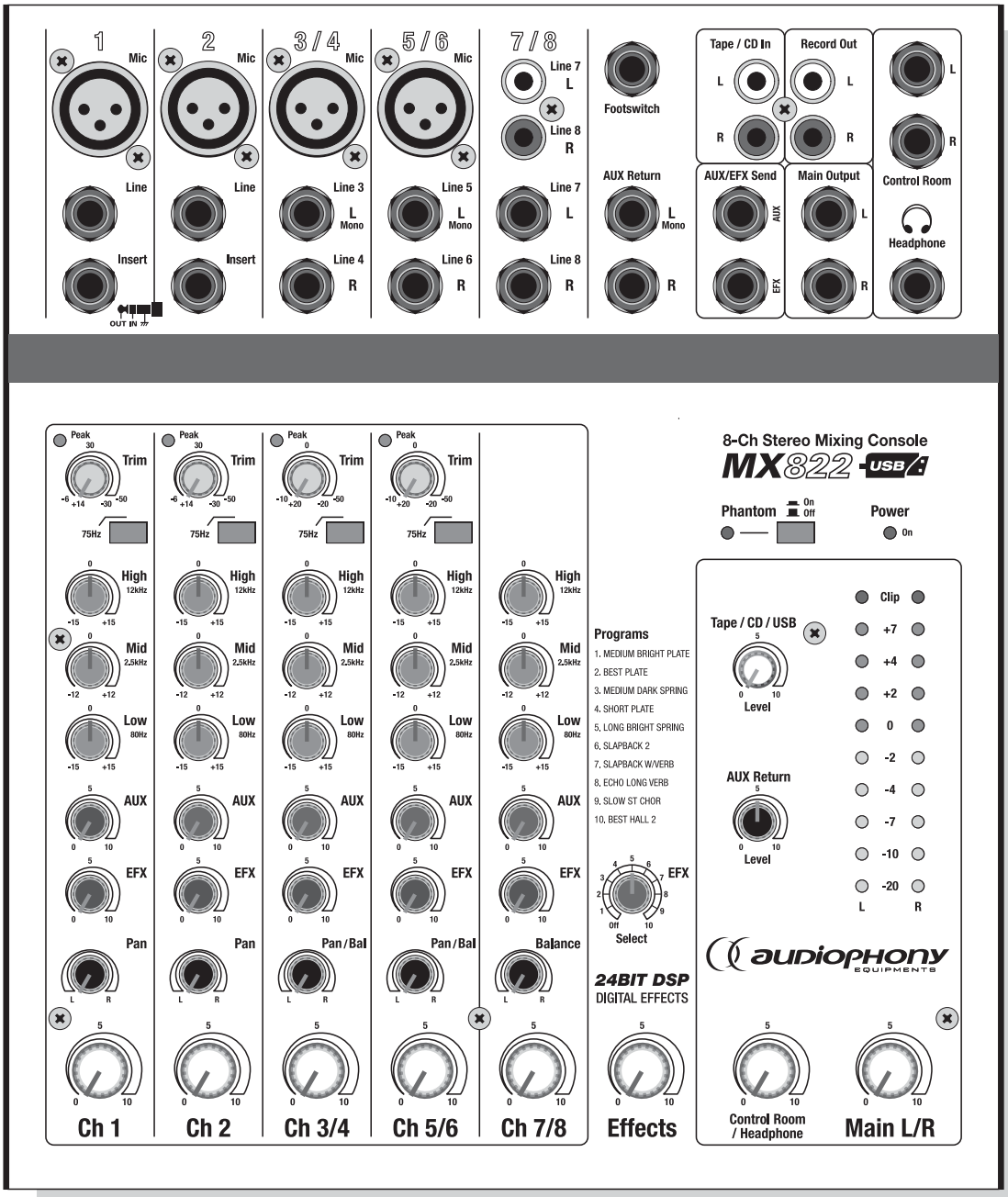
audiophony EQUIPMENTS

Live mixer with 4 mics + 5 lines + 24-bit DSP, 10 FX and USB port



MX822

USER GUIDE

9558 - September 2009 Version 1.0

1 - Safety information

1.1 - Important safety information

This unit is intended for indoor use only. Do not use it in a wet, or extremely cold/hot locations. Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to this product or other property.

Any maintenance procedure must be performed by a CONTEST authorised technical service. Basic cleaning operations must thoroughly follow our safety instructions.

This product contains non-isolated electrical components. Do not undertake any maintenance operation when it is switched on as it may result in electric shock.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: This unit contains no user-serviceable parts. Do not open the housing or attempt any maintenance by yourself. In the unlikely even your unit may require service, please contact your nearest dealer.

Risk of electrocution

To prevent the hazard of electric shocks, do not use extension cords, multi-socket or any other connection system without making sure metal parts completely are out of reach.

WARNING

Sound levels

Our audio solutions deliver important sound pressure levels (SPL) that can be harmful to human health when exposed during long periods. Please do not stay in close proximity of operating speakers.

Recycling your device

• As HITMUSIC is really involved in the environmental cause, we only commercialise clean, ROHS compliant products.
• When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

1.2 - Symbols used

IMPORTANT

This symbol signals an important safety precaution.

WARNING

The WARNING symbol signals a risk to the user's physical integrity.
The product may also be damaged.

CAUTION

The CAUTION symbol signals a risk of product deterioration.

1.3 - Instructions and recommendations

1 - Please read carefully:
We strongly recommend to read carefully and understand the safety instructions before attempting to operate this unit.

2 - Please keep this manual:
We strongly recommend to keep this manual with the unit for future reference.

3 - Operate carefully this product:
We strongly recommend to take into consideration every safety instruction.

4 - Follow the instructions:
Please carefully follow each safety instruction to avoid any physical harm or property damage.

5 -Avoid water and wet locations:
Do not use this product in rain, or near washbasins or other wet locations.

6 - Installation :

We strongly encourage you to only use a fixation system or support recommended by the manufacturer or supplied with this product. Carefully follow the installation instructions and use the adequate tools. Always ensure this unit is firmly fixed to avoid vibration and slipping while operating as it may result in physical injury.

7 -Ceiling or wall installation:
Please contact your local dealer before attempting any ceiling or wall installation.

8 - Ventilation:

CAUTION

The cooling vents ensure a safe use of this product, and avoid any overheating risk.
Do not obstruct or cover these vents as it may result in overheating and potential physical injury or product damage. This product should never been operated in a closed non-ventilated area such as a flight case or a rack, unless cooling vents are provided for the purpose .

9 - Heat exposure:

WARNING

Sustained contact or proximity with warm surfaces may cause overheating and product damages. Please keep this product away from any heat source such as a heaters, amplifiers, hot plates, etc...

10 - Electric power supply:

WARNING

This product can only be operated according to a very specific voltage. These information are specified on the label located at the rear of the product.

11 - Power cords protection:

CAUTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at lugs, convenience receptacles and the point where they exit from the fixture.

12 - Cleaning precautions:

CAUTION

Unplug the product before attempting any cleaning operation. This product should be cleaned only with accessories recommended by the manufacturer. Use a damp cloth to clean the surface. Do not wash this product.

13 - Long periods of non use:

WARNING

Disconnect the unit's main power during long periods of non use.

14 - Liquids or objects penetration:

CAUTION

Do not let any object penetrate this product as it may result in electric shock or fire.
Never spill any liquid on this product as it may infiltrate the electronic components and result in electric shock or fire.

15 - This product should be serviced when:
Please contact the qualified service personnel if :

WARNING

- The power cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the appliance.
- The appliance has been exposed to rain or water.
- The product does not appear to operate normally.
- The product has been damaged.

16 - Inspection/maintenance: Please do not attempt any inspection or maintenance by yourself. Refer all servicing to qualified personnel.

17 - Operating environment:

CAUTION

Ambient temperature and humidity: +5 - +35°C, relative humidity must be less than 85% (when cooling vents are not obstructed).
Do not operate this product in a non-ventilated, very humid or warm place.

2 - Introduction and Installation

2.1 - Introduction

Thank you for purchasing the MX822.
You are now in possession of a high-quality device which will meet your every need.
The MX822 is an orchestral mixing desk featuring a USB port and 24-bit DSP.
It is easy to use, fast, and features many functions: it is super-efficient.
The user guide you are currently reading will help you getting familiar with the many possibilites and functions offered by your MX822.
Keep it within reach during the first uses.

