ADP-12

USER MANUAL

V.12.12

LYNX pro-audio

▶ **Class D Powered (bi-amplified)**

▶ **Integrated Digital Processing**

▶ **Internal temperature control**

▶ **Electronic protection**

▶ **High quality components**

▶ **Online monitoring available**

ADP-12   powered cabinet

Manufacturer

LYNX Pro Audio S.L.
Calle 7 - Pol. Ind. Picassent
E-46220 Picassent (Valencia)

CB SCHEME, IEC SYSTEM FOR CONFORMITY TESTING AND CERTIFICATION OF ELECTRICAL EQUIPMENT

CE CERTIFICACTION, EUROPEAN PRODUCT

CONTENTS

Before starting to use this device, please read this instruction manual carefully.
Keep these instructions in the place where the equipment will be used and with easy access to them.

- Electrical appliance.
The exclamation mark within a triangle identifies the presence of electricity. Use the system carefully without wet hands or feet. Avoid installing the speaker in wet or excesively humid places. Do not place material that contains liquid on or near the unit. Avoid dripping or splashing water or any liquid over the unit. Regularly check the condition of the cables and make sure these are not being walked on or pinched. Connect the speaker to bipolar, earthed mains. The mains plug must be connected to the appropriate protection (fuse or breaker). Connection to any other type of mains could result in an electrical shock and violate local electrical codes. CAUTION: DO NOT CONNECT OR DISCONNECT THE AC POWER CONNECTORS UNDER LOAD.

- Heavy equipment.
Apply back protection when using the system. Avoid loading and unloading at heights.

- Electrical shock risk.
The diagonal mark within a triangle identifies the presence of dangerous voltage. Do not open or handle the interior of the box. These parts are not to be adjusted by the user. For maintenance and/or repair please go to an authorized service centre. In order to reduce the risk of electric shock, disconnect from AC before plug in or unplugging Audio signal cables. Reconnect to AC only if all signal connections are made and secured. Never manipulate the ground type plug provided. The AC mains plugs should always remain accessible for operation. Unplug the loudspeaker during storms or when it's being used for a long time.

- Hearing damage risk.
These systems can reproduce large quantities of sound pressure which can damage hearing. Take precautions if you are going to be near them for extended amounts of time and do not get too close.

- Hanging – Flying.
Do not hang the cabinets from the handles or from any other part other than the designated hanging point. When flying this system please observe the technical and "Rainbow" software data carefully. Never exceed the maximum safe working loads or ignore the instructions included within this manual. Use Only flying accessories provided by Lynx Pro Audio S.L.
Rigging must be always carried out by professionals.

- Delicate Material.
Please ensure no foreign object or water enters the speaker. Only clean the unit with dry cloths. Do not use solvents.

-Overheating – Fire risk.
To reduce the risk of the speaker over heating, avoid direct contact with sunlight. Avoid placing the unit close to heat inducing objects such as radiators. Do not cover the equipment in use and do not block any ventilation openings. Do not put naked flame, such as lighted candles, close or on top of the unit.

- Electromagnetic and interferente emissions.
Avoid placing objects which through electromagnetic waves can damage the unit, such as mobile phones, lap tops, magnetic strip cards etc.
This system complies with normatives   EN 55103-1 (1)
                                                              EN 55103-2 (2)

(1) This device may not cause harmful interferences.
(2) This device may receive interference including interferences that may cause undesired working.

-IMPORTANT NOTE.
This Equipment must be used in accordance with these instructions and by trained professional personnel only. This equipment should not be used in places with extreme tropical climates. Don't expose this apparatus to extreme humidity and or temperature values.

INTRODUCTION

To facilitate, correct and reliable use of the powered cabinet ADP-12 we have designed this instruction manual. Please read the manual carefully before proceeding to install the system.

Please observe the technical data carefully and do not ignore the instructions included within this manual.

SPECIFICATIONS:

|	
FREQUENCY RANGE	60Hz -20KHz
FREQUENCY RESPONSE	65Hz- 18KHz ± 3dB
COVERAGE	Rotatable 80° x 50°
MAX SPL	133 dB/ 136dB peak 1w@ 1m
TRANSDUCERS	LF/MF: 12" (100mm voice coil) 4 Ohm, Nomex Cone/suspensions, Neodimium magnet HF: 1 x 1.4" exit throat, 4'' Titanium diaphragm Neodimium magnet, 8 Ohm
SHAPE	Trapezoidal
POWER AMPLIFIER	1500W Class D with Switching Power supply 750W Low/Mid + 750W High
DSP	Internal LYNX processor DSPB-22® with FIR filters
CABINET ADJUSTMENT	Back panel LCD screen
INTERNAL CONTROLS	Temperature sensor
SIGNAL CONNECTION	NEUTRIK connectors XLR Male Input XLR Female Loop Thru
CONTROL CONNECTIONS	USB (DSP programming), ETHERNET* (Online Monitoring System OMS®)
AC POWER	230v / 115v selectable. 50/60 Hz 5A
AC CONNECTIONS	16A NEUTRIK POWERCON with Link Output
CONSTRUCTION	15 mm Premium Birch plywood
FINISH	High resistant water-based black paint
FRONT DESIGN	Black antirust steel grille
DIMENSIONS (H x W x D)	637 x 376 x 411 mm
WEIGHT	28 Kg (62 lbs)

* Ethernet connection is optional.

ADP-12 BACK PANEL.-
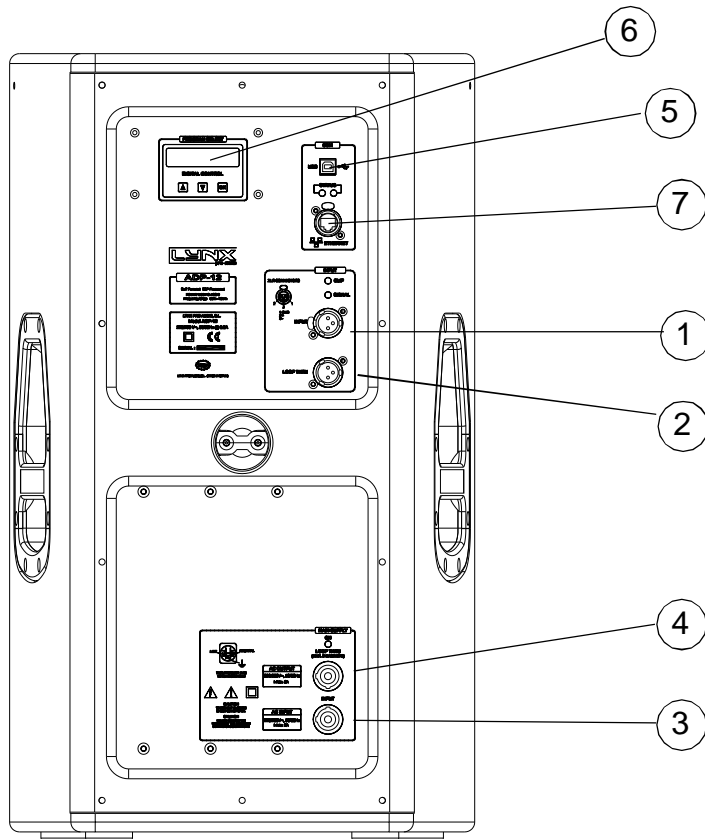
1.- SIGNAL INPUT.
2.- SIGNAL LINK.
3.- AC INPUT.
4.- AC LINK (máx. +2 cabinets).
5.- USB.
6.- DSP CONTROL.
7.- ETHERNET (optional)

