

The logo features the word "array" in a white, lowercase, sans-serif font, slanted upwards and positioned to the left of a large, grey, stylized letter "K". The "K" has a red horizontal bar across its upper section.

*Redline* **KL18ma**

## USER'S MANUAL








*K-array is the new voice that sings aloud, "outside the choir", and whose performance is better than any other products.*

Born on-the-road, in the PA world, where you get no discount, you have to give your best as fast as you can, often with a "compressed" budget, K-Array systems have been designed to give precise answers to precise needs.

Driven by new generation digital engines, with power/dimension/weight ratios that are ten times better than any other professional products, K-arrays can deliver the full spectrum of musical styles with clarity, power, punch, intelligibility and evenness across both volume levels and the frequency spectrum. These systems can be remotely controlled and come with a sophisticated on-board software, allowing the user to shape their performance to taste and needs. Inside K-array systems you will find something that only we can offer: the best in technology, proudly conceived, designed and produced in Italy. If they were cars, they would be Ferrari. Don't agree to pay for a simple brand, claim performance, and don't believe those who maintain that these products are only for few people, the only truth is that K-array systems are unique, but affordable and within everybody's reach!

*HP Sound Equipment s.r.l.*

# SYMBOLS

 		
<p>This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual!</p>	<p>Warning! Dangerous voltages: risk of electric shock.</p>	<p>This device complies with Restriction of Hazardous Substances Directive.</p>
		
<p>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 <a href="http://www.scanning.datalogic.com">www.scanning.datalogic.com</a></p>	<p>The item meets all the essential "Health and Safety" requirements of the relevant European Directives.</p>	<p>This symbol alerts the user to the presence of recommendations about product's use and maintenance.</p>

## 1. SAFETY INSTRUCTIONS



- 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.

## 2. INTRODUCTION



The KL18ma features a 1600 watt 18" drive unit with neodymium magnet structure and suspension engineered for maximum linear excursion. Its ultra-light reflex cabinet is fitted with two pocket handles and one 35mm pole mounting point for easy installation with every satellite speaker on it.

Combining the KL18ma with the middle-high speakers KR200, we obtain a high performance ultra-slim powered two way system, called KR200S, designed for small to medium wavefront systems, in both mobile and installed applications.

The KR200S includes two KR200 satellites and 2 KL18ma powered subwoofers.

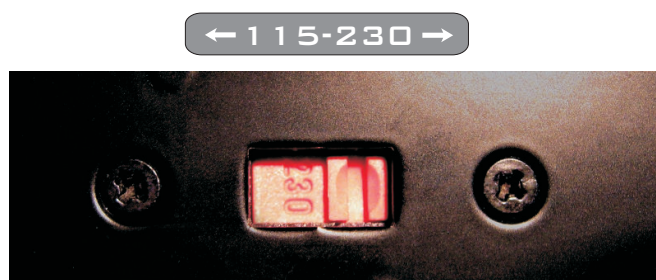
The KR200S features a line array of 32x2" high efficiency neodymium magnet drivers enclosed in an ultra-strong chassis, to ensure high resistance and durability in the hardest working conditions.

The KR200S thanks to true line array technologies and powerful DSP system, achieve outstanding power and coherence throughout the intended coverage allowing a wide dynamic range and a faithful reproduction of sound.

All the components are designed by K-array R&D department and custom made under K-array control quality system.

## 3. VOLTAGE REQUIREMENTS

KL18ma operates safely and without audio discontinuity if the AC voltage stays within either of two operating windows: 95-125 (voltage selector on 115V) or 195-250V (voltage selector on 230V), at 50 or 60 Hz.



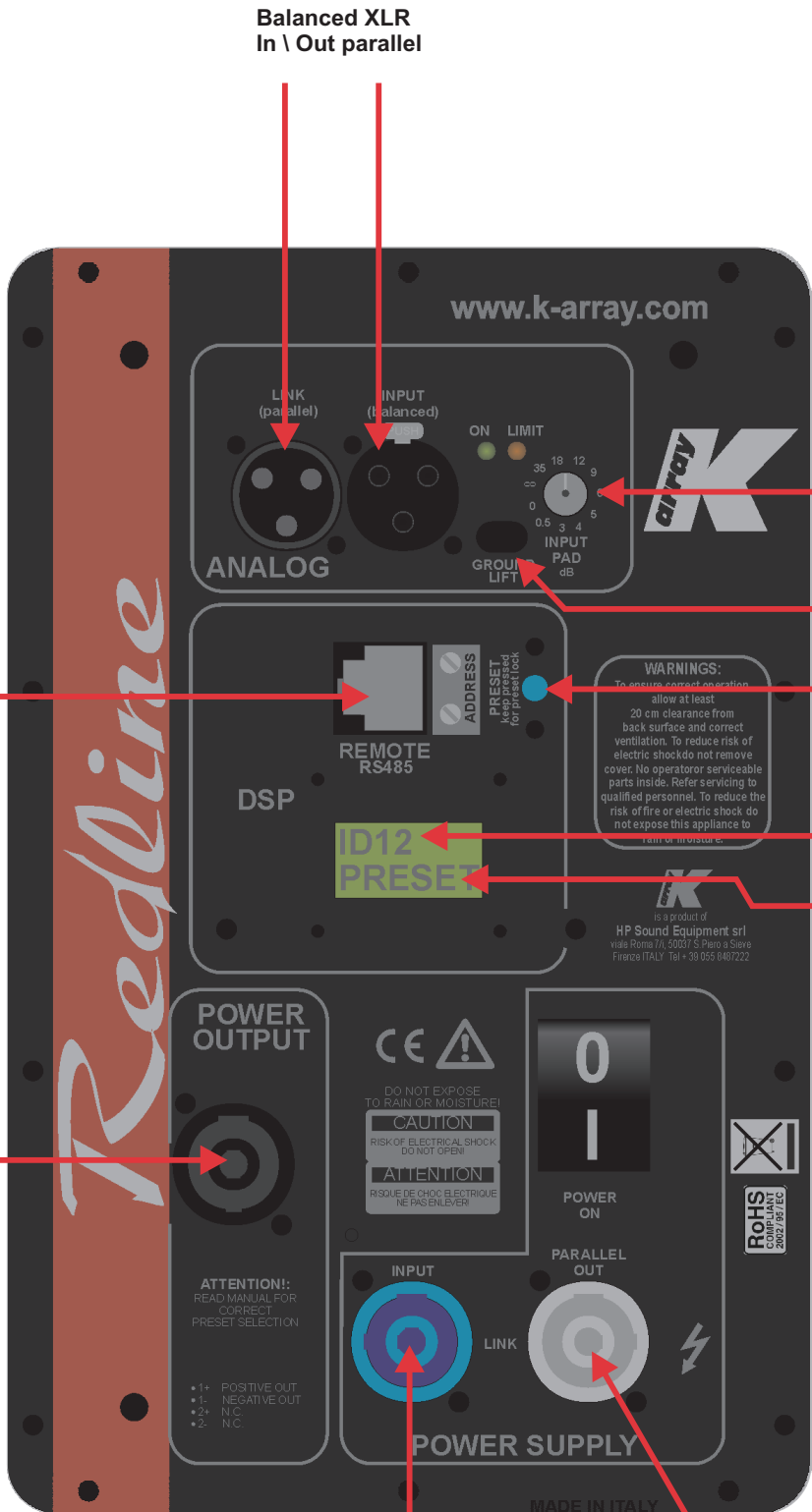
The device is default set to be connected to 230 V AC Power. To use the device on a 115 V AC Power you need, before connecting it, to move the voltage selector's cover, just loosening the two screws, and to choose the correct use voltage by the red switch. Be sure that both voltage set on the selector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