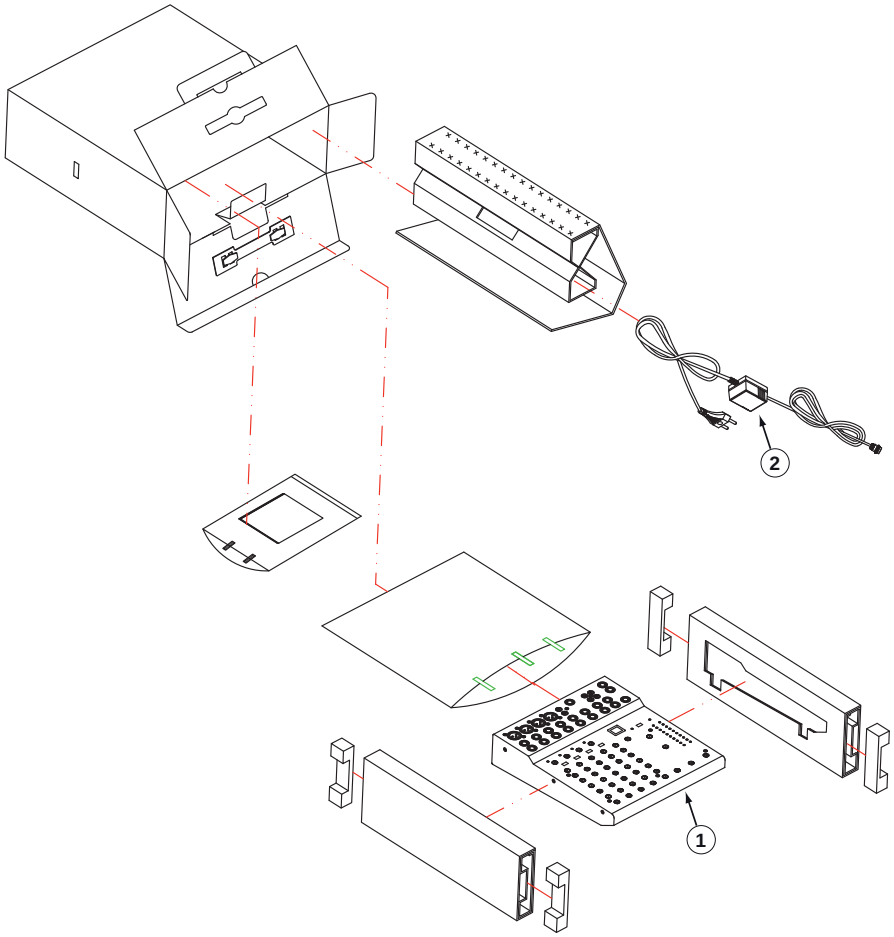
2.2 - Package contents

Your console has been packed with the utmost care to prevent any transportation damage. If the package shows any sign of damage, please make sure your console housing is in perfect condition.

In the package you may find :
1 - Your MX822 mixing desk
2 - An external power supply

And, of course, the user guide you are currently reading.

Please contact your retailer immediately if one or several of these articles were to be missing.

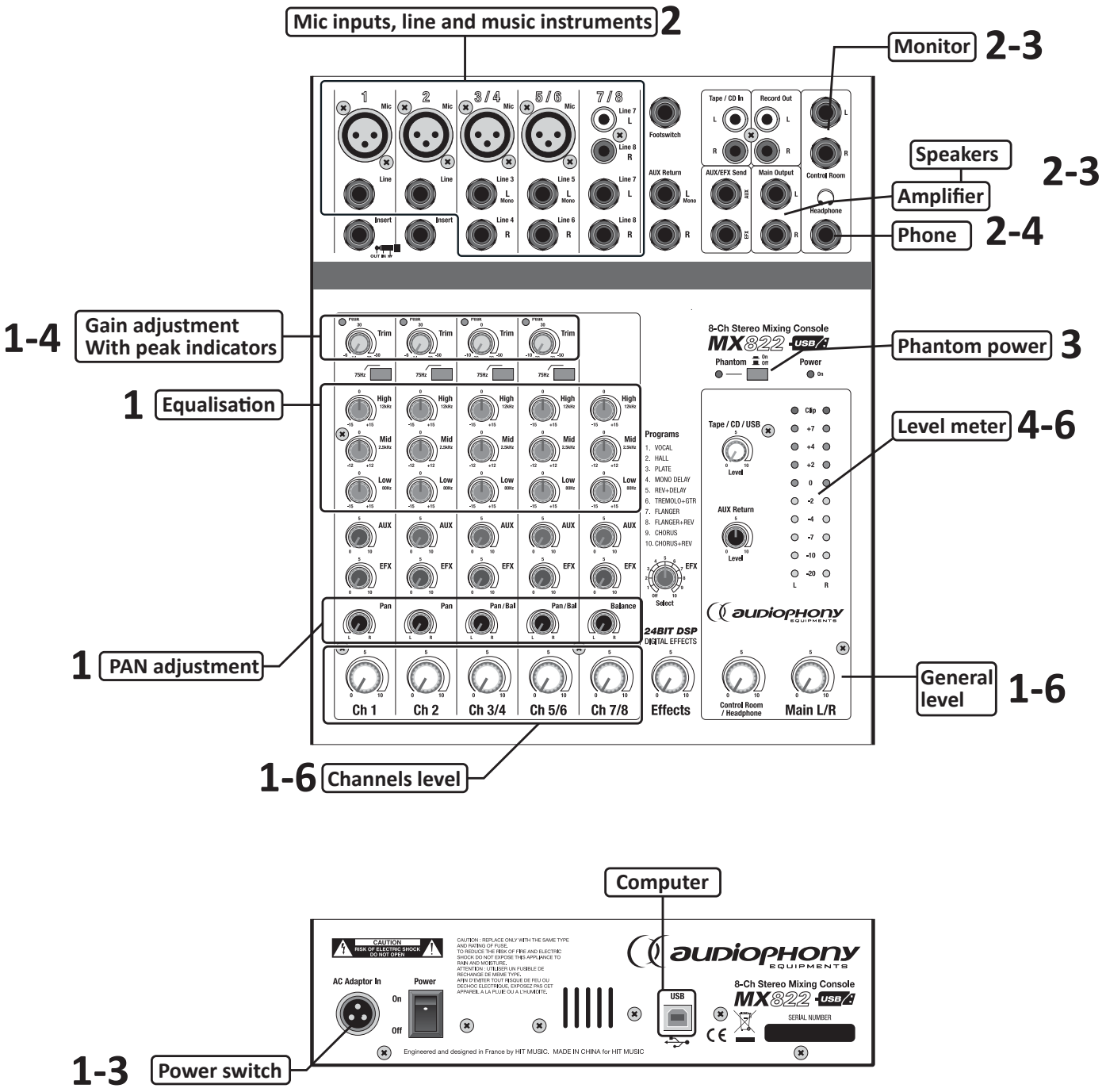


2.3 - Installation

CAUTION

Your MX822 was designed to be operated horizontally when not mounted into brackets. Please make sure your MX12/1624 does not vibrate, or is not
being acted upon by an outside force to prevent any fall.

3 - Getting started in 6 steps



1 - Turn your console volume at the lowest.
The volume control commands are: the channel faders, gain control knobs, ALT 3/4 faders, the main L/R fader, and the AUX/EFX Send control knobs.

2 - Turn off any external device and connect the microphones and instruments.

Note :
- Please refer to chapter 7 for more details about connectors to be used.
- If connecting guitars or basses, please use direct boxes (DI). By connecting directly these instruments, they will produce a poor sound quality.

3 - In order to preserve your speakers, please turn on your devices in the following order:
a - External devices
b - Your MX822
c - Power amplifiers or amplified speakers

Note :
If you are using microphones requiring a phantom power supply unit, please turn on this power supply before turning on your console.

4 - Adjust the gain control settings so the peak LEDs flash momentarily during sound level peaks:

Note :

- In order to precisely configure a channel, please use the PFL switch of said channel and adjust the gain so the LED VU meter occasionally goes beyond O.