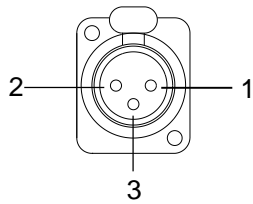## CONNECTORS AND CONNECTIONS

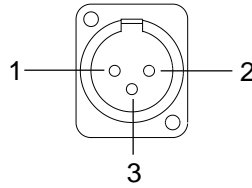### XLR AEREAL CONNECTORS
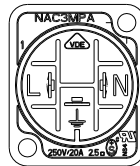

Connect to input

1 Earth
2 Live(+)
3 Live(-)

Connect to output
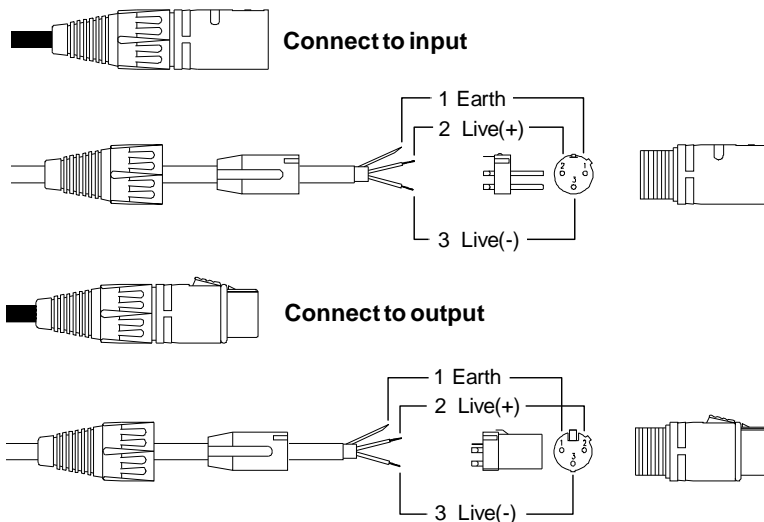
1 Earth
2 Live(+)
3 Live(-)

XLR SOCKET CONNECTORS

INPUTS
1.- EARTH
2.- LIVE (+)
3.- LIVE (-)

OUTPUTS
1.- EARTH
2.- LIVE (+)
3.- LIVE (-)
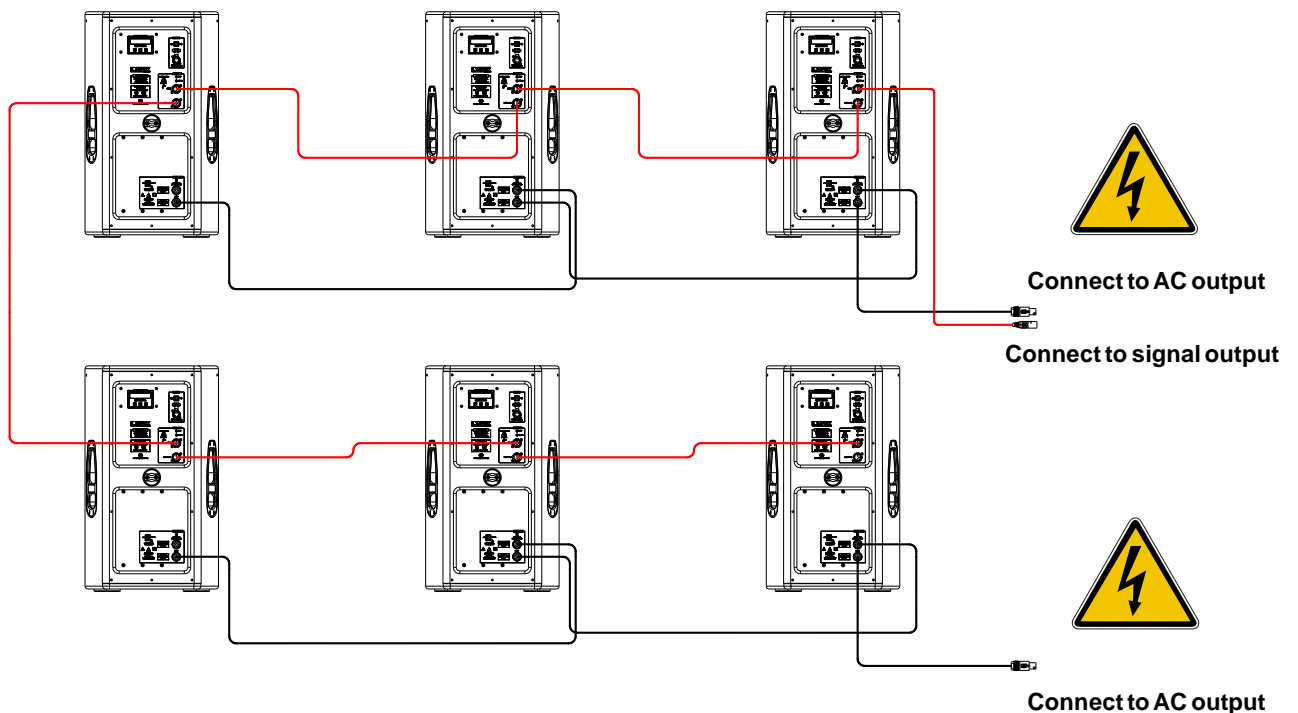
SOCKET POWERCON CONNECTORS

CAUTION: Do not connect or disconnect the AC Power connectors under load.

L - Line

N - Neutral

⏚ - Earth

CONNECTION EXAMPLE: 6 ADP-12 CABINETS

Connect to AC output

Connect to signal output

Connect to AC output

CAUTION:
DO NOT CONNECT OR DISCONNECT THE AC POWER CONNECTORS UNDER LOAD.