4. AMPLIFIER PANEL



Balanced XLR  
In \ Out parallel

Input pad level

Ground lift switch

RS485 connection  
for remote control  
(don't connect to  
LAN port!)

Preset change button  
Keep it pressed 10sec.  
to store preset as default

ID number for  
remote control

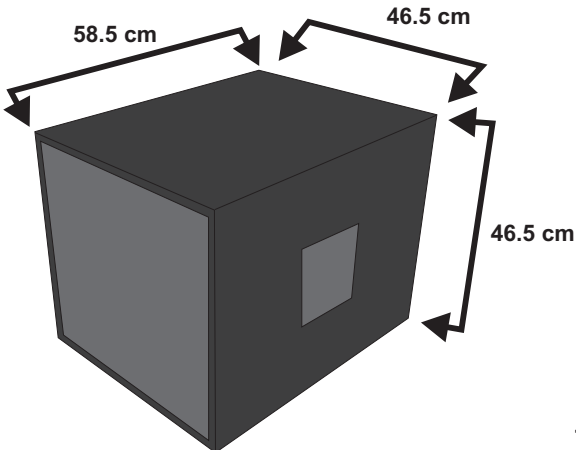
Preset loaded

Speakon power  
output.  
To use with KR200  
satellite or with  
KL18 passive  
subwoofer

PowerCon Input

PowerCon parallel Output  
(max 14 A)

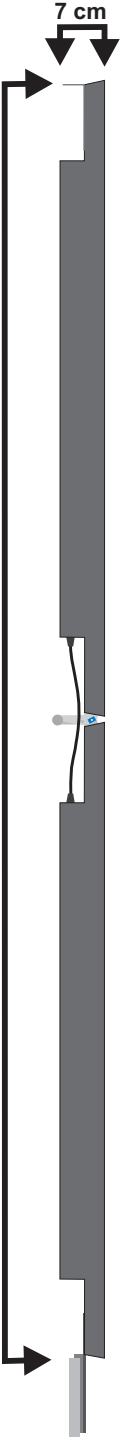
# KL18ma



WEIGHT 20 Kg

# KR200

WEIGHT 9 Kg



Open and lock the KR200 satellite before installing on the KL18ma.