- The headphones output will allow you to monitor the volume settings. This output sends the pre-fade signal (prior to any channel settings).

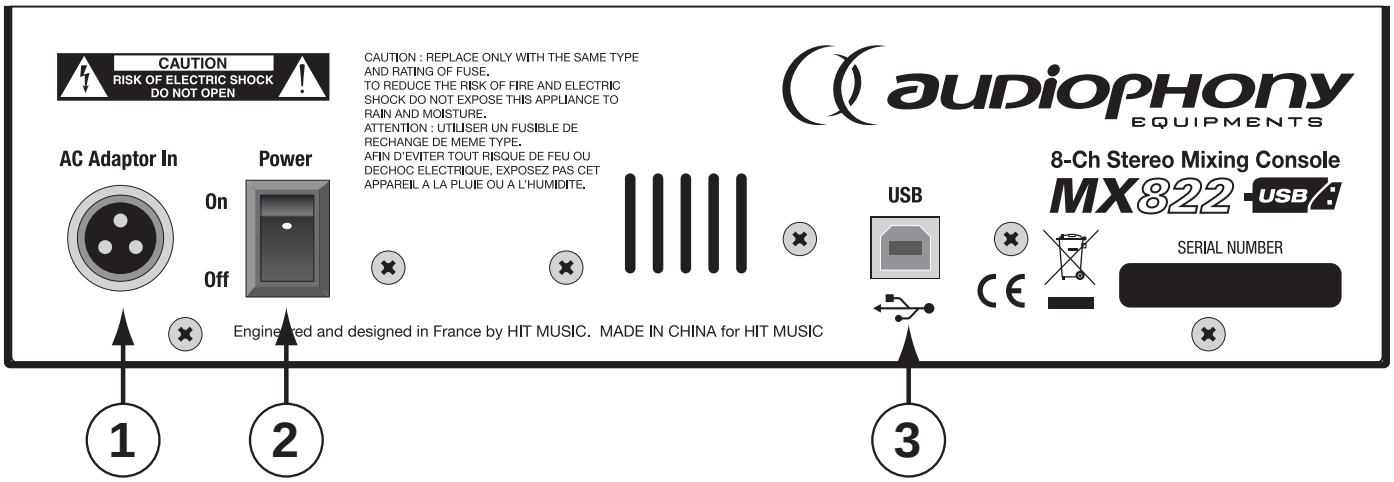
5 -Set the MAIN L/R fader on "0".

6 - Adjust the channels levels to get the proper balancing, then use the MAIN L/R fader to adjust the main volume.

Note :

Deactivate the channels PFL, ALT 3/4 and Tape/CD/USB switches located below the VU meter to display the main sound levels via the VU mete

4 - Rear panel



1 - Power input socket:
Connect the power supply unit provided for the purpose.

CAUTION: Your mixing desk has been designed to use the supplied AC adapter only. Using any other power supply units voids the warranty.

2 - Power switch

4 - Digital audio USB input/output
The MX822 USB port will be detected automatically by your computer (PC or MAC) as bi-directional sound card. The volume of this output can be configured via the Tape / CD / USB fader.

5 - Using the USB port

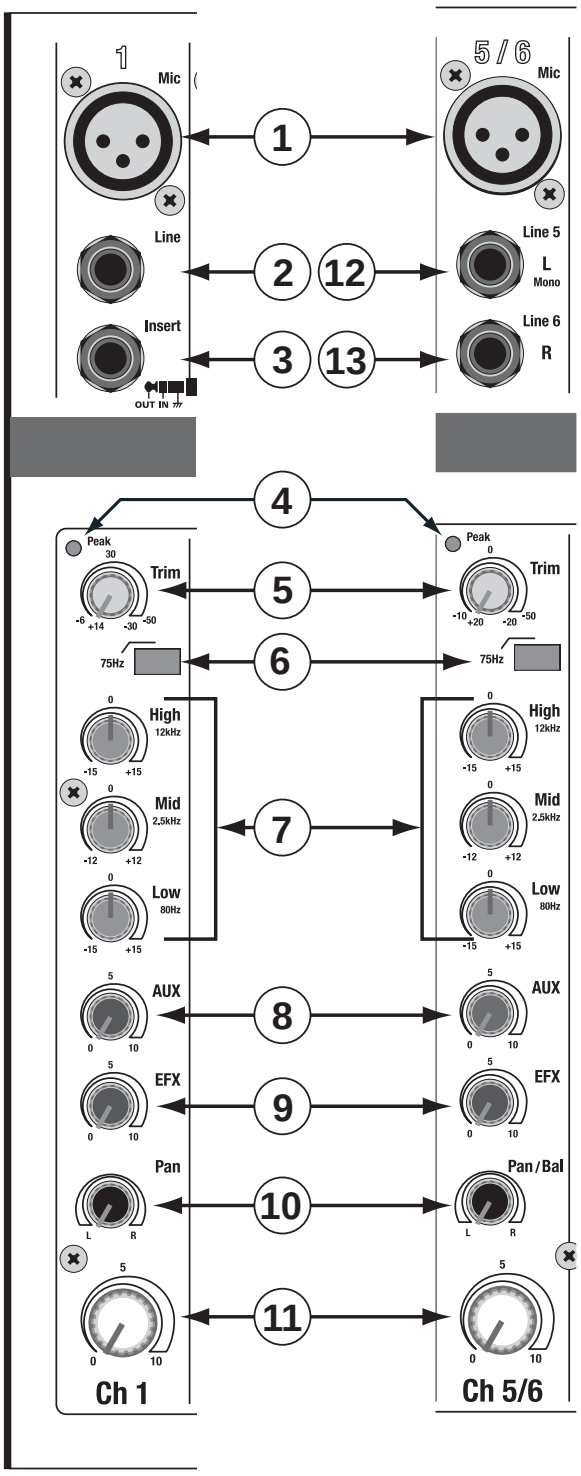
The USB port of your mixing desk allows you to play files from your computer, or record the audio mix onto your computer.
The Full Duplex system allows you to simultaneously:

- Send a source from your computer to your mixing desk via multimedia softwares.
- Send a source from your mixing desk to your computer in order to record it via dedicated softwares.
- Your MX12/1624 uses a standard USB Audio Codec protocol (USB audio device), compatible with every recent and updated OS.
- This codec does not require specific drivers to be compatible with your computer.
- Connect a USB A/B cable from your computer to your mixing desk (detected as sound card) and follow your computer instructions in order to send or receive a signal from your MX12/1624.
- The volume of the USB input/output can be configured via the Tape / CD / USB fader.

CAUTION:
- It is inadvisable to connect or disconnect a USB device when your console is activated, or playing a track from your computer.
- You cannot connect a USB Mass Storage source (USB key, hard disks...) to this USB port.

6 - Description per zone

6.1 - Mono area



1 - Mic inputs:
Connect your microphones here. These microphone inputs are balanced and can be powered up by a phantom power supply when using condenser microphones. Please refer to chapter 7 for more details about the hardwiring of these inputs. These inputs can also receive unbalanced signals.

2 - Line inputs:
These line-level inputs, via Jack TRS (stereo) chassis, are balanced. These inputs can also receive unbalanced signals. Connect here your keyboards, line-level guitar amplifiers outputs, direct boxes, etc.
Please refer to chapter 7 for more details about the hardwiring of these inputs.

3 - Insert socket:
This socket is located between the input amplifier and the high-pass filter (6).
It allows you to insert your own DSP, graphic equalizer, compressor or any other sound processing device between the incoming signal and the sound processor of the input.
Please refer to chapter 7 for more details about hardwiring.

4 - Peak LED:
This LED allows you to check on the sound level of the incoming signal. It lights up when the incoming signal is just 5dB below the channel saturation threshold. This is measured after the equalisation, and before the channel fader. This LED should not be lit too often, using the **Trim** control knob allows you to decrease the volume output of the device connected on this channel.

5 - Trim control knob:
This control knob allows you to adjust the amplfication level of the channel.
Position this fader on the left before dis/connecting any source on this channel.
This knob has two different modes of operation:
- From -30 to +14dB for the microphone input.
- From -50 to -6dB for the line level input.