CONFIGURING THE CABINET DSP OPTIONS

From the buttons below the display on the cabinet's back panel you are able to configure the Basic adjustment functions of the internal DSP. Depending on the model, you can find the following configurations:

Preset	Display Name	Additional info
01	FIR FULL RANGE	Full range with FIR filters
02	FIR X80Hz	80 Hz high pass with FIR filters
03	FIR X90Hz	90 Hz high pass with FIR filters
04	FIR X100Hz	100 Hz high pass with FIR filters
05	FIR FULL R -6	Full range with FIR filters - 6dB
06	FIR X80Hz -6	80 Hz high pass with FIR filters -6dB
07	FIR X90Hz -6	90 Hz high pass with FIR filters -6dB
08	FIR X100Hz -6	100 Hz high pass with FIR filters -6dB
09	FIR FULL R INV	Full range with FIR filters INVERTED
10	FIR X80Hz INV	80 Hz high pass with FIR filters INVERTED
11	FIR X90Hz INV	90 Hz high pass with FIR filters INVERTED
12	FIR X100Hz INV	100 Hz high pass with FIR filters INVERTED
13	FIR FR -6 INV	Full range with FIR filters – 6dB INVERTED
14	FIR X80 -6 INV	80Hz high pass, FIR filters -6dB INVERTED
15	FIR X90 -6 INV	90Hz high pass, FIR filters -6dB INVERTED
16	FIR X100 -6INV	100Hz high pass, FIR filters -6dB INVERTED
17	FIR FULL RANGE	Full range with FIR filters
18	FIR FULL RANGE	Full range with FIR filters
19	FIR FULL RANGE	Full range with FIR filters
20	FIR FULL RANGE	Full range with FIR filters

Note:
You must apply the desired configuration in each one cabinet. This is done via the buttons located on the back panel of the cabinet and requires electrical power to work.

FIR FILTERS

Finite Impulse Response (FIR) filters are used in the signal processing of the ADP-12 cabinet. FIR is a type of digital filter with linear phase characteristics. This frees system designers from the constraints of phase anomalies associated with analogue filters or their digital versions (IIR, Infinite Impulse Response). When properly used, FIR filtering can audibly improve a system's impulse response and reduce crossover interference.

CONFIGURATION PANEL

On the back panel you will see 3 buttons and an information screen, on which you can read the established parameters and information such as amplification module temperature, input signal level and name of the current preset (Fig1). If changes are not made the display will automatically dim to save energy and avoid unnecessary light in situations where light is not wanted. To re-activate the light simply press the OK button.

Fig 1

SELECT AND RUN PRESET

To change the preset configuration just press the up button (Fig2(1)) and down button (Fig2(2)) until you see the title and preset number required. Once found, press OK (Fig2(3)) until the progress bar finishes (Fig3). The display will indicate "Loading DSP" (Fig4)
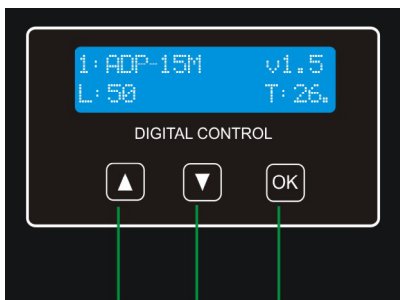
Fig 2
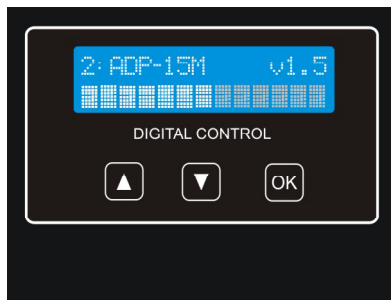
Fig 3
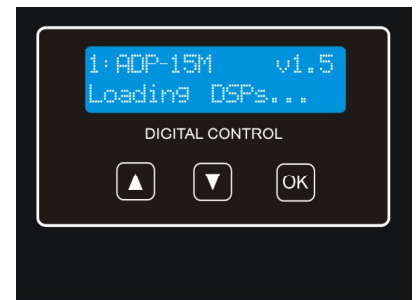
Fig 4

Note:
In case of a power cut, the DSP will save its last configuration when restarted.

ONLINE CONTROL SYSTEM

Who is it for?

Users of Self powered DSP incorporated Lynx Pro Audio Cabinets where the user has requested the cabinets be supplied with the Ethernet Module kit.

What is it for?

Obtain detailed information of cabinet behaviour and monitor the cabinet/s in real time. You can change the preset, gain, mute and polarity. You can also activate the air absorption compensation and select the «SOLO» mode.

How does it work?

Via Ethernet (cable or wireless). Once installed, the O.C.S. software automatically detects all the cabinets connected to the network and displays them in the O.C.S. window on the users PC.

What does it show?

As well as displaying the cabinet model and IP address the O.C.S will be monitoring in real time and the user will be able to view RMS levels, Input clip, power module temperature, compression levels, air absorption compensation and cabinet angulation.
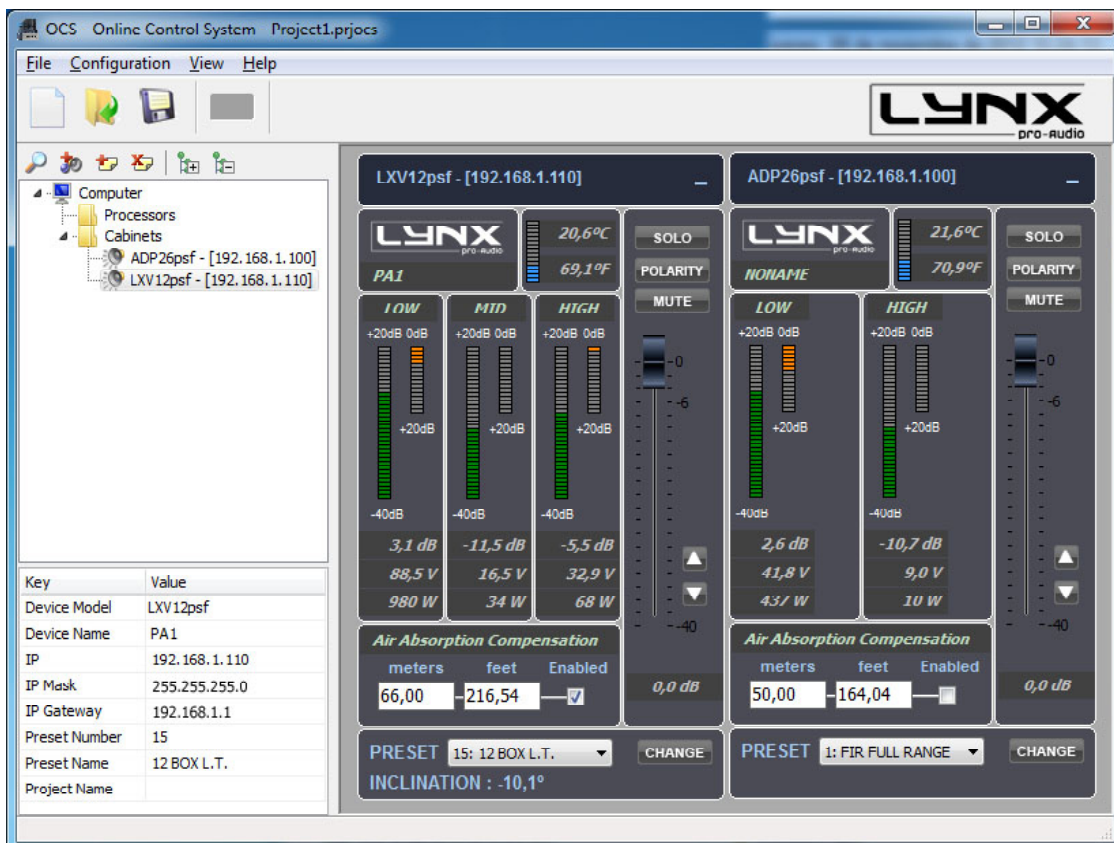
CONFIGURING ETHERNET TO WORK WITH THE ADP-15

There are two possible ways to connect:

     1.- Connecting through an ETHERNET SWITCH/HUB::
          - You will need a normal CAT5 Cable.