**Warning**  
Pay attention when closing the KR200 satellite, do it slowly and watch your hands!



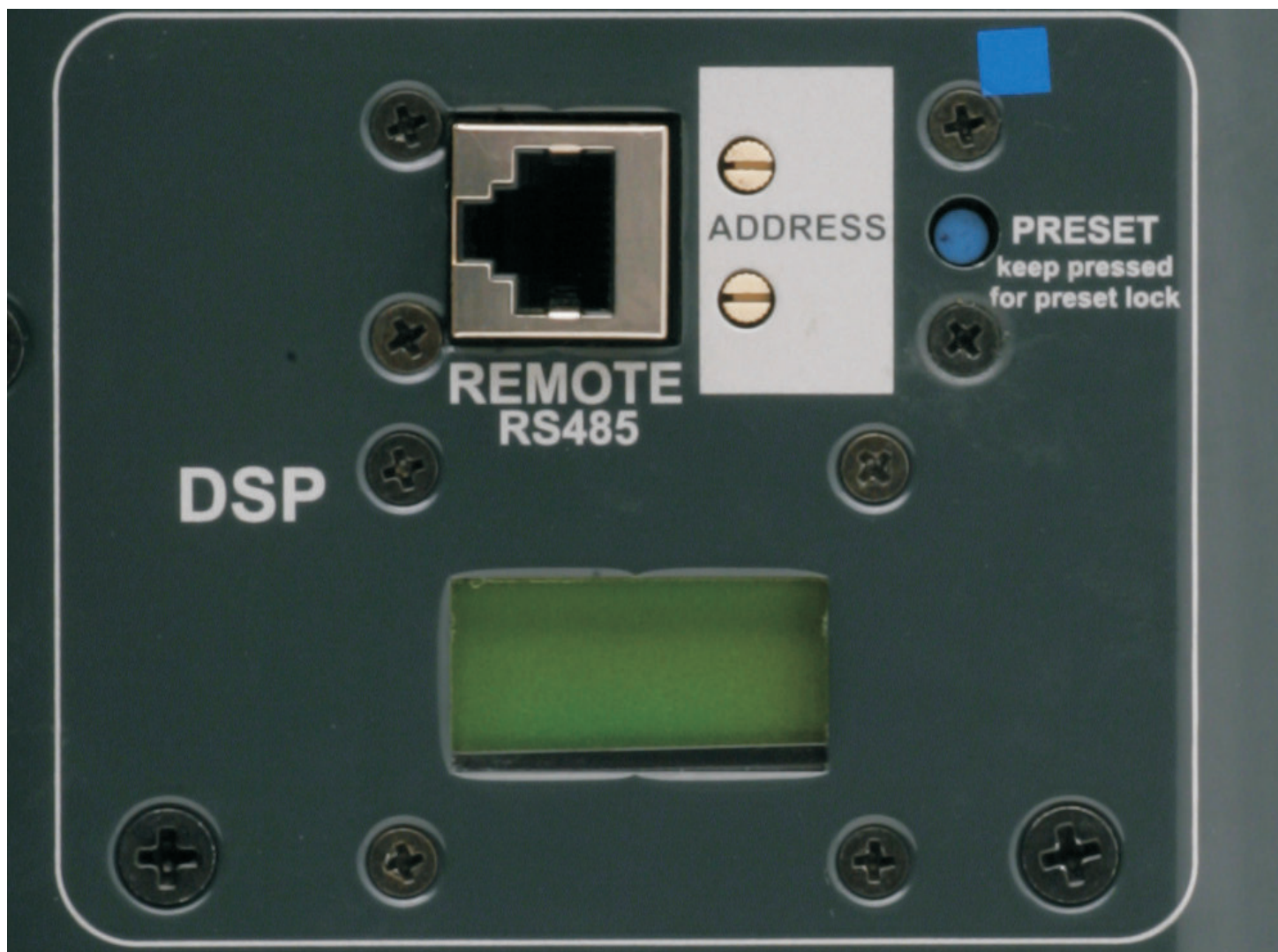
100 cm



## 6. DSP CONTROL & 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.



### 6.1 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.

# 7. 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



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:**

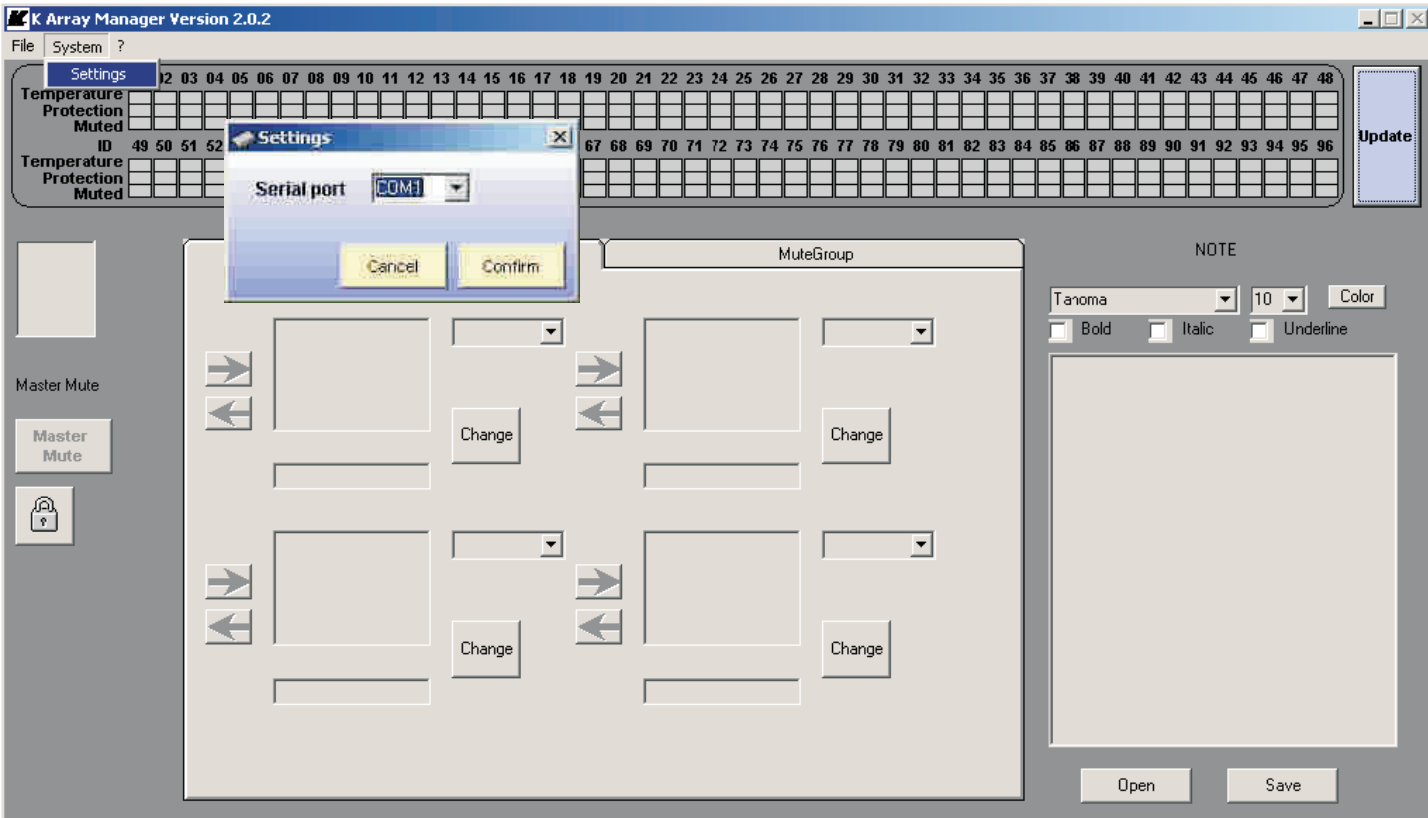
RAM 512 Mb

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

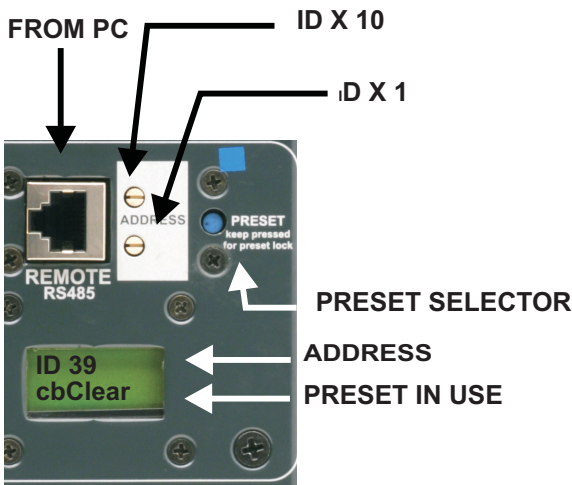


2.2 Click on NO when ask for demo mode start