Upon connection of a line level source (-10dBV or +4dBU), position this knob onto the position matching the output level, send a signal and use the VU meter to make sure the output level reaches 0dB.

6 - High-pass filter switch:
Once activated, this switch activates the low-pass filter. This filter allows you to get rid of any frequence below 75Hz. Low frequencies usually carry parasitic noises due to low quality cables or polluted environments (ground feedbacks, etc.).

7 - Equalization area:
Each channel features a high-quality equalization for three frequencies:

Setting	Range	Frequency	Curve type
HIGH	+/- 15 dB	12 KHz	Shelving
MID	+/- 12 dB	2,5 KHz	Peaking
LOW	+/- 15 dB	80 Hz	Shelving

The equalizer does not have any effect when these three buttons are in the middle position.

8 - AUX Control knobs:
These knobs allow you to adjust the signal level sent to the AUX bus.

9 - EFX control knob:
This knob allows you to adjust the signal sound level sent to the EFX bus. The main level of this bus is controlled by the **EFX Send** knob. This settings takes effect after the channel fader settings (14).
The EFX bus also powers up the built-in sound processor.

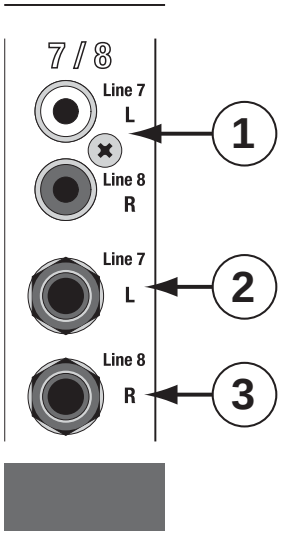
10 - Pan control knob:
This knob allows you to control the signal quantity sent to each ways (L and R) of the Main bus. You can choose which side of the stereo will send more signal.
If this knob is on the left e.g., the signal will be audible only on the left side of your sound system.

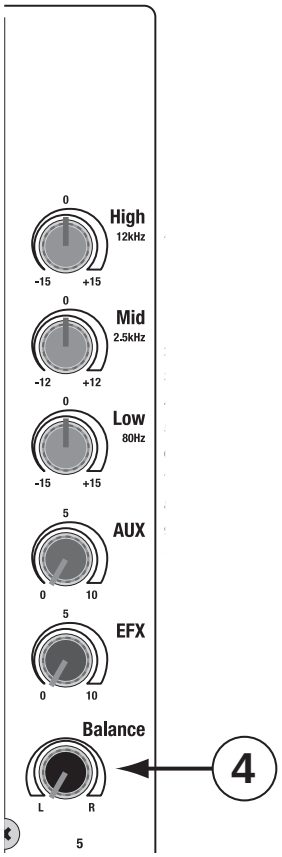
11 - Channel faders:
This fader allows you to adjust the main channel volume by controlling the signal quantity sent to the Main and EFX buses. This is especially useful to balance your different sources such as instruments, voices, etc.
We strongly recommend to position this fader on its lowest volume (-∞) when a channel is not used, in order to prevent parasitic noises.

12 - Line level inputs (L MONO) (channels 3 and 5) via Jack chassis:
Line-level inputs via Jack TS chassis (Mono). These inputs are unbalanced. A signal sent to these inputs will also be sent to both channels 9 and 11.

13 - Line level inputs (R) (canaux 4 et 6) via Jack chassis:
Line-level inputs via Jack TS chassis (Mono). These inputs are unbalanced. when a signal is detected on these inputs, the concerned area becomes stereo. This input affects the right side of your stereo signal.

6.2 - Stereo area





1 - Stereo input:
Unbalanced input via RCA chassis.

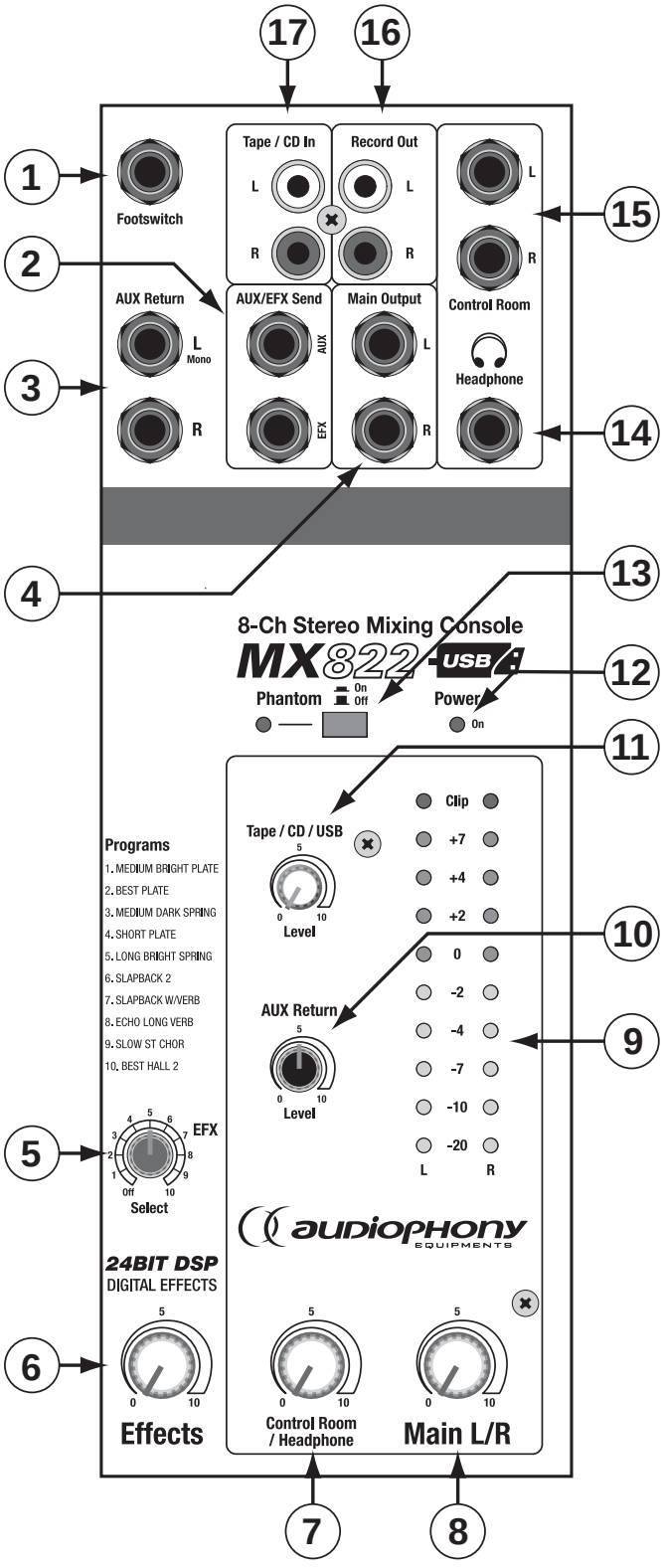
2 and 3 - Stereo input:
Unbalanced input via Jack chassis.

***Note** : If connecting a source via the RCA inputs, do not connect another source via these Jack inputs.*

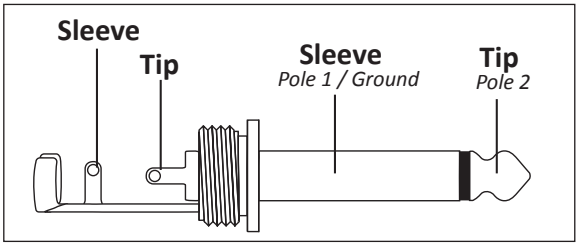
4 - Balance control knob:
Allows you to adjust the balance. Unlike mono areas, stereos areas are double, this knob allows you to adjust the signal quantity sent to both sides of this area before being sent to the Main bus.

***Note** :*
- This zone do not have any gain settings.
- Other settings are similar to mono areas.

6.3 - Master area



1 - Footswitch connector:
This Jack TS connector allows you to connect a footswitch in order to use the effects processor remotely. It is hardwired as follows:



2 - - AUX/EFX Send output:
- ***AUX Output***: Unbalanced signal from the AUX bus. Connect here a monitoring system or effects processor.
- ***EFX Output***: Unbalanced signal from the EFX bus. Connect here an external effects processor or monitoring system.
Using this output deactivates the internal multi-effects.