     2.- Connecting through a Wirless ETHERNET.

Let us now proceed to configure the Ethernet network, setting the IP address of the computer as static. To do this go to:
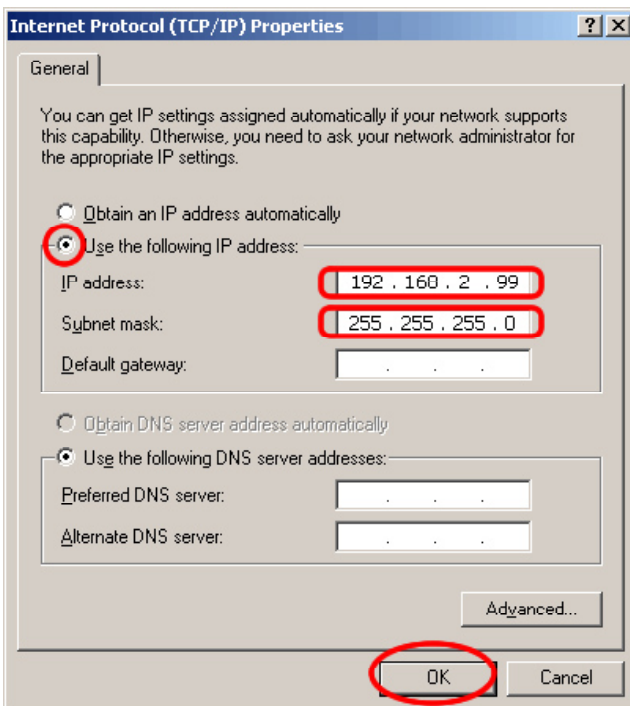
START > CONFIGURATION > NETWORK CONFIGURATION
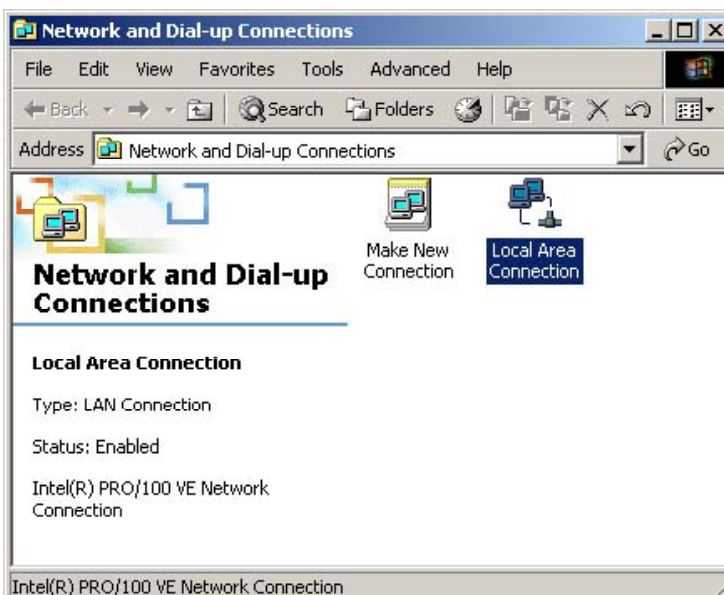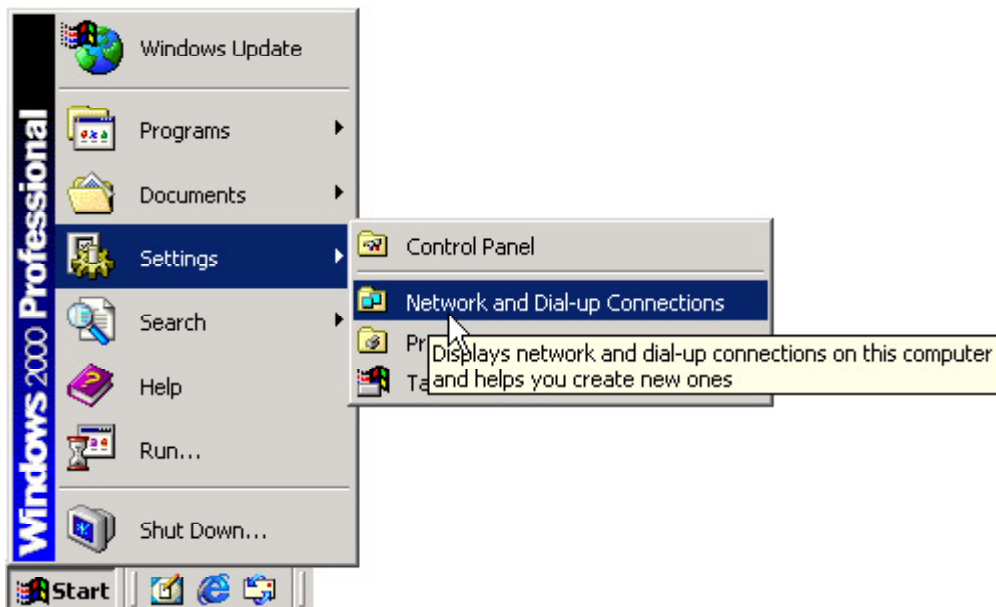
We will launch the properties of "Local Area Connection" by clicking the right mouse button and clicking on properties.
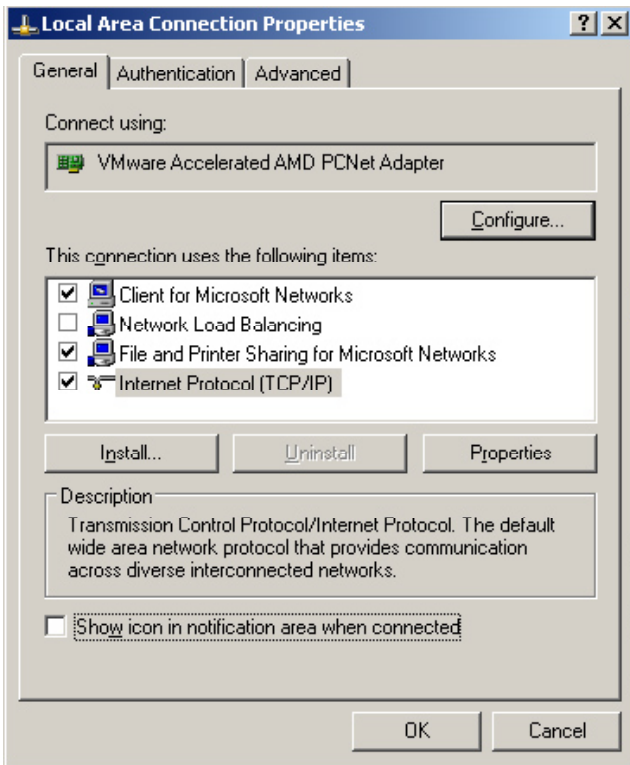
Select "Internet Protocol (TCP / IP)" and click on properties.

