



## ***USER'S MANUAL***

# **LYNX-MIX 124UM**

**12-CH COMPACT INTEGRATED LIVE SOUND  
MIXER WITH DIGITAL EFFECTS**




[www.altoproaudio.com](http://www.altoproaudio.com)  
Version 1.0 JUL. 2008


***English***

# IMPORTANT SAFETY INSTRUCTION



**TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT. THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.**

 This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

 This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

⊕ Protective Ground Terminal

~ AC mains (Alternating Current)

⚡ Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

## CAUTION

Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.

2. Keep this Manual in a safe place.

3. Be aware of all warnings reported with this symbol.

4. Keep this Equipment away from water and moisture.

5. Clean it only with dry cloth. Do not use solvent or other chemicals.

6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufacturer's instructions.

7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electrician. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do not place heavy objects on the power cord. This could cause electric shock or fire.

8. Unplug this equipment when unused for long periods of time or during a storm.

9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.

10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

## WARNING

**To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.**



**Dispose of this product should not be placed in municipal waste and should be separate collection.**

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer; or sold with the Equipment. When a cart is used, use caution when moving the cart / equipment combination to avoid possible injury from tip-over.



12. Permanent hearing loss may be caused by exposure to \ extremely high noise levels. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level. These are shown in the following chart:

### HOURS X DAY SPL EXAMPLE

8	90	Small gig
6	92	train
4	95	Subway train
3	97	High level desktop monitors
2	100	Classic music concert
1,5	102	
1	105	
0,5	110	
0,25 or less	115	Rock concert

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

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## 1. INTRODUCTION

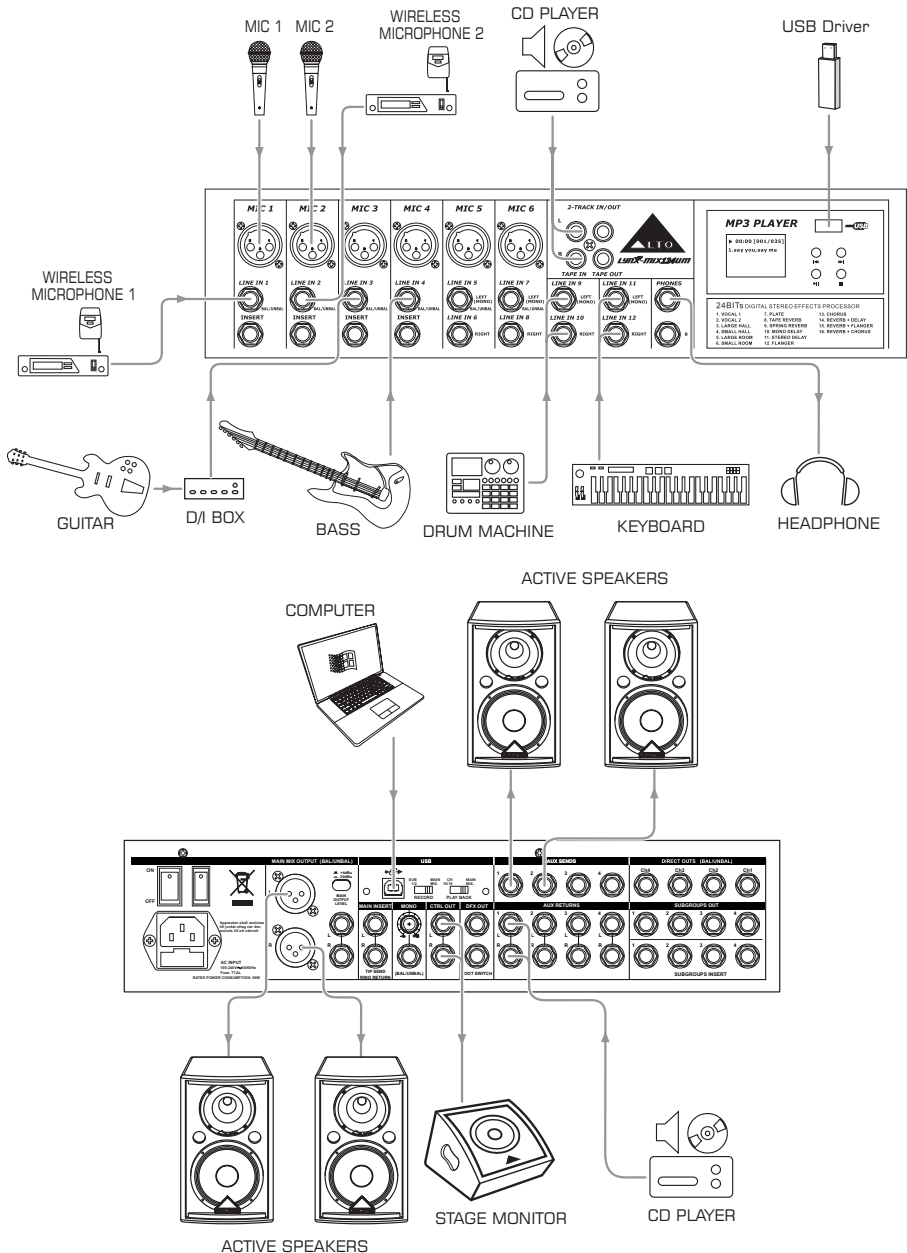
Thank you for purchasing the ▲LTO LYNX-MIX 124UM compact integrated mixers, which available for 12 channels. Your LYNX-MIX 124UM is a remarkable compact mixer that doesn't find many equals in the market today. With 6 MIC and 4 Stereo Line-level inputs for serious live performances. Your LYNX-MIX 124UM includes a 24-bit digital multi-effect with 16 Factory Presets and 16 variations for every preset, for a total of 256 different digital effects. There is a 3-band EQ on mono input channels, 4-band EQ on stereo input channels. Also it has MP3 playing function, it can connect with the external USB interface, insert the MP3 & WAV file of the MP3 USB disk to play, and support the root directory reading and storing functions. Use it for large GIGs, and for fixed PA installation. Enjoy your LYNX-MIX 124UM and make sure to read this Manual carefully before operation!