3 - AUX Return L MONO and R inputs:
Line level mono Jack chassis. Signals received via these inputs are sent to the AUX and Main L/R busses. These inputs are mainly used to receive signals from an external effect (Reverb, Delay, etc.).

> ***Note** : These inputs can also be used like a standard line level aux input. By connecting the L Mono chassis only, the signal will be sent to both L and R sides.*

4 - Main Output:
Balanced Jack TRS outputs. Signals sent to these outputs are the cimbination of all incoming signals. Connect here the main amplification system of your installation.

5 - EFX Select control knob:
Allows you to select effects. The processor features 10 factory presets, this list is exhaustively detailed in chapter X. The processor is deactivated when on "OFF".

6 - EFX control knob:
Allows you to adjust the signal level sent from the effects processor to the Main bus.

7 - Control Room / Headphone control knob:
Allows you to adjust the sound levels of the Control Room and headphones output.

8 - Main L/R control knob:
Allows you to control the volume output of all signals sent to the Main Output (4).

9 - LED VU meter:
Double vertical VU meter with 10 LEDs. Allows you to visualise the main volume output or per zone depending on the switches combination used as explained previously. Level "0" refers to +4dB for outputs for which +4dB is the nominal level.

10 - AUX Return control knob:
Allows you to control the signal quantity sent from the effect processor to the AUX bus.

11 - Tape/CD / USB control knob:
This knob allows you to adjust the volume of the Tape/CD In and USB inputs.
The USB connector is located on the rear panel. Please refer to chapter

5 for more details about the USB port.

12 - Power LED:
Lights up when your console is activated.

13 - Phantom switch:
Activates the phantom power supply for XLR microphone inputs. Condenser microphones require a phantom power supply.

***Note** : Your console delivers +48 Volts between pins 2 and 3 of XLR sockets once the phantom power supply has been activated.*

14 - Headphone output:
Allows you to connect monitoring headphones.

15 - Control Room outputs:
Balanced Jack TRS outputs. Signals sent to these inputs depend on the PFL switches. The sound levels of these outputs can be adjusted via the Control Room / Headphone knob.

16 - Record Out:
Unbalanced signal via RCA connectors. The pre-faded signal sent to this output comes from the Main bus. Connect here any line-level recorder.

17 - Tape IN/CD input:
Line level input via RCA chassis. Connect a DAT or CD player here.

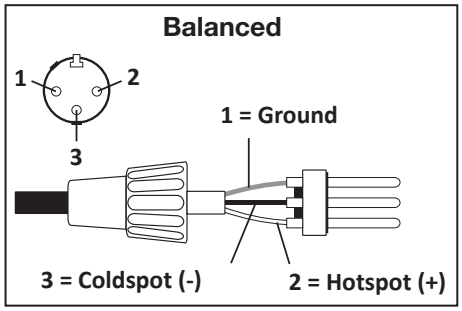
***Note** : This input volume can be adjusted via the Tape / CD / USB (13) knob of the Master area.*

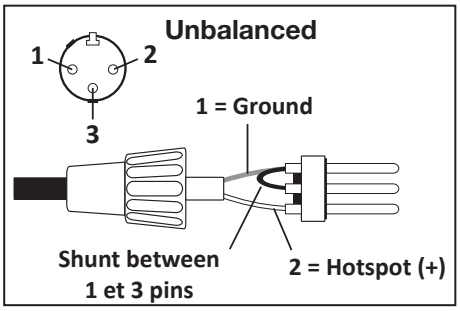
7 - More about connectors

7.1 - Microphone inputs

Microphone inputs feature XLR chassis able to receive both balanced and unbalanced signals.
These inputs are dedicated to low-level signals.
Connect here low impedance dynamic or condenser microphones.

These inputs deliver a +48V current required for condenser microphones once the phantom power supply has been activated.



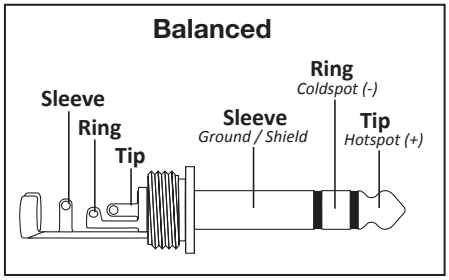


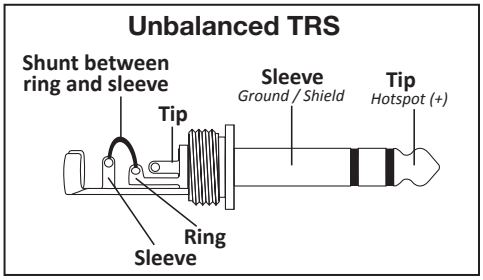
CAUTION: Do NOT use balanced sources once the phantom power supply has been activated as the voltage delivered via pins 2 and 3 may cause severe damages to your devices. If using balanced dynamic microphones, please make sure they are compatible with phantom power supplies.

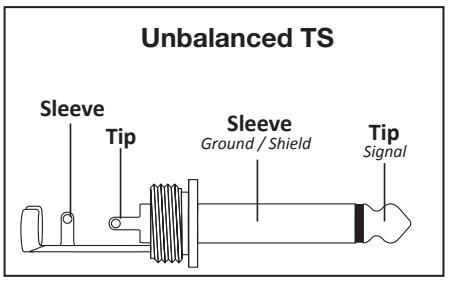
7.2 - Line-level inputs

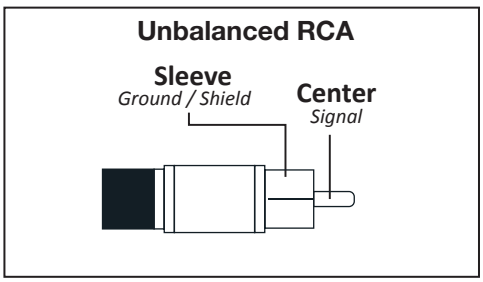
Mono line-level inputs feature Jack or RCA chassis onto which you can add balanced or unbalanced signals.
These inputs can be used to connect synthetisers, drum machines, direct boxes, etc.
When using unbalanced sources, the ring must be connected to the body.
RCA inputs can also be used to connect other sources: CD player, MP3 player, etc.

CAUTION: Please turn the gain settings of each affected channel to their minimum before connecting any line-level signal in order to prevent overloads and damages to your amplification system.