Select: "Use next IP Address" And write as you wish, in order to configure your network.

Normally, Ip values will be something like this:

IP Address: 192.168.2.xxx
*Subnet Mask: 255.255.255.0*

Where xxx will be a number between 1 and 254

Accept to quit the network settings and again to apply them at the next screen. Depending on the Windows Version, you will be asked to reboot or not.

Once the Computer is configured with a static IP proceed to connect to the line array system through the O.M.S. (online monitoring system) software.

Open the O.M.S Software and from the Initial Screen choose ETHERNET.

It will open a different screen, as follows, there you can see your Network configuration, and the cabinets currently connected.
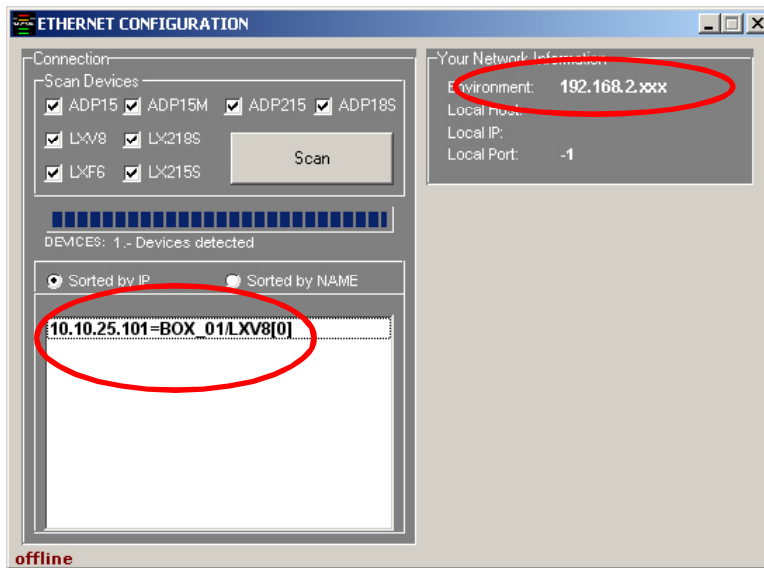
In this case, we can see that the cabinet do not have the same IP environment as the PC. So, select the cabinet and modify the assigned IP in order to be able to connect to it.

By default, the Cabinet will have this IP 192.168.2.100 (Versions before 2009 could been asigned with IP 10.10.25.101 or IP 192.168.1.100)
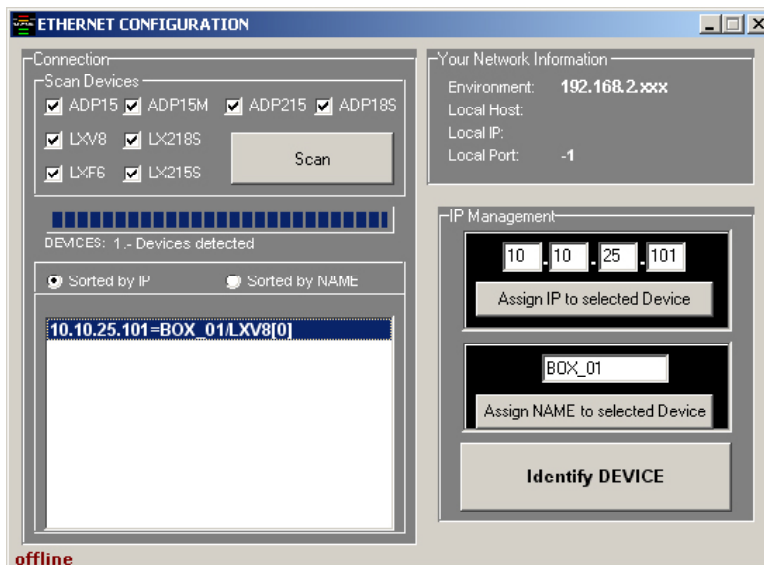

The Network enviroment consists in the first 3 sets of three numbers separated by dots. In order to detect/communicate with the cabinets, the software and the cabinets **must have the same Network settings**.

If it is not in the same environment Windows Profesional (2000, XP, VISTA) will detect it, but is not going to be able to establish connection. In Windows Home, the processor is not going to be detected until the same enviroment is applied.

In order to **change the IP** settings to have the same configuration as the PC, we can change the IP address of the cabinets by clicking in the *Assign IP to select Device* button after writing in the box above the desired data. Remember there cannot be two devices with exactly the same IP address, the last set of three numbers has to be different and unique to each one of the devices.

for example, write 192.168.2.101 and click "***Assign IP to select Device***" button.

The OMS software will send the new IP to the cabinet and it will scan the network again showing the same information as before, plus more information such as Pc name, IP address and Port in which the communication is established.
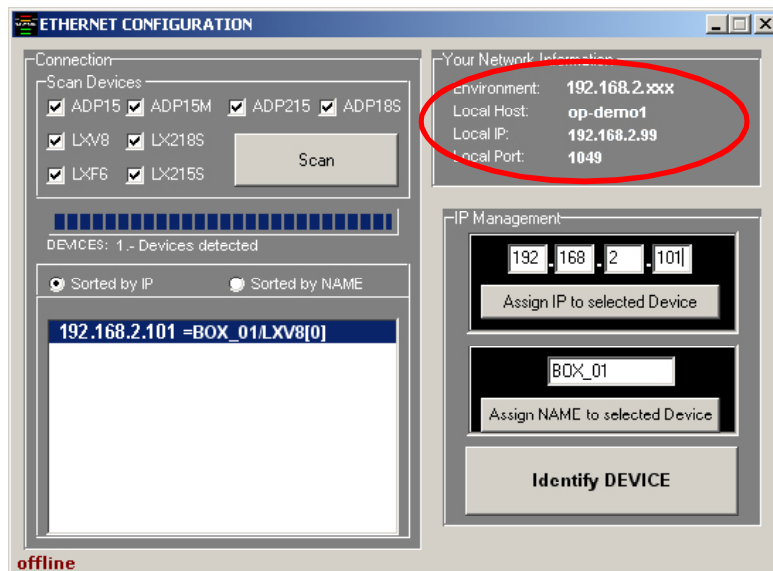
When we have a lot of cabinets connected in the network we can use the button **"Identify Device"** to see which box is selected (two activity LEDS will blink for one second). With that information then we can **"*Change NAME*"** assigned to this Cabinet by clicking in the **"*Assign NAME to select Device*"** button after writing in the box above the desired Name.
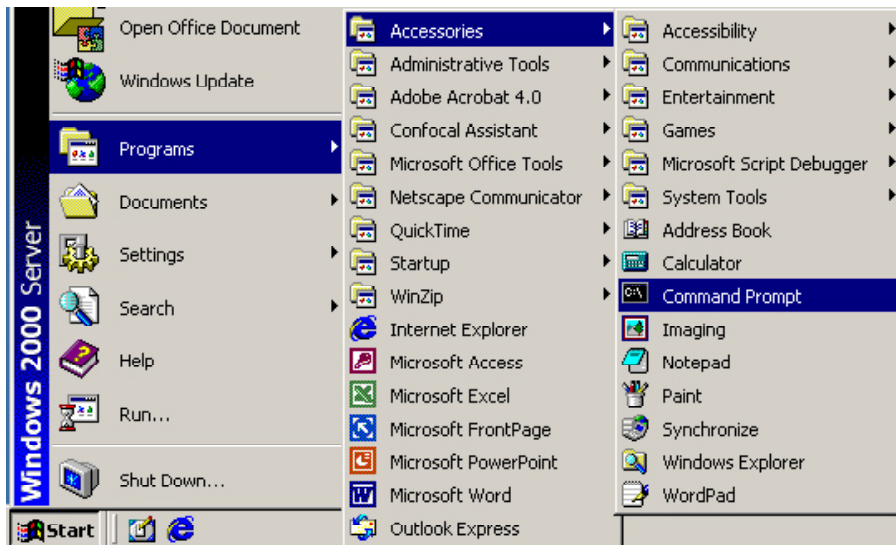
We can sort all the detected cabinets by Name or IP Address.