## 2. FEATURES

- ▲ 6 MIC inputs with gold plated XLR and balanced TRS jack
- ▲ 4 Stereo input channels with balanced TRS jacks
- ▲ Ultra-low noise discrete MIC preamps with +48 V Phantom Power
- ▲ SUB1-2, SUB3-4 & MAIN L-R signal assignment switches
- ▲ 4 AUX Sends per channel: 2 PRE/POST faders switchable for monitoring application effects & sound processor input; 2 POST faders as external send or for internal digital DFX
- ▲ 3-band EQ with sweepable MID on mono inputs; 4-band EQ on stereo inputs
- ▲ Channel Inserts and Direct Outputs on each mono channel plus Main Insert for flexible connection of outboard equipment
- ▲ 24-bit internal DSP with 256 effects, 16 presets by 16 variations with DSP Mute switch and Peak LED
- ▲ 2-TRACK IN assignable to Main Mix, Control Room/Headphone outputs
- ▲ With Mp3 playing function



# LARGE GIG HOOKUP DIAGRAM



### 3. QUICK START

This is the fastest way to get something out from your LYNX-MIX 124UM, if you have a keyboard and a microphone.

- a. Plug the microphone into Channel 1 MIC IN.
- b. Turn down AUX and LEVEL controls on the input channel.
- c. Put the EQ controls on center position.
- d. Turn on your LYNX-MIX 124UM.
- e. Sing or speak into the microphone with normal volume and adjust the channel LEVEL control of half.
- f. If you like, you can adjust the EQ at this stage.
- g. The LED on the Master LED meter should flash only occasionally, otherwise you will hear distortion. If this LED is not active and you still hear distortion, please turn down a little the input LEVEL control or reduce the output level of your source instrument.
- h. Connect your stereo keyboard into one of the stereo line inputs channel of your LYNX-MIX 124UM mixer.

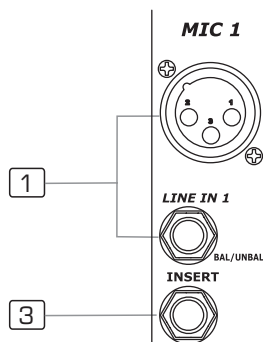
Here you are. It is your first GIG with your LYNX-MIX 124UM.