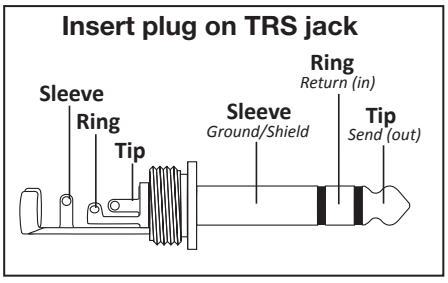


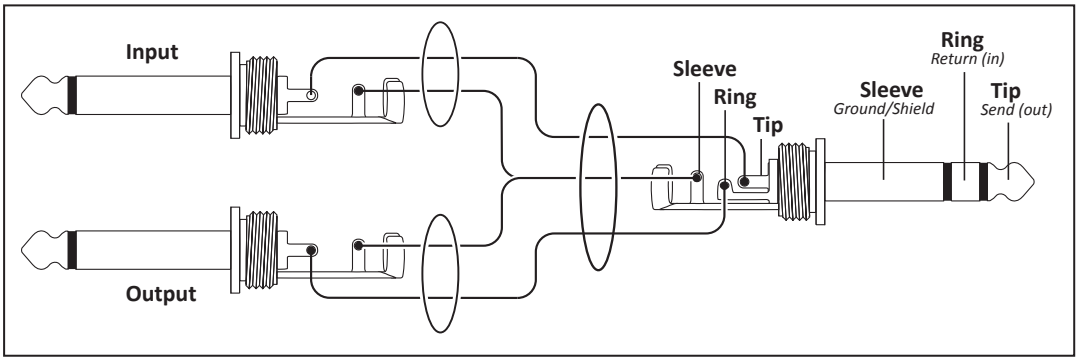


7.3 - Inserts

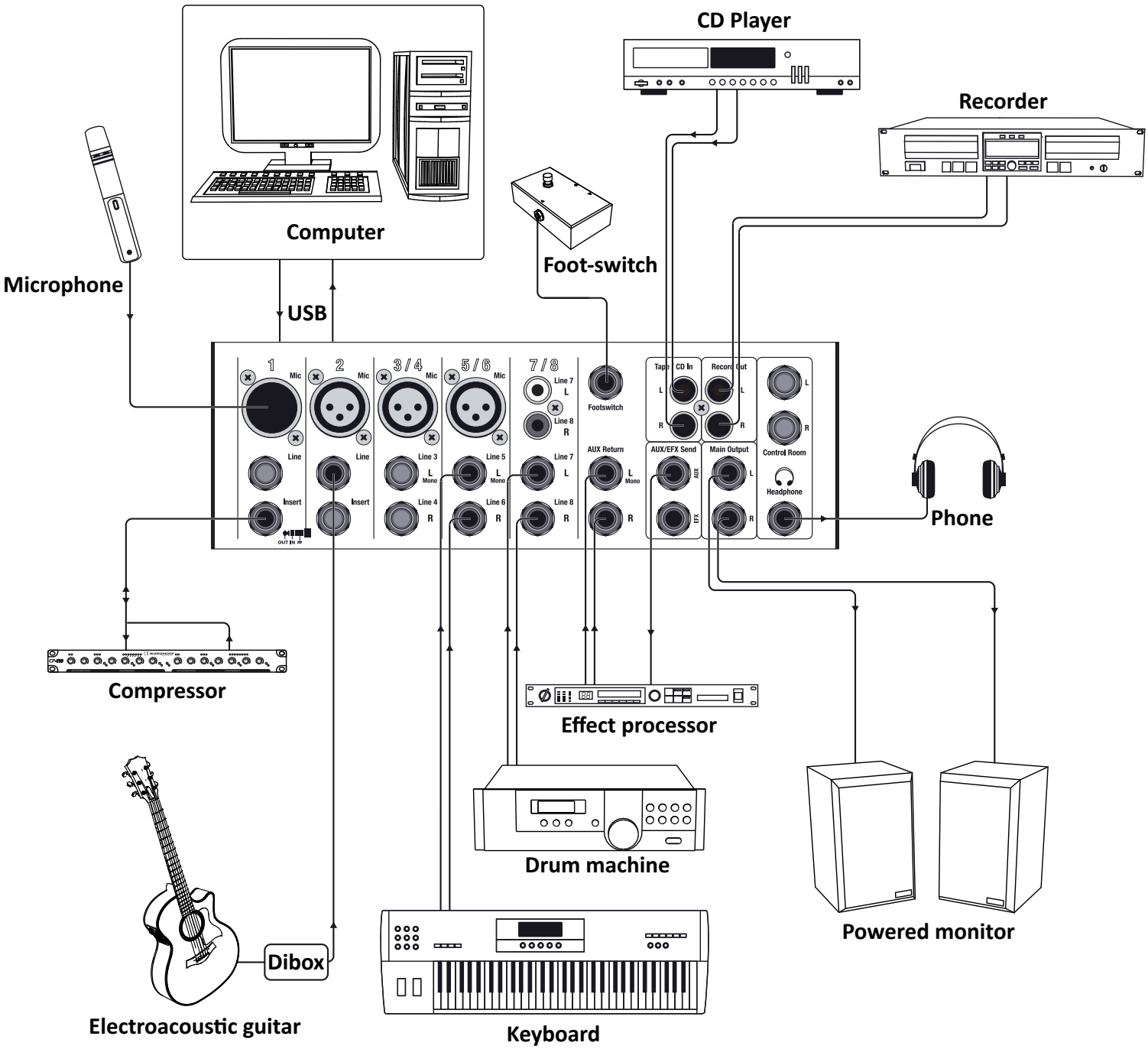
The unbalanced insert point allows you to insert limiters, compressors, special equalizers or any other processors on the signal path. The insert (Stereo Jack 6.35 mm) features a closed contact. When inserting a Jack plug into this connector, the signal path will be cut. The channel signal is available via the TIP, while the signal feedback is available via the RING.
The mass is transmitted via the body.
The outgoing signals can be used as direct pre-fade and pre-equalizer outputs (the tip and the ring will then be short-circuited to prevent any signal path interruption).

You will be required to use Y-cables (as described below) if using devices with separated incoming and outgoing signals.