Returning to the main screen, we can see each cabinet showing: Model, IP address and Name, as well as monitoring: RMS Level, Input Clip, Cabinet angulation, amplifier temperature and fan speed.
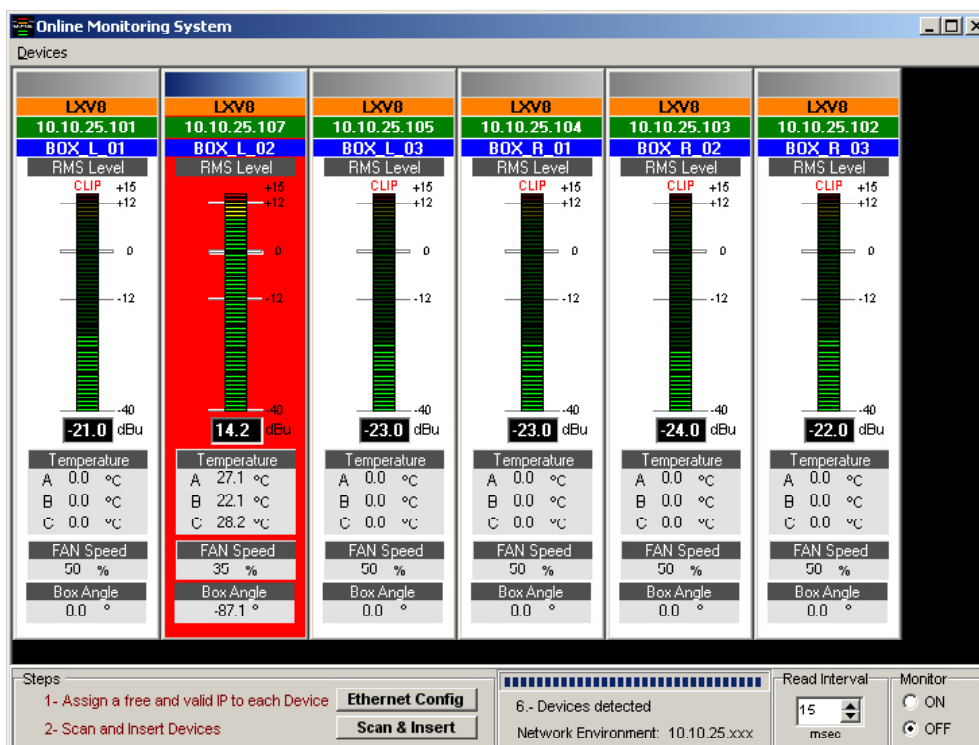
If you need to know the PC Network settings go to:

START > ALL PROGRAMS > ACCESSORIES > Command Prompt

It will open the cmd.exe from where you can type the IPCONFIG command (ipconfig + Enter), which will show your actual IP settings.
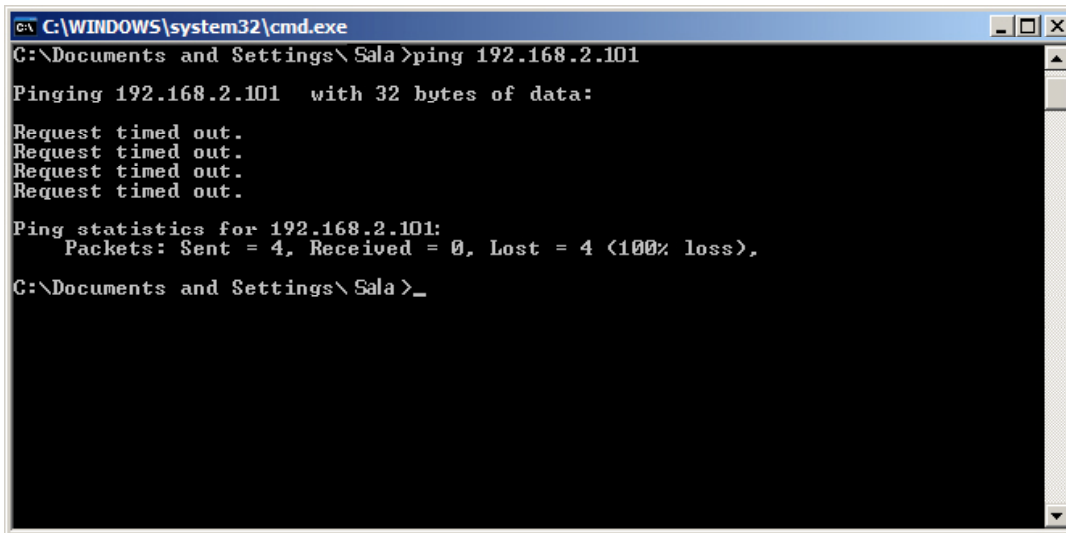
Here we can see that this PC has IP set as 192.168.2.99.