## 4. CONTROL ELEMENTS

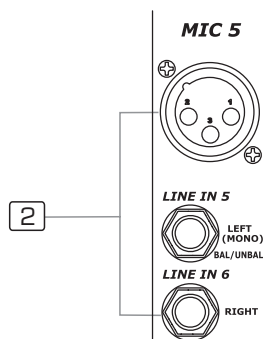
### 1 MONO MIC/LINE Channels

Your LYNX-MIX 124UM is equipped with 4 low-noise microphone preamplifier with optional phantom power, 50 dB of Gain and over 115 dB of S/N ratio. You can connect almost any type of microphone. Dynamic microphones do not need phantom power. Use phantom power only with condenser microphones but make sure that the phantom power button is disengaged before connecting the microphone. Phantom power will not damage your dynamic microphones, so make sure to read the MIC instructions manual before engaging phantom power. Use switch (48) to activate/deactivate phantom power. These channels are also equipped with 1/4" TRS balanced/unbalanced LINE-IN plugs to connect line-level instruments such as keyboards, drum machines and effect devices.



### 2 STEREO INPUTS

These are channels 5 through 12. They are organised in stereo pair and provided with XLR sockets (channels 5/6) and 1/4" TRS phone jacks. If you connect only the left jack, the input will operate in mono mode, that is the mono signal will appear on both input channels. You can use these inputs with a stereo keyboard, drum machine, etc.



### 3 MONO Channel INSERT

This is where you connect external sound processors such as compressor-limiter, equalizers, etc.. The insert point is available on the first 4 mono MIC channels only.

### 4 TRIM

The TRIM control is applied in the mono MIC and stereo input channels. It provides with 2 different indications: One is for the MIC and the other for LINE levels. When you use a microphone, you shall read the MIC ring (0~50 for mono MIC input, 0~40 for stereo channels); when you use a line level instrument, you shall read the LINE ring (+15~-35 dB for mono MIC input, +20~-20 dB for stereo channels). For optimum operation, you shall set this control in a way that the PEAK LED (17) blinks only occasionally in order to avoid distortion on the input channel.



## 4. CONTROL ELEMENTS

### 5 LINE GAIN

When you use a line level instrument, you shall read the ring (-20~+20 dB). For optimum operation, you shall set this control in a way that the PEAK LED (17) blinks only occasionally in order to avoid distortion on the input channel.

### 6 LEVEL SET LED

This LED will help you to detect the input level immediately. In this case, the research of the fault will become much faster!

### 7 LOW-CUT Button

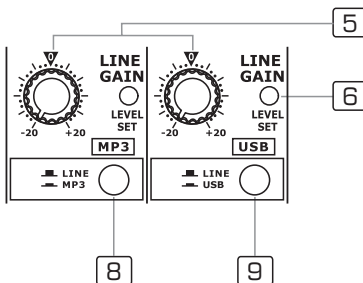
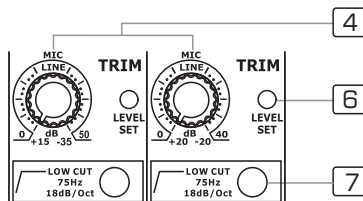
By pressing this button, you will activate a 75 Hz low frequency filter with a slope of 18 dB per octave. You can use this facility to reduce the hum noise infected by the mains power supply, or the stage rumble while using a microphone.

### 8 LINE/MP3 Button

By pressing this button, it will switch to the MP3 mode, then the Mp3 signal can be sent to this channel or the Main Mix channel; by releasing this button, the LINE IN inputs signal will send to the line input channels.

### 9 LINE/USB Button

By pressing this button, it will switch to the USB mode, then the USB signal can be sent to this channel or the Main Mix channel; by releasing this button, the LINE IN inputs signal will send to the line input channels.



## EQUALISER

There are 3-band EQ with sweepable MID on all mono input channel 1-4: HI, MID and LOW band. There are 4-band fixed frequency EQ on the stereo channel 5-12: HI, HI-MID, MID-LOW and LOW band. All bands provide up to 15 dB of boost or cut.