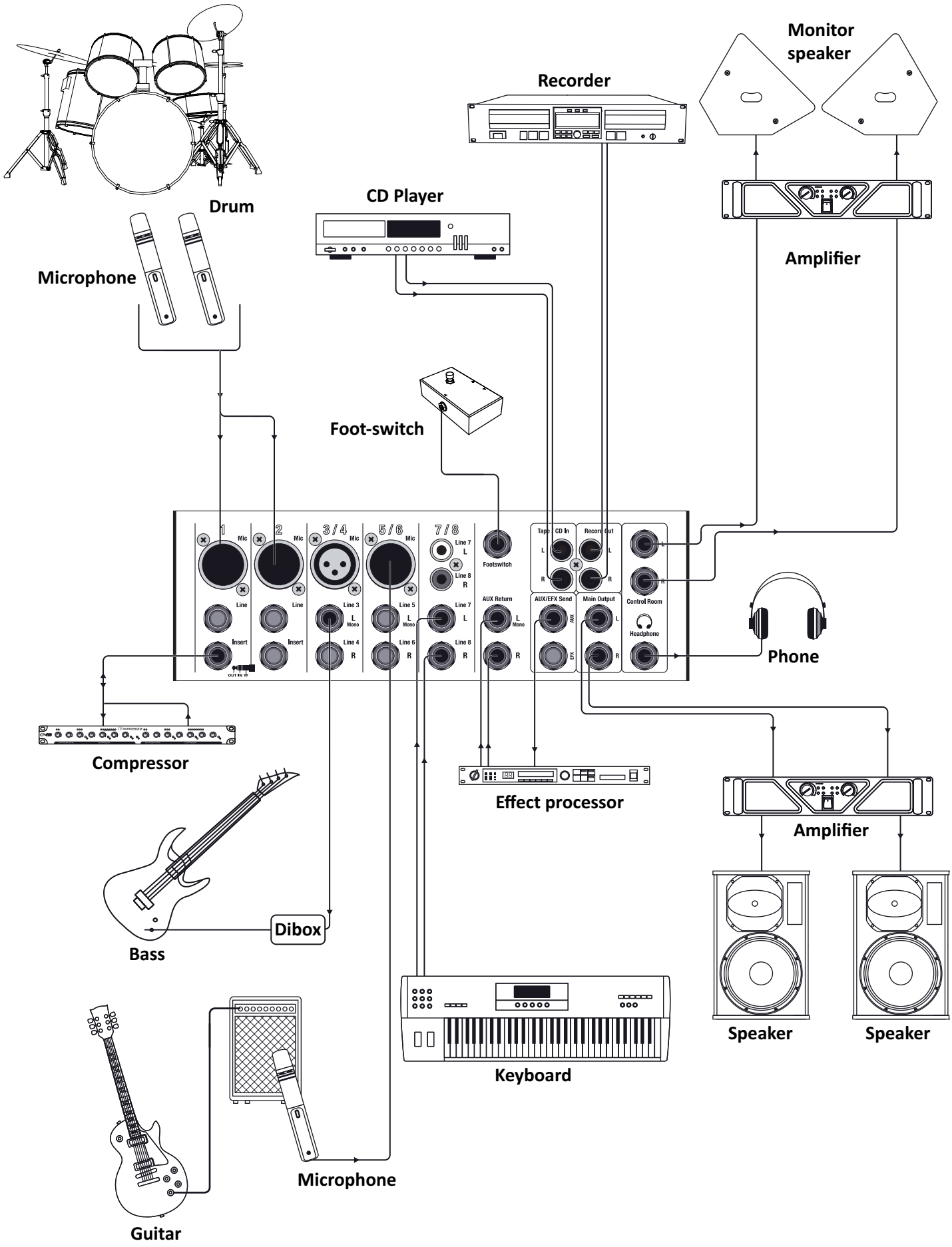




8 - Circuit principle: home studio



9 - Circuit principle: live installation



10 - Technical specifications

0dB = 0,775mV / 0dBV = 1Vrms

Max. output levels	+20dB (Main L/R) +20dB (AUX/EFX Send, Control Room) +20dB (Insert) More than 100 mW (Headphone) @ 33 Ω	
T.H.D	Lower than 0,1% @ +14dB 20Hz at 20 kHz (Main L/R, AUX/EFX Send, Control Room)	
Humming and noises (Rs = 150Ω)	-127dB : Equivalent input noise (EIN), -95dB residual noise (Main L/R, AUX/EFX Send, Control Room) - 88dB (Main L/R, , AUX/EFX Send, Control Room) *Fader Main L/R at 0 and all channel faders at their minimum	
Max. input voltage	66dB from Mic Input to Main L/R 60dB from Mic Input to AUX 66dB from Mic Input to EFX (REV) 76dB from Mic Input to Control Room L/R 58,2dB from Mic Input to Record Out 46dB from Line Input to Main L/R	46dB from Line Input to AUX 46dB from Line Input to EFX (REV) 56dB from Line Input to Control Room L/R 36dB from Line Input (stéréo) to Main L/R 6dB from AUX Return to Main L/R 16dB from Tape In to Main L/R
Crosstalk (at 1 KHz)	-70dB between input channels; -70dB between input/output channels	
Gain control for mono inputs	Range of 44dB (-50dB ~ -6dB) ; (-30dB ~ +14dB)	
Gain control for stereo inputs	Range of 40dB (-20dB ~ +20dB)	
Input channels equalization	HIGH : 12kHz ; Shelving MID : 2,5kHz ; Peaking LOW : 80Hz ; Shelving	
LED VU meter	2x10 LEDs segments for Main L/R	
Built-in DSP	10 Presets Optional footswitch to control remotely	
Channel indicators	Peak indicator for each pre-faded channel reaching -5dB below the clip limit	
Phantom power supply	+48V DC, activated via the Phantom switch in the Master area	
Supplied accessories	AC adapter: Ref. PA-M822 - 25W	
Power supply	230V AC - 50Hz	
Power consumption	25W max.	
Weight	2.4 Kg	

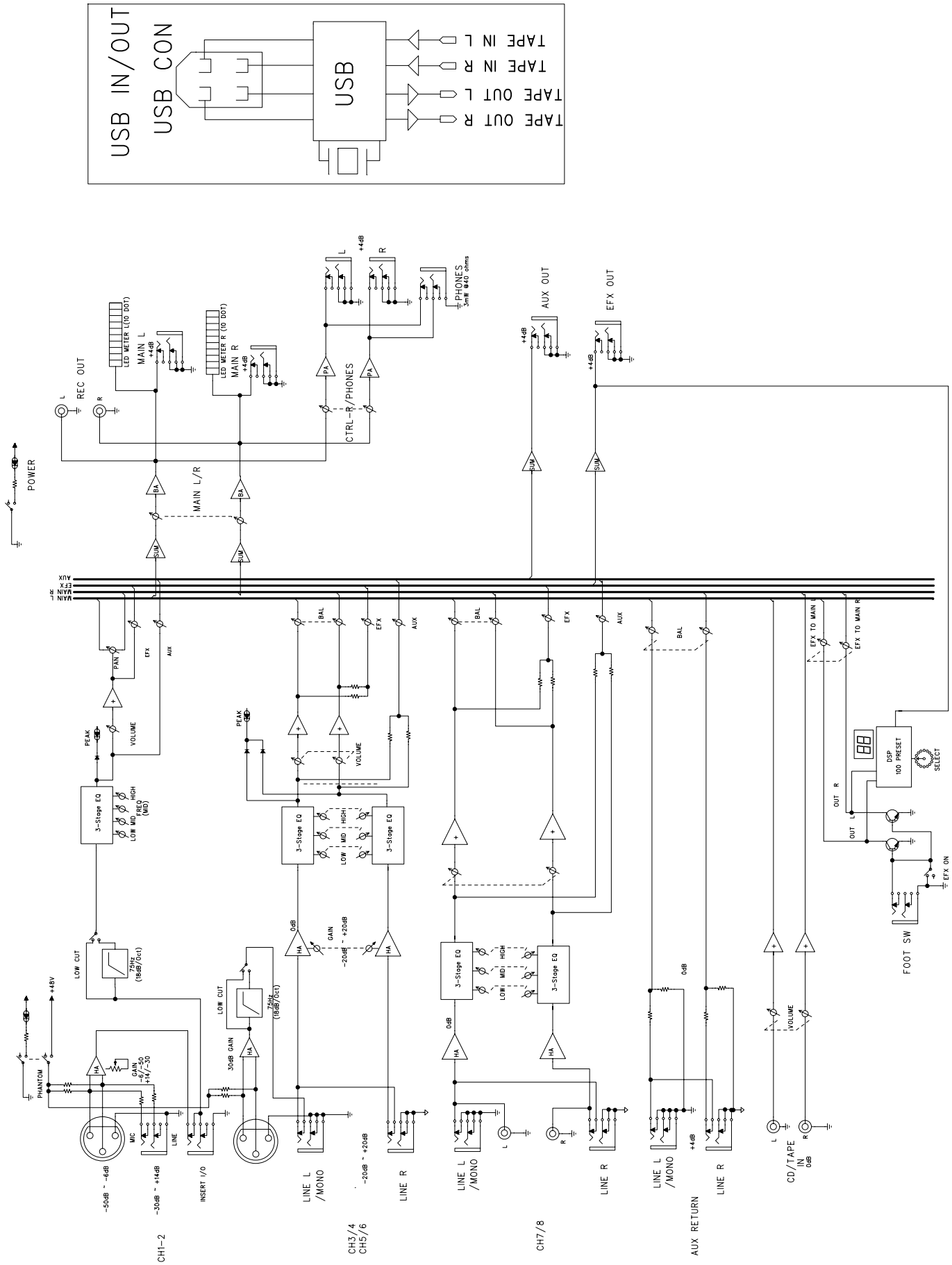
Input connectors: Types, Levels and Impedances

Input connector	Input impedance	Nominal impedance	Input level	Type of connector
Mic in mono areas	4kΩ	50 ~ 600Ω	-50dB	Balanced 3-pin XLR
Line	10kΩ	600Ω	-30dB	Balanced Jack (TRS)
Mic in stereo areas	3kΩ	600Ω	-44dB	Balanced 3-pin XLR
Stereo inputs	5kΩ	600Ω	-20dB	Unbalanced Jack (TS)
Insert in mono area	10kΩ	600Ω	0dB	Balanced Jack (TRS)
Tape In	10kΩ	600Ω	-10dBV	RCA socket