You can also use the command promt to know if an IP is already in use by another device. In this case type "ping IP" (ping 192.168.2.xxx) and press enter. If there is no device with this IP you will see the following information:

```
C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\ Sala >ping 192.168.2.101

Pinging 192.168.2.101   with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.101:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\ Sala >_
```
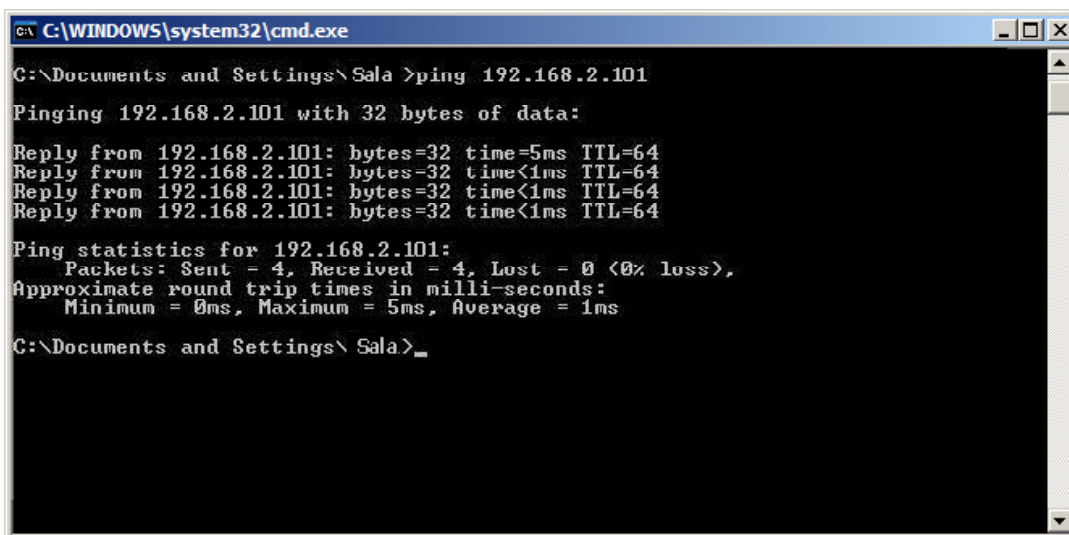
If the IP is in use, the device will respond to the Ping, and we will obtain this information:

```
C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\ Sala >ping 192.168.2.101

Pinging 192.168.2.101 with 32 bytes of data:

Reply from 192.168.2.101: bytes=32 time=5ms TTL=64
Reply from 192.168.2.101: bytes=32 time<1ms TTL=64
Reply from 192.168.2.101: bytes=32 time<1ms TTL=64
Reply from 192.168.2.101: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.2.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\Documents and Settings\ Sala>_
```
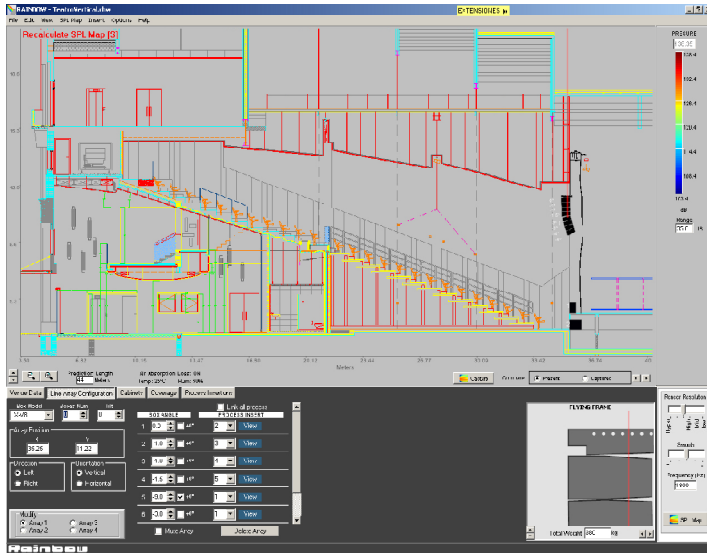
You now have the Cabinets working in the ETHERNET Network Enviroment.

RAINBOW – ACOUSTICAL PREDICTION SOFTWARE

Thanks to the RAINBOW software, you will be able to "virtually" determine the acoustical response of one or various cabinets at the same time.


Based on polar response measurements, taken meticulously with a 360º coverage both vertically and horizontally, the Rainbow software is able to calculate the SPL response including the interaction between them taking into account the magnitude and phase response, in order to enable the user to correct cancellations and even to create them if the acoustical design so requires.

Rainbow is very easy to use and offers a very intuitive design, multitool interface and on-line updatable data base.

The Rainbow software has been designed by and for sound technicians. Its aim is to help installers and users of Lynx products.

This software is able to import WMF Vector Files with technical drawings and insert them directly into the prediction window and thus enabling real measurement predictions.