### 10 HI

If you turn this control up, you will boost all the frequencies above 12 kHz (shelving filter). You will add transparency to vocals and guitar and also make cymbals crispier. Turn the control down to cut all frequencies above 12 kHz. In such way, you can reduce sibilances of human voice or reduce the hiss of a Tape player.



## 4. CONTROL ELEMENTS

### 11 MID

This is a peaking filter and it will boost/cut frequencies from 100 Hz to 8 kHz depending on the position of the MID freq control. This control will affect especially upper male and lower female vocal ranges and also the harmonics of most musical instruments.

### 12 HI-MID

This control gives you up to 15 dB boost or cut at 3 kHz. It is useful for controlling voice. It can accurately polish your performance via adjusting this knob.

### 13 MID-LOW

This control gives you up to 15 dB boost or cut at 500 Hz.

### 14 LOW

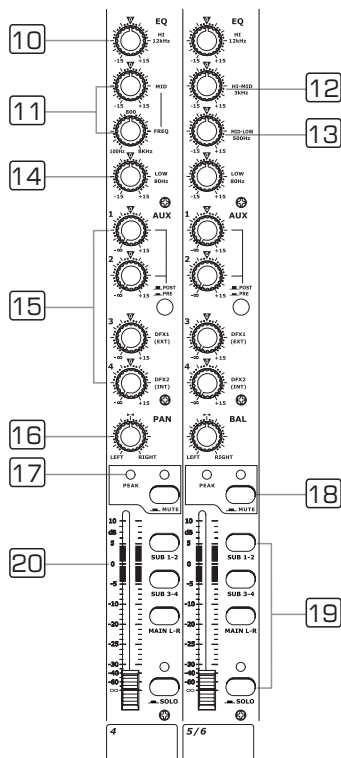
Turn this control up, all the frequencies below 80 Hz will be boosted. You will give more punch to bass drum and bass guitar and make the vocalist more "macho". Turn it down, the frequencies will be attenuated. In this way, you can avoid low-frequency vibrations and resonance thus preserving the life of your woofers.

### 15 AUX SENDS Level Control

These four controls are used to adjust the level of the respective signal sent to AUX bus, AUX1 and AUX2 can be switched to PRE/POST-FADER via the PRE/POST button, so, generally, they can be used for monitor application and effects & sound processors input. AUX3 and AUX4 are configured as POST-Faders. In this typical compact unit, excluding sending out the signal directly to the external effect or processor equipment, AUX SEND4 can also be assigned to the internal onboard effect module.

### 16 PAN/BAL Control

Abbreviation of PANORAMA control for mono channels, or the stereo channels, always says, BALANCE control. Keep this control in center position, then the signal will be positioned in the middle of stage.





## 4. CONTROL ELEMENTS

### 17 PEAK LED

Inside your LYNX-MIX 124UM mixer, the audio signal is monitored in several different stages and then sent to the PEAK LED. When the LED is red illuminated, it warns you that you are reaching signal saturation and possible distortion, then you should reduce the input level for avoiding distortion.

### 18 MUTE Button & LED

Each channel is equipped with a MUTE button. Pressing this button is equal to turning the fader down, which can mute the corresponding channel output except for the channel INSERT send and SOLO (in PFL mode). And the MUTE LED will illuminate.

### 19 ASSIGNMENT Controls

Each channel provides four push-buttons: SUB1-2, SUB3-4, MAIN L-R and SOLO. Pressing the SOLO button, the corresponding SOLO LED will illuminate and the SOLO signal will replace other signals sent to the Headphone/Control Room and Meters. Usually use the SOLO function in live work to preview channels before they are let into the mix. It is useful to set an instrument's input level and EQ, and you can also solo any channel that you want to. The SOLO switch never affects any mix other than the Control Room. The other three buttons can be considered as signal assignment switches. Pressing the SUB1-2 will assign the channel signal to Subgroup1/2, you can depend on the PAN switch to adjust the amount of channel signal sent to the SUB1 versus SUB2, when turns the PAN to completely left, then the signal can be only controlled by Subgroup1 and vice-versa. In the same way, pressing the SUB3-4 or MAIN L/R will assign the channel signal to Subgroup3/4 or MAIN MIX L/R, and will also be affected by PAN.