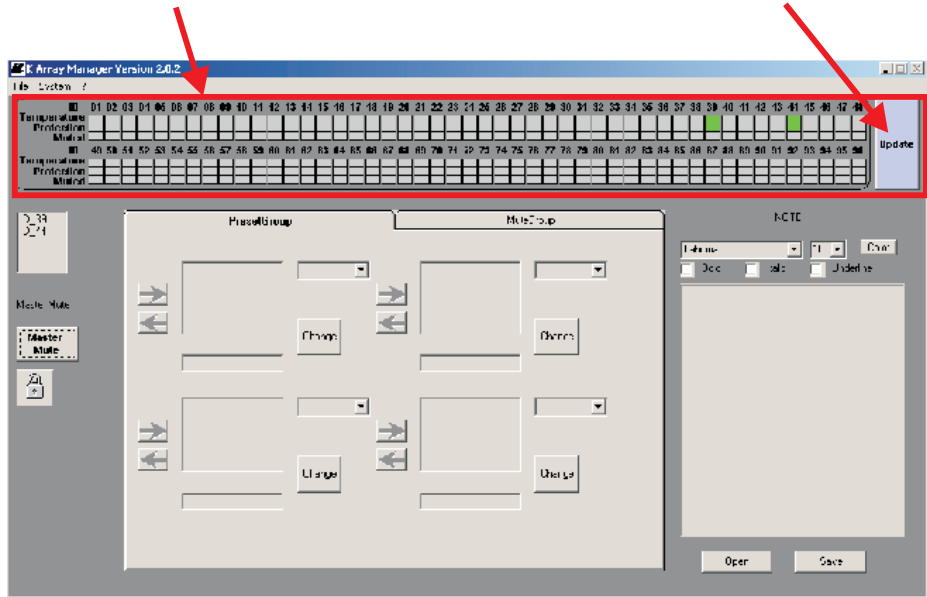
2.3 Click on System - Settings to configure which COM port use, the COM port of K-USB, usually is the higher number. If you don't find, you can check it on windows-control panel-system-hardware-COM Port

### 3. ID setting

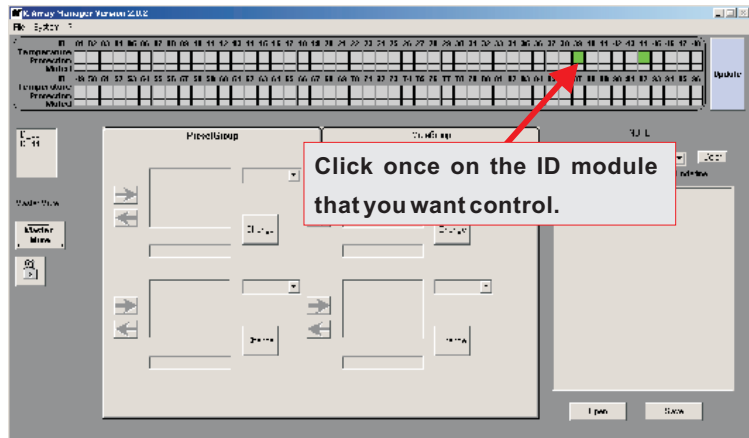


On this bars you can see all the modules connected in your net.

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.

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.

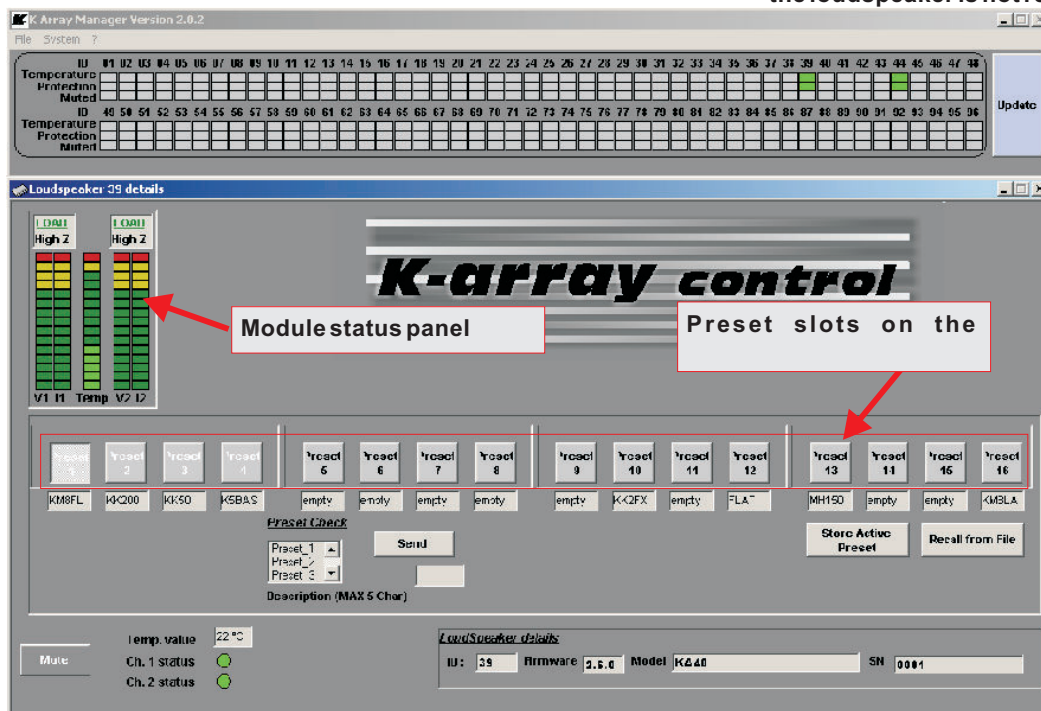
Temperature rectangle green: all modules inside that loudspeaker are working properly.