This also helps to determine dead zones and obtain the maximum performance from each of the cabinets installed.
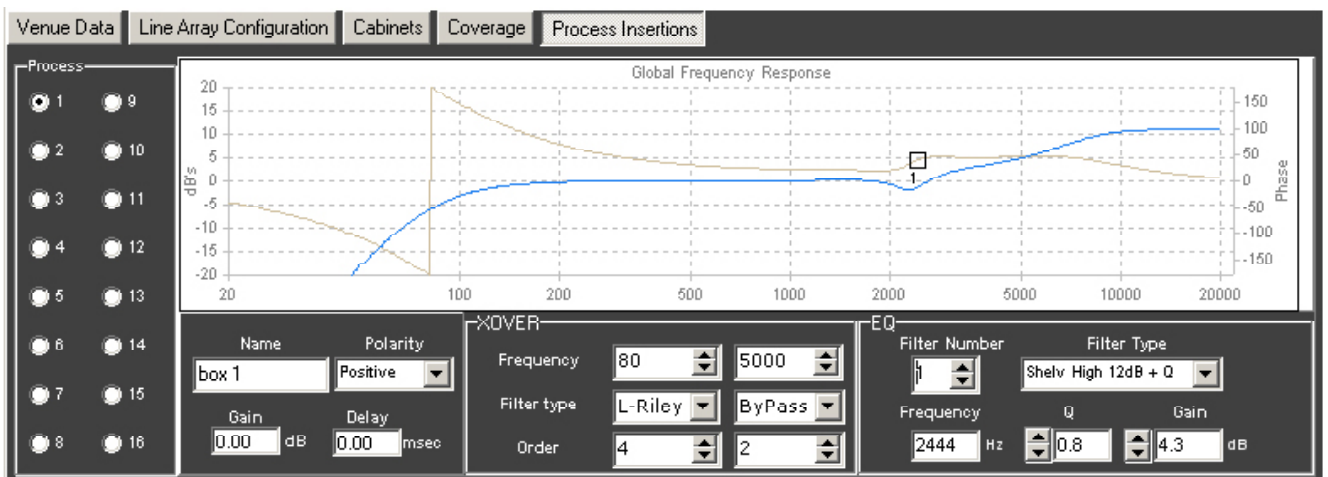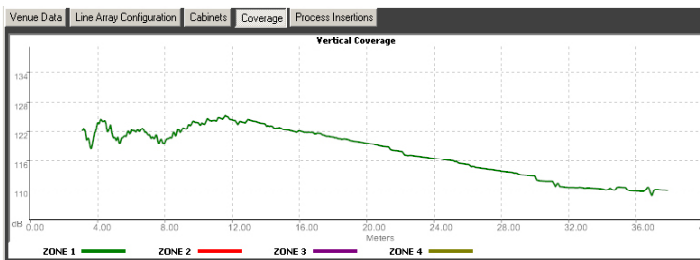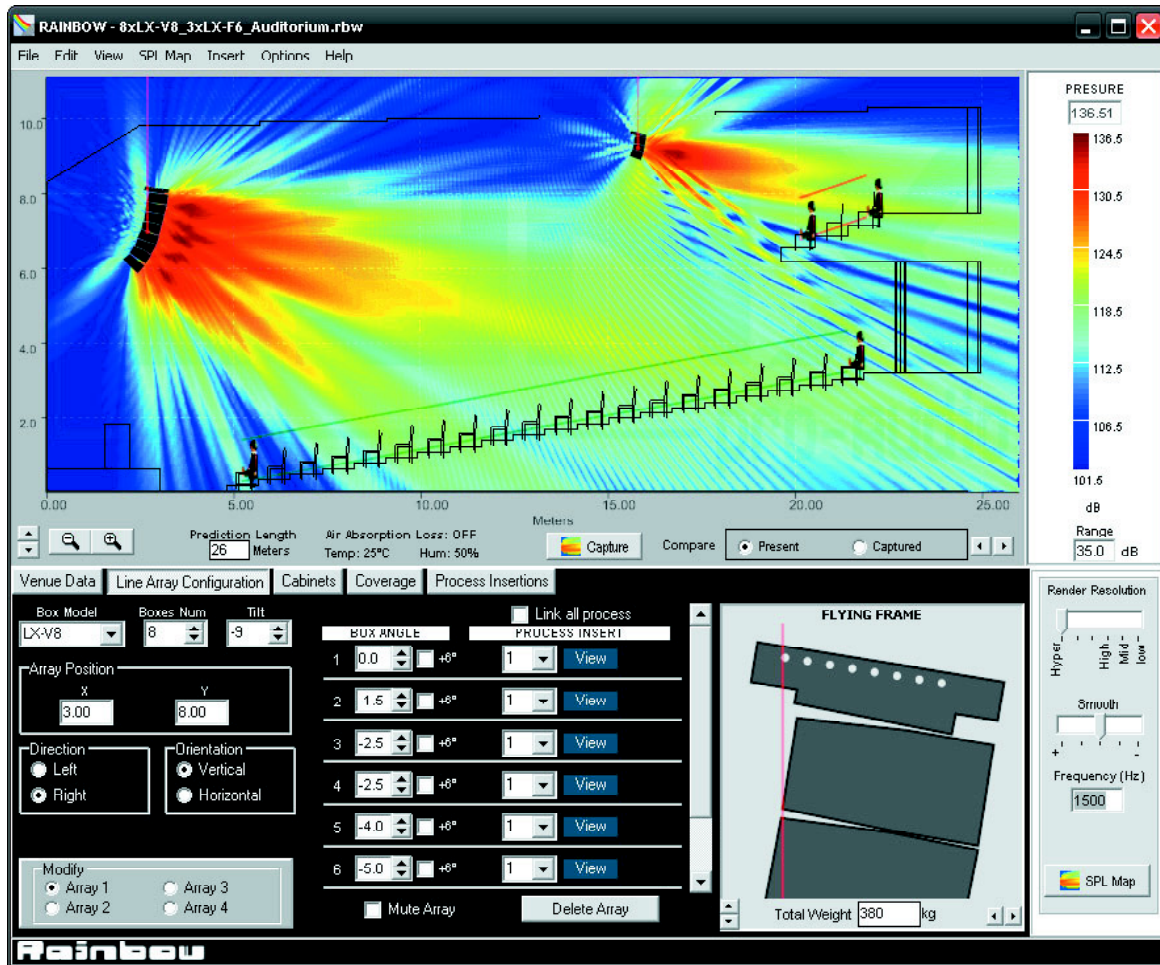
Features

The RAINBOW acoustical prediction software allows among other things:

- Prediction up to 4 LINE ARRAYS of 24 cabinets each simultaneously, together with multiple points with cabinets
- Flying points information according to the inclination of the cabinets
- Weight calculation of the different systems
- Sub-bass simulation (for instance to achieve cardiod configurations)
- Orientation of cabinets (Horizontal/vertical)
- Throw Direction of cabinets (right/ left)
- Individual delay per cabinet/system
- Polarity selection for each cabinet
- Up to 40 process insertions with Equalization and CrossOver assignable per cabinet.
- Simulation of the Air absorption sound loss with the distance
- SPL Pressure information
- Distance measurement
- Import of CAD files
- Up to 4 audience or hearing zones
- Coverage curves on the hearing zones.
- Export of SPL Map and coverage curves on jpg or bmp format
- Print project report (SPL prediction, flying points, weights, cabinet inclination, polarities, process aplied, EQ Curves…)

INSTALLATION AND RIGGING

The ADP series include a range of accessories for installation, rigging and transport.

WB-03

Wall bracket for
top hat insertion

SB-02

35mm Lightweight
aluminium stand

SC-FC1
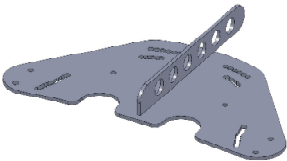
Lightweight install
stud

TU-C01

35mm connecting pole
for satellite combination
with ADP-18S. Spring-
loaded locking screw
and safety bolt

VSM-V1

35mm speaker
mounting top hat

TU-C02

M20 pole support for
satellite combination
with ADP-18S. Spring-
loaded locking screw
and safety bolt

HA-1215

Special plates to mount
Horizontal arrays with
ADP-12. Pack of 2
units.

FD-ADP12NL

Rain cover

LYNX PRO AUDIO GUARANTEE

Lynx products are guaranteed against every kind of manufacturing fault 2 year after the date of sale. When products are under guarantee, the repairing and the free supplying of the device parts in order to correct any kind of defect are guaranteed by Lynx Pro Audio S.L. In the case that the product could not be returned to the factory for checking and repairing, Lynx Pro Audio S.L. would supply all the necessary parts.

Lynx Pro Audio S.L. is not responsible for any damage or defect caused during the transport or caused by an undue or improper handling y a non-authorized person during the life of this guarantee.

All our products undergo rigorous tests and quality controls. We guarantee the characteristics described here within and their quality against any fabrication defect.

The user loses all warranty rights if he incorporates or carries out any modification to the product, if he uses it outside of the stated safe working loads or does not secure the system properly using all the pins in their corresponding holes.

For any question regarding the product, the user must quote the model and serial number.

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DECLARATION OF CONFORMITY

LYNX Pro Audio S.L.
Calle 7 - Pol. Ind. Picassent
E-46220 Picassent (Valencia)

Lynx Pro Audio S.L. declares that ADP series (all models) are in conformity with the following EC directives:

Low Voltage Directive   2006/95/EC
Electromagnetic Compatibility EMC   2004/108/EC
RoHS Directive   2002/95/EC

In accordance with Harmonized European Norms:

EN 60065:2002   Audio, video and similar electronic apparatus. Safety requirements

EN 55103-1:1996   Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 1: Emission.

EN 55103-2:1996   Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.

WEEE Declaration: Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime. Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product please contact Lynx Pro Audio S.L.