### 20 FADER

This fader will adjust the overall level of this channel and set the amount of signal sent to the main output.

### 21 Control Room Source

You can choose to monitor any combination of MAIN MIX, SUB1-2, SUB 3-4 and 2TK IN via these Matrix switches. Engaging these switches, the stereo signals will be delivered to the Phones, Control Room and Meters display.

※**NOTE:** When any SOLO switch was engaged, the SOLO signal will replace other signals, and also be sent to the Control Room, Phones and Meters.

### 22 PHONES/CTRL ROOM Controls

Rotate these knobs to adjust the stereo level of CTRL ROOM and PHONES outputs separately, which can be varied from  $-\infty$  to MAX.



## 4. CONTROL ELEMENTS

### 23 Master AUX SENDS Controls

These four controls are used to determine the master AUX SEND levels, which can be varied from  $-\infty$  to +15 dB. When the external effect units which has no input gain control were connected to mixer, you can get a further +15 dB gain available from these Aux Send outputs. As to the AUX4, it can also provide the lovable level adjustment for the internal effect signal.

### 24 SOLO Button

The function of these SOLO buttons are the same as the channel SOLO button, they can also be affected by the SOLO MODE switch. Press the Solo button, the corresponding AUX send will be routed to the Ctrl Room/Phones outputs and Meters display.

### 25 Master STEREO AUX RETURNS Controls

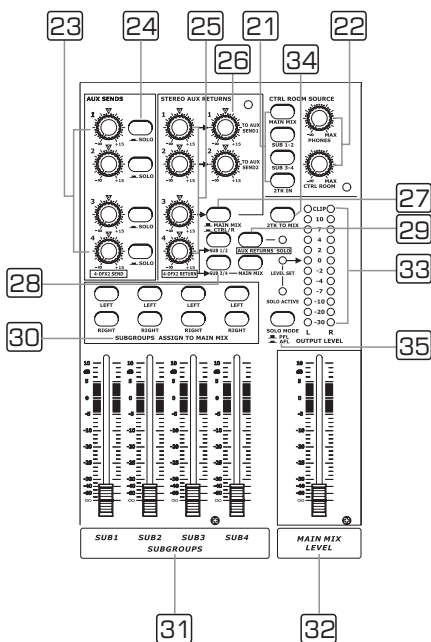
These four controls set the level of effects that received from the stereo AUX RETURN connectors, which can be varied from  $-\infty$  to +15 dB. They are used to provide the further gain for low level effects.

### 26 TO AUX SEND1/2

The both rotary knobs assign the AUX RETURN signals to their respective AUX SEND outputs: The "TO AUX SEND1" assign the signal from AUX RETURN1 to AUX SEND1 bus, and "TO AUX SEND2" assign the signal from AUX RETURN2 to AUX SEND2 bus. The adjustable range goes from  $-\infty$  to +15 dB.

### 27 MAIN MIX & CTRL/R Button

AUX RETURN3 is equipped with the Main Mix & Ctrl/R button. Release the button to send the stereo signal from AUX RETURN3 to MAIN MIX buses; Engage the button, then the stereo signal will be sent to CTRL/R output.





## 4. CONTROL ELEMENTS

### 28 SUB1-2/SUB3-4/MAIN MIX Buttons

These three buttons are configured for AUX RETURN4, they can be regarded as the signal assignment switches. When engaging the SUB1-2, the stereo signal from AUX RETURN4 will be assigned to Subgroup1/2; in the same way, SUB3-4 for Subgroup3/4, MAIN MIX for MAIN MIX buses.

### 29 AUX RETURNS SOLO Button

The function of AUX RETURN SOLO is like the channel SOLO button. Engaging it sends the signal from AUX RETURN (1-4) to the CTRL OUT, PHONES outputs and Meters display. It can also be affected by SOLO mode button, and the LED next to the button will illuminate.

### 30 SUBGROUPS ASSIGN TO MAIN MIX

Through these switches, you can operate the subgroup faders as a master control for assigning the subgroups to MAIN MIX. Engage the LEFT switch to send the corresponding subgroup signal to MAIN MIX L, and the RIGHT switch for MAIN MIX R. When engaging the both switches, the signal will be sent to L/R of MAIN MIX.