Output connectors: Types, Levels and Impedances

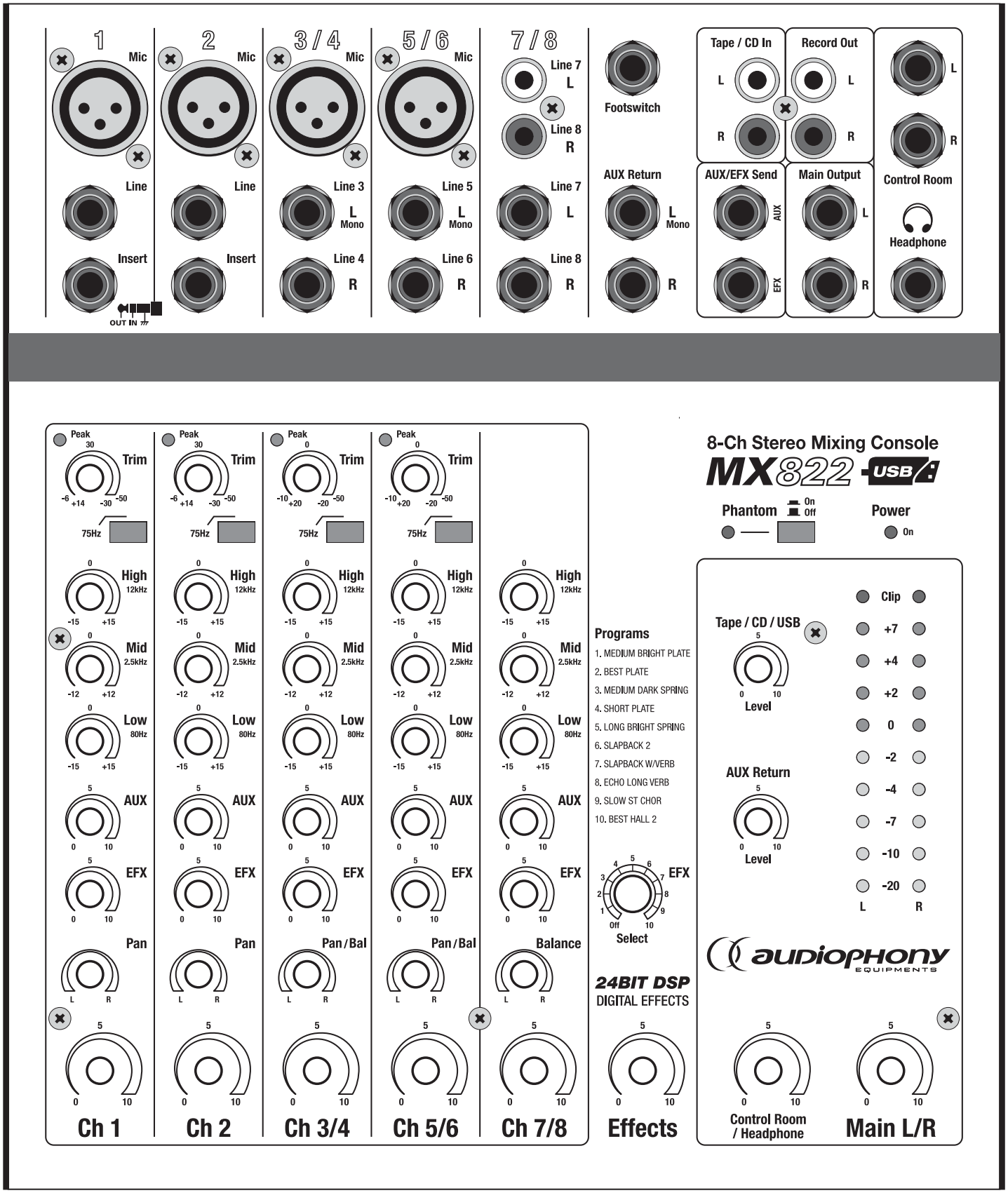
Output connector	Output impedance	Nominal impedance	Output level	Type of connector
Main L/R	240Ω	20kΩ	+4dB	Unbalanced Jack (TS)
Control Room	75Ω	10kΩ	+4dB	Unbalanced Jack (TS)
AUX/EFX Send	75Ω	600Ω	+4dB	Unbalanced Jack (TS)
Insert tranches mono	600Ω	10kΩ	0dB	Balanced Jack (TRS)
Record Out	600Ω	10kΩ	-10dBV	RCA socket
Phone Output	100Ω	33Ω	3mW	Stereo Jack

11 - Synoptic

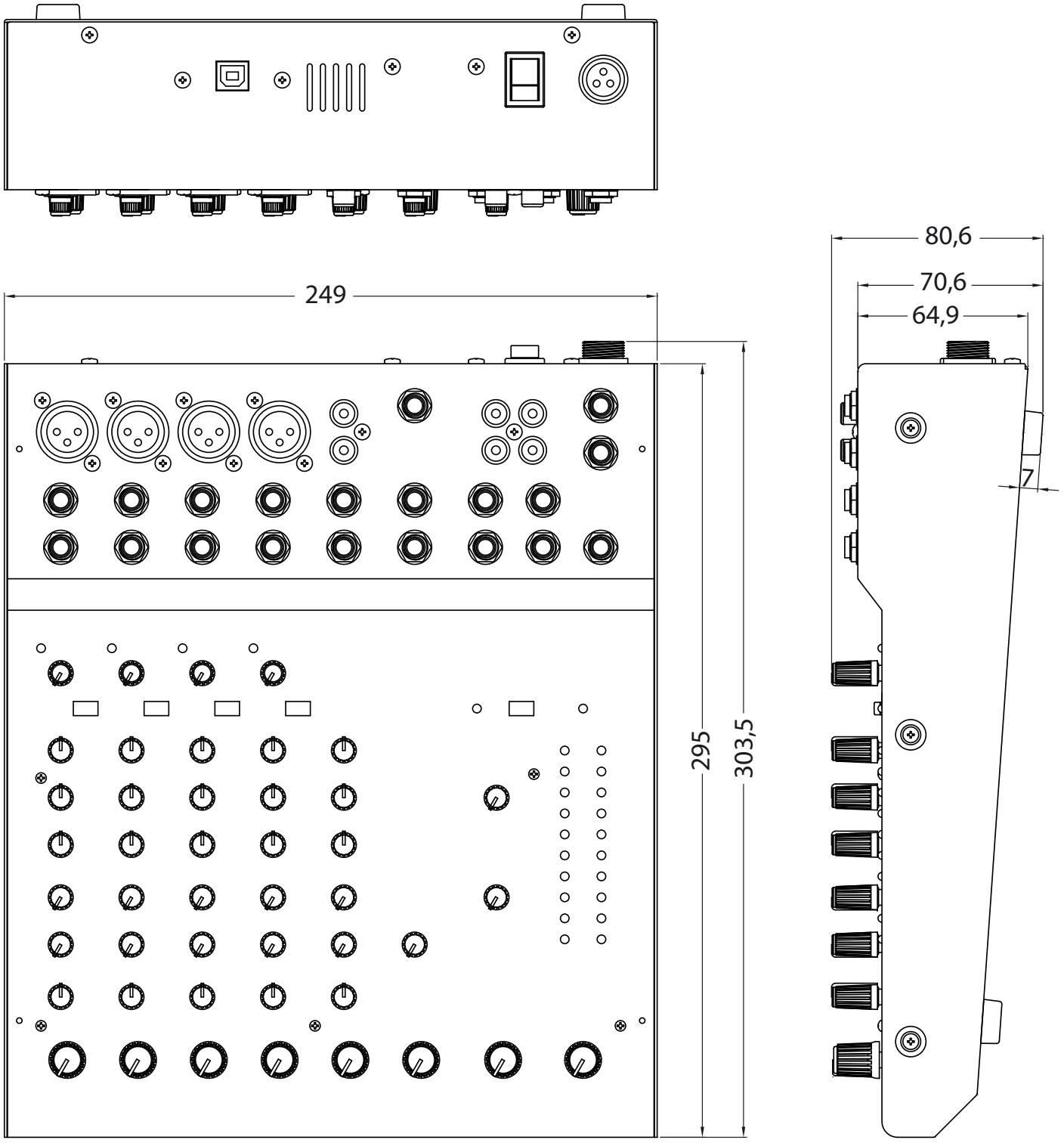

USB IN/OUT
USB CON
USB
TAPE IN L
TAPE IN R
TAPE OUT L
TAPE OUT R
POWER
REC OUT
LED METER L(10 DOT)
MAIN L
LED METER R (10 DOT)
MAIN R
PHONES
CTRL-R/PHONES
AUX OUT
EFX OUT
MAIN L/R
AUX
EFX
MAIN
DSP
100 PRESET
SELECT
FOOT SW
EFX ON
EFX TO MAIN L
EFX TO MAIN R
PEAK
VOLUME
PAN
BAL
3-Stage EQ
LOW CUT
75Hz (18dB/Oct)
GAIN
PHANTOM
+48V
MIC
LINE
INSERT I/O
30dB GAIN
CH1-2
CH3/4
CH5/6
CH7/8
AUX RETURN
LINE L /MONO
LINE R
CD/TAPE IN

12 - Configuration sheets

Please make several copies of this page and keep them to write down your configurations and settings.



13 - Dimensions



14 - Notes

Because AUDIOPHONY® takes the utmost care in its products to make sure you only get the best possible quality, our products are subjects to modifications without prior notice. That is why technical specifications and the products physical configuration might differ from the illustrations.
Make sure you get the latest news and updates about the AUDIOPHONY® products on www.audiophony.com
AUDIOPHONY® is a trademark of HITMUSIC S.A. - Zone Cahors sud - 46230 FONTANES - FRANCE