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

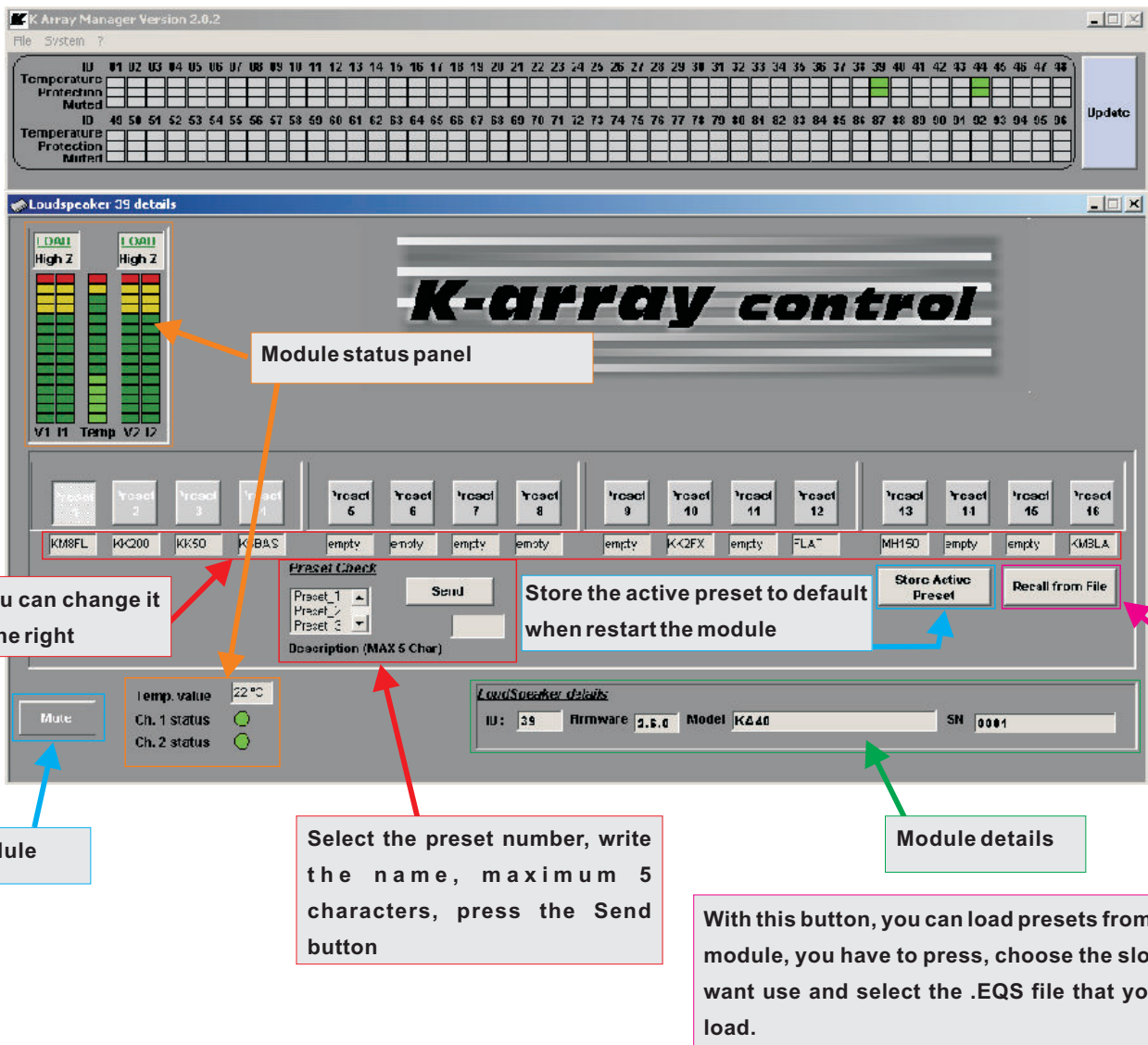
The main causes of this malfunction are loss of power supply and loss of serial connection between the hub and the loudspeaker. Check the hardware. If this rectangle is black will be black also the Protection/Fail.

Protection/Fail rectangle black: see above.

The remaining rectangle: Is related to the mute function; if red, the related loudspeaker is in "mute" status.