### 31 SUBGROUPS Fader

These faders are used to control the levels of the signal send to the SUBGROUPS OUT, the adjustable range goes from  $-\infty$  to +10 dB. Any channel that is assigned to the subgroups, not muted and not turned down will be assigned to the SUB OUTS.

### 32 MAIN MIX LEVEL Fader

This fader sets the amount of signal send either to the Main Mix Output or to the Tape Output.

### 33 LED Meter

The stereo 12-segment LED Meter will indicate the signal level send to the Ctrl Room and Phones outputs.

### 34 2TK TO MIX Button

Engaging this switch allows you to combine the 2-Track output with the Main Mix. In other words, feeds the 2-Track In signals into Main L/R output. after the Level control, otherwise, release the button will output the soloed signal before the Level control.

※**NOTE:** The SOLO function can never affect the mix at main recording output, and also can't be affected by channel's MUTE switch.



## 4. CONTROL ELEMENTS

### 35 SOLO MODE Button

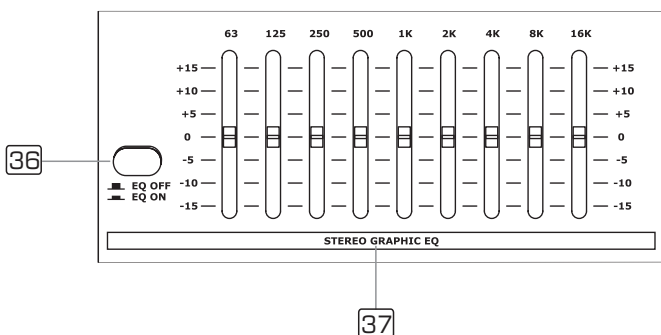
This button provides two modes: up for PFL (Pre-Fader-Listen) mode, down for AFL (After-Fader-Listen) mode. Engage the button, the soloed signal will output

### 36 EQ Switch

Engage this button to add the stereo graphic EQ to the main mix output circuit. It can be used to modify the frequency "contour" of a sound. If you release the button, the stereo graphic EQ will be bypassed.

### 37 STEREO GRAPHIC EQ

Each one of these faders will boost or attenuate (+/- 15 dB) the selected frequency at a preset bandwidth. When all the faders are in the center position, the output of the equalizer is flat response.



## DSP SECTION

There is a powerful 24-bit/256 preset multi-effects included in your LYNX-MIX 124UM. Effects include reverbs, chorus, flanger, delay and combinations of the above.

### 38 PRESETS

Adjust this knob to select the right effect you wish to perform. There are a total of 16 options for you: several kinds of reverb, mono and stereo delay, effects with modulation, and versatile two-effect combination.

### 39 VARIATIONS

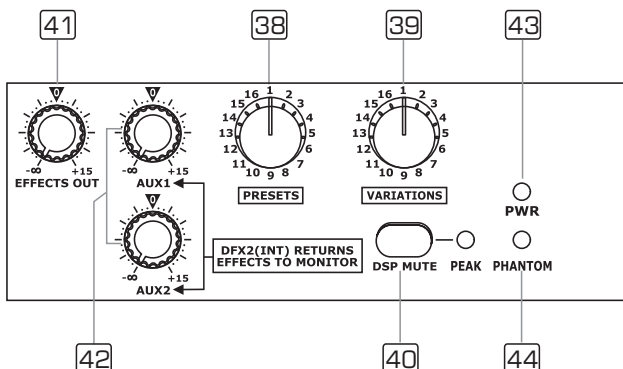
Since you have selected the preferable effect, the next step, please go with the fine consideration, there are also a total of 16 variations for each preset, and each variation may be managed by several different factors.



## 4. CONTROL ELEMENTS

### 40 DSP MUTE Switch & PEAK LED

This switch is used to activate/deactivate the effect facility. This LED lights up when the input signal is too strong. In case of the digital effect module being muted, this LED also lights up.



### 41 EFFECTS OUT Control

Rotate this knob to adjust the level of effect signal that intercepted from internal DSP processor and directly sent to DFX OUT, which can be varied from  $-\infty$  to +15 dB.

### 42 DFX2 (INT) RETURN EFFECTS TO MONITOR

The