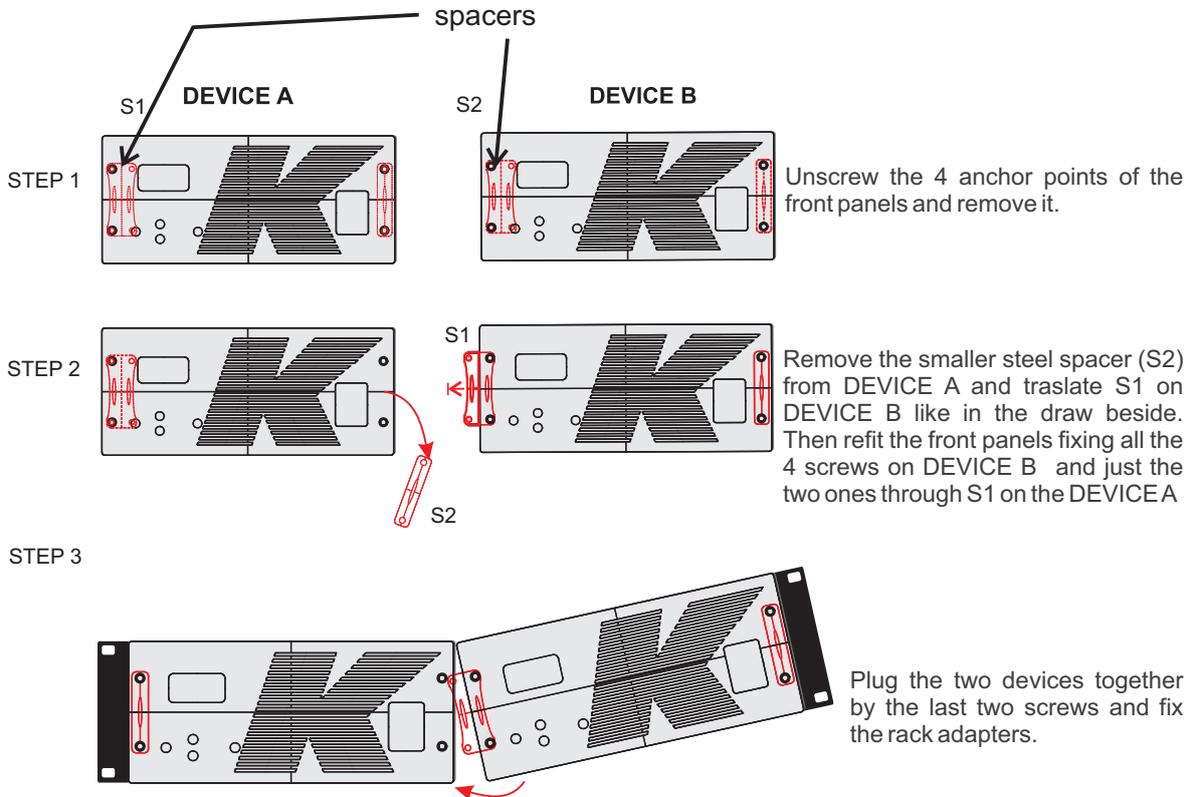
15. INCLUTED RACK ADAPTERS

SINGLE RACK

Fix by the supplied screws the two rack adapters as shown in the drawing.

DOUBLE RACK

spacers

S1   **DEVICE A**   S2   **DEVICE B**

STEP 1

Unscrew the 4 anchor points of the front panels and remove it.

STEP 2

S1

S2

Remove the smaller steel spacer (S2) from DEVICE A and traslate S1 on DEVICE B like in the draw beside. Then refit the front panels fixing all the 4 screws on DEVICE B and just the two ones through S1 on the DEVICE A

STEP 3

Plug the two devices together by the last two screws and fix the rack adapters.

16. SERVICE

To obtain service:
1) Contact the official K-array distributor in your country that direct you to the service centre.
2) If you are calling for the service, have the serial number(s) of the unit(s) at hand for reference. Ask for Customer Service, and be prepared to describe the problem clearly and completely.
3) If the problem cannot be resolved over the phone, you must return the unit for service.
4) You will be given an RA (Return Authorization) number for job tracking. Refer to this number on shipping materials and in all correspondence concerning the repair. Shipping charges are the responsibility of the purchaser.

Any attempt to modify or replace components of the device will invalidate your warranty. Service must be performed by an authorized K-array service center.

Cleaning:
• Clean the product enclosures using only a soft, dry cloth.
• Do not use any solvents, chemicals, or cleaning solutions containing alcohol, ammonia, or abrasives.
• Do not use any sprays near the product or allow liquids to spill into any openings.

17. PRESETS LIST - RELEASE - D

ID	NAME	SPK 1 (1+1-)	SPK 1 (2+2-)	SPK 2 (1+1-)	SPK 2 (2+2-)
0	pdKZ10	KZ10	KZ10	KZ10	N.C.
1	pdKZ+KU	KZ10	KU36 (serial)	KZ10	N.C.
2	pdKV	KV50 (16ohm)	KV50 (16ohm)	KV50 (16ohm)	N.C.
3	pdKV+KU	KV50 (16ohm)	KU36 (serial)	KV50 (16ohm)	N.C.
4	pdKT	KT20	KT20	KT20	N.C.
5	pdKT22	KT22	KT22	KT22	N.C.
6	pdKT+KS	KT20	KKS50 (8ohm)	KT20	N.C.
7	pdKT+KU	KT20	KU36 (serial)	KT20	N.C.
8	pdKT2+KU	KT22	KU36 (serial)	KT22	N.C.
9	pdKU36	KU36 (serial)	KU36 (serial)	KU36 (serial)	N.C.
10	pdKK52	KK52 (16ohm)	KK52 (16ohm)	KK52 (16ohm)	N.C.
11	pdKK102	KK102 (8ohm)	KK102 (8ohm)	KK102 (8ohm)	N.C.
12	pdKP52	KP52 (8ohm)	KP52 (8ohm)	KP52 (8ohm)	N.C.
13	pdK52KU	KK52 (16ohm)	KU36 (serial)	KK52 (16ohm)	N.C.
14	pdK52KKS	KK52 (16ohm)	KKS50 (8ohm)	KK52 (16ohm)	N.C.
15	pdK52M12	KK52 (16ohm)	KMT12P	KK52 (16ohm)	N.C.

Approval

CE — K-array declare that this device is in compliance with the applicable CE standards and regulations.

Before putting the device into operation, please observe the respective country-specific regulations!

WEEE

Please dispose of this product at the end of its operational lifetime by bringing it to your local collection point or recycling centre for such equipment.

The contents of this manual are fornished for informational purpose only. Hp Sound Equipment s.r.l. assumes no responsability for any errors or inaccuracies that may appear in this manual.

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