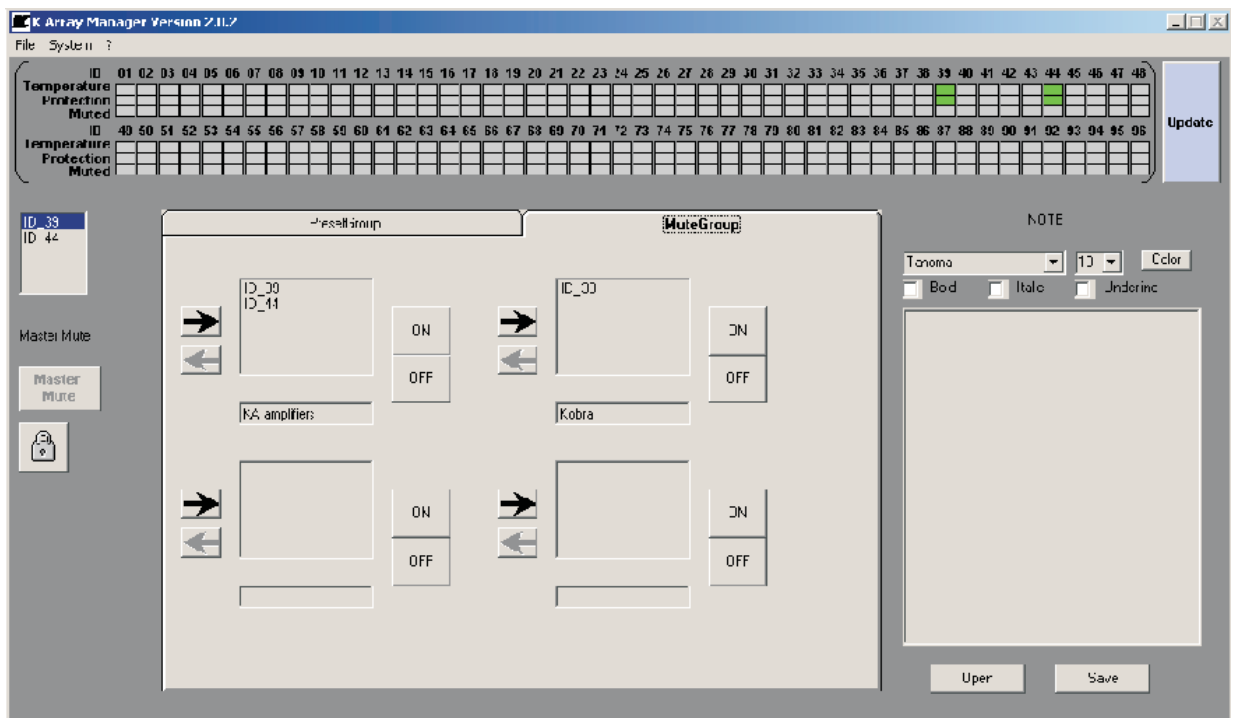




## 5. Mute groups

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

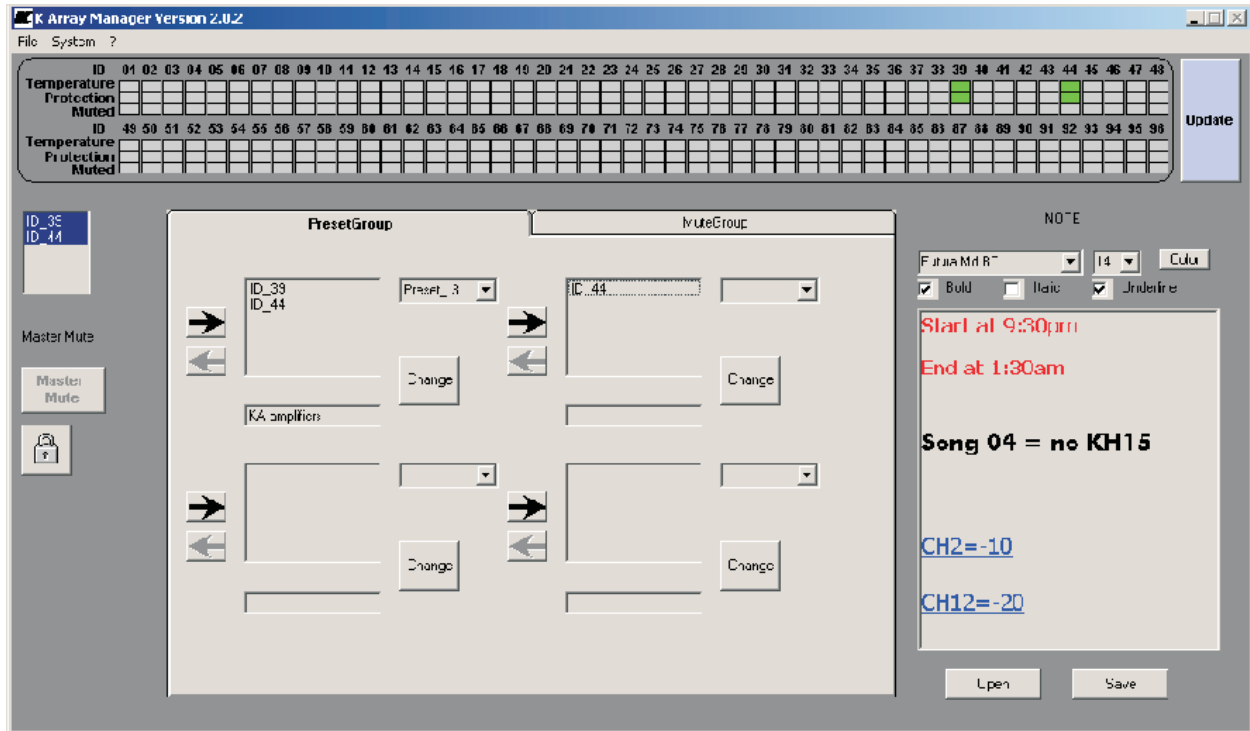
On the Preset Groups window, you can manage the modules Presets as groups, up to 4 different.

### 6.1

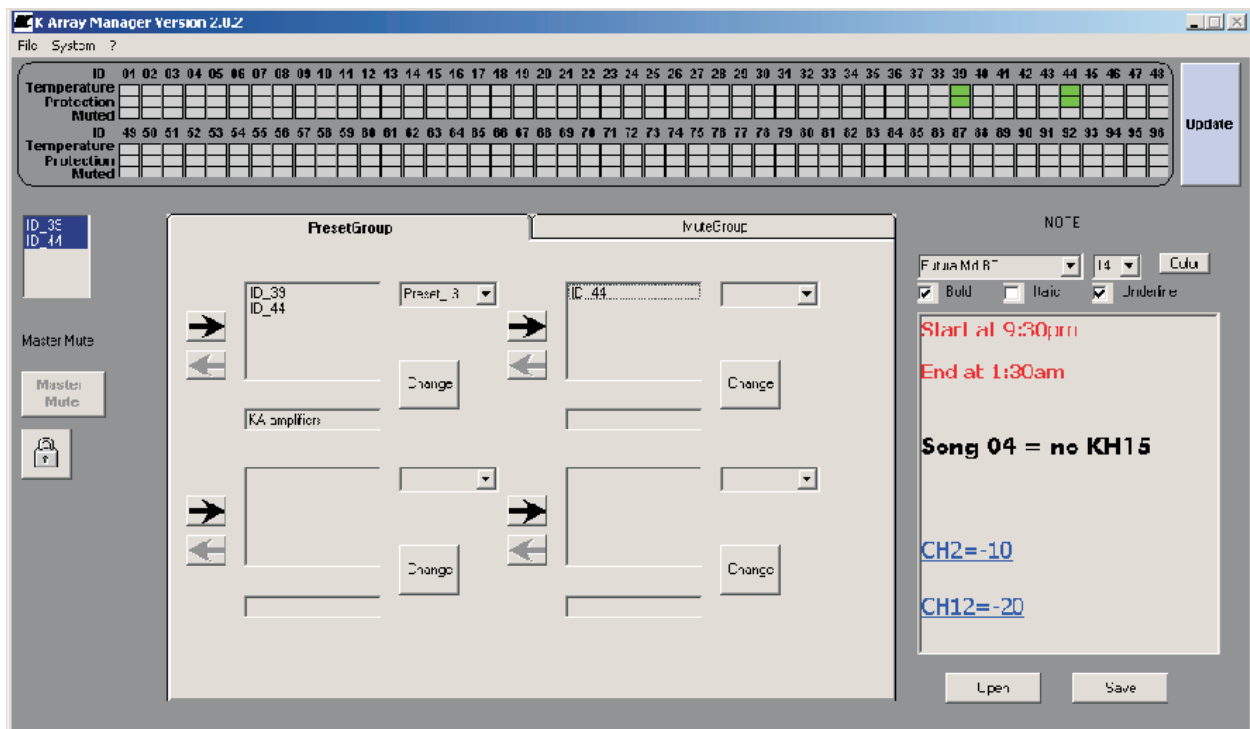
Choose the modules from the list on the right

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

Select the number of the preset you want to choose, after press Change button



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



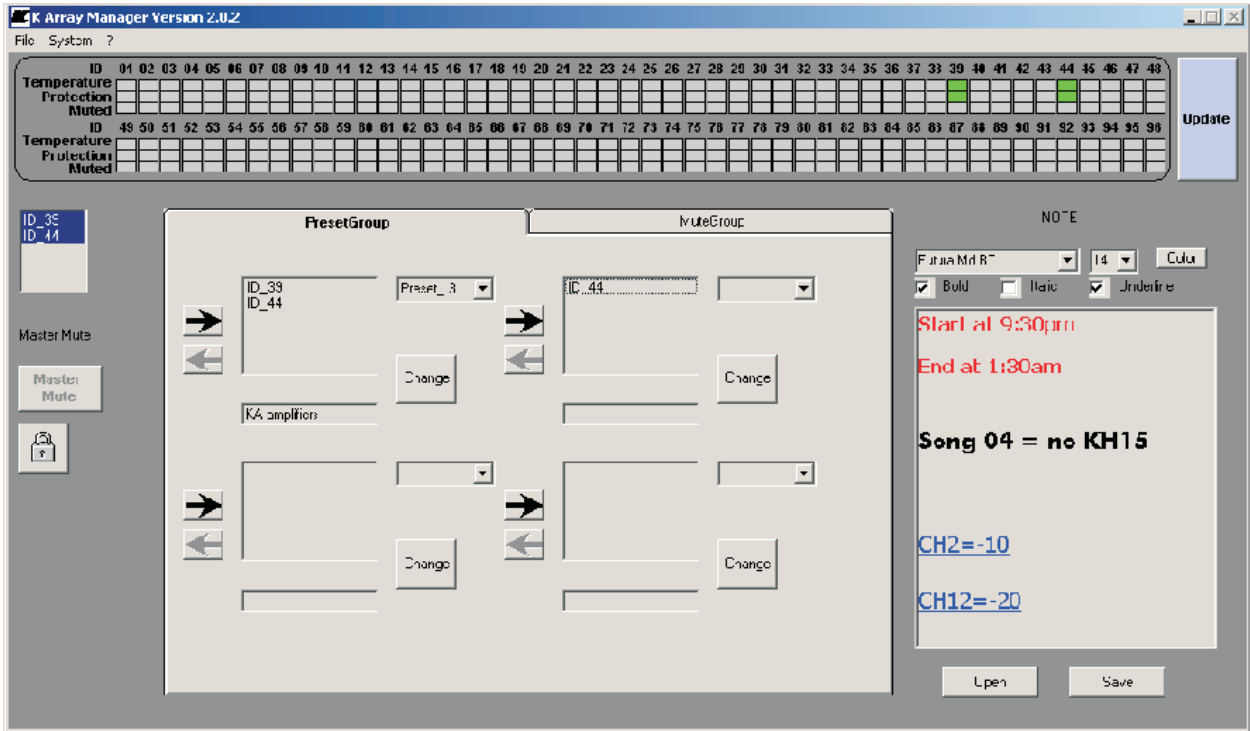
## 7. Text editor

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.



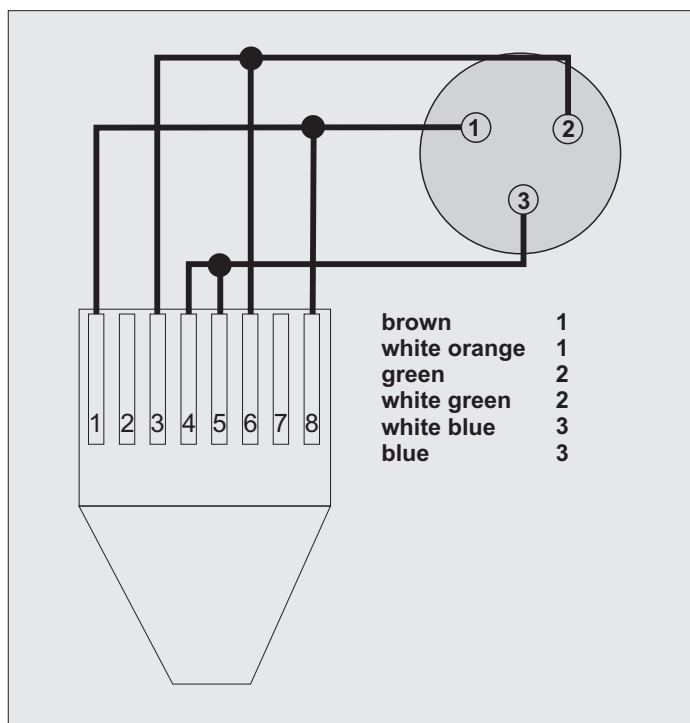
### 9. Exit option

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 by software.

### 10. Save and Load

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

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



## 8. TECHNICAL DATA

Acoustics	
Power handling	800(sub) + 500(sat) w <sup>1</sup>
Max power	1200(sub) + 1200(sat) w <sup>2</sup>
Impedance	8Ω(sub) + 8Ω(sat)
Operating frequency range	30Hz - 19 KHz +/- 3dB (preset relating) <sup>3</sup>
Frequency range	35Hz - 19 KHz +/- 3dB (preset relating) <sup>4</sup>
SPL 1W/1mt	97 dB(sub) 101 dB(sat) <sup>5</sup>
Maximum SPL	127dB continuous - 133 dB peak <sup>6</sup>
Cross over	
Type	DSP controlled preset relating
Frequency	150 Hz minimum (preset relating) <sup>7</sup>
Transducers	
Low frequency	1 x 18" Neodymium speakers with 3" voice coil
High frequency (KR200)	32 x 2" Neodymium speakers with 0,75" voice coil
Audio Input	
Connectors	male + female parallel 3 poles balanced XLR
Wiring	Pin1 = ground / Pin2 = hot / Pin3 = cold
Audio powered Output	
Connector	Female Speakon
Wiring	Pin1+ = CH1+ / Pin1- = CH1- / Pin2+ = N.C. / Pin2- = N.C.
Remote control Input	
Connectors	1 x female 8 poles RJ45
Power Input	
Connectors	2 x PowerCon IN/OUT (max out 14 A)
Amplifiers	
Type	1 modules class D - DSP controlled
Subwoofer power	1000 Watt <sup>8</sup>
Satellite power output	1000 Watt <sup>8</sup>
Protections	Dynamic limiter, over current, over temp, short circuits
AC power	
Operating range	Standard 210 - 240 Vac 50Hz (standard) Optional 100 - 120 Vac 60Hz (optional)
Max continuous and burst current	Standard 6A(>10 sec) - 12A (<1 sec) Optional 10A(>10 sec) - 20A (<1sec)
Physical	
Measures	46.5 x 46.5 x 58.5 cm (KL18ma) 5.5 x 7 x 200 cm (KR200)
Weight	20 Kg (KL18ma) 9 Kg (KR200)

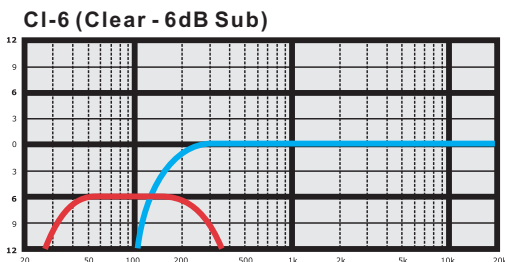
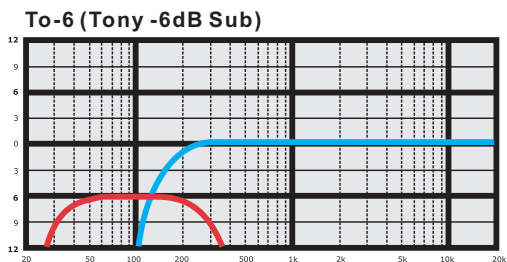
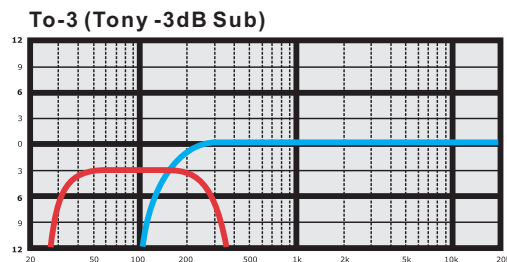
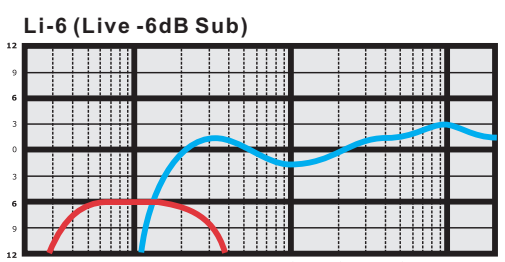
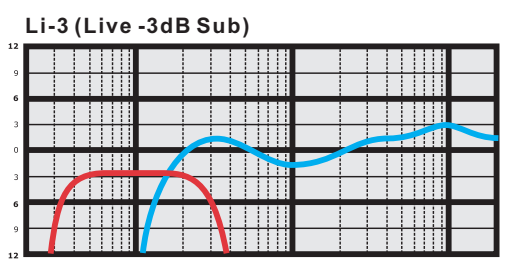
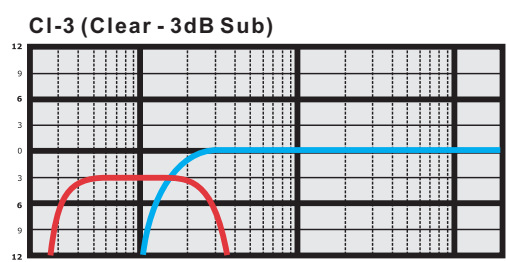
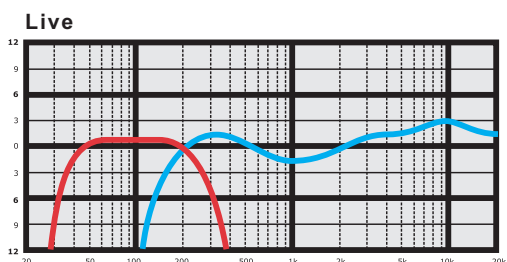
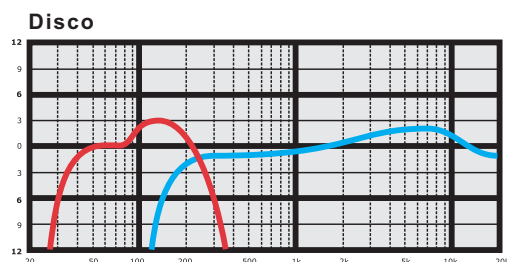
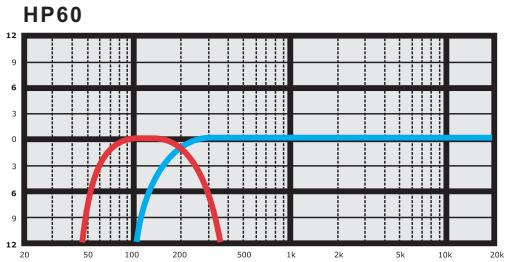
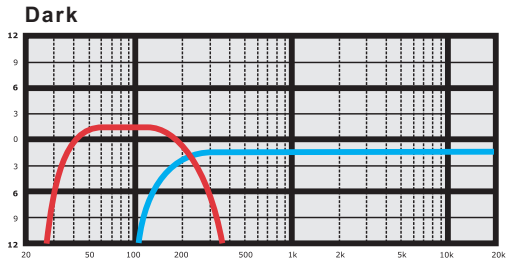
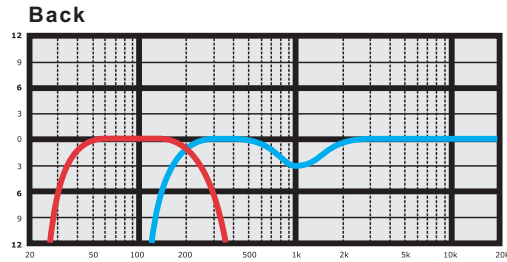
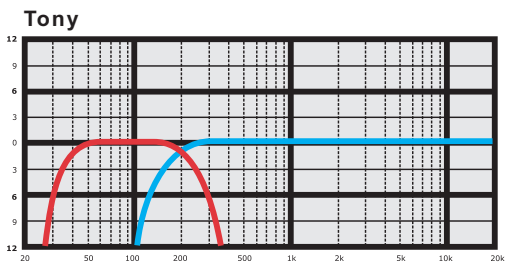
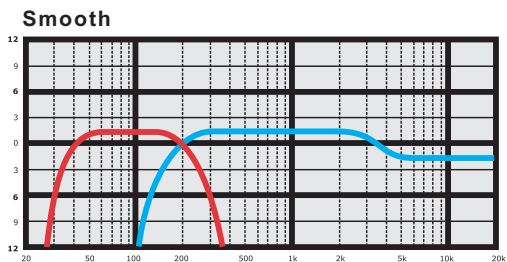
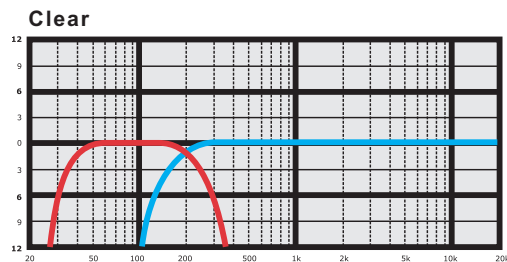
### Notes for data

1. Power handling is measured following AES standard conditions: transducers driven continuously for two hours with a band-limited noise signal having 6 dB of crest factor.
2. Max power is the maximum RMS applicable power for a musical signal, the referement signal is the one proposed by EIAJ standard.
3. Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
4. Free field measured with 1/3 octave frequency resolution at 2 mt.
5. Measured@4 mt then scaled@1 mt.
6. Measured with audio source @ 1 mt.
7. This is the frequency in which the transducers produce the same sound pressure level (measured@2 mt).
8. Amplifier wattage rating is based on the maximum unclipped burst sine wave RMS voltage that the amplifier will produce into the nominal load impedance .

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# 9. PRESETS







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

Hp Sound Equipment s.r.l. reserves the right to make modifications without prior notice.



[www.k-array.com](http://www.k-array.com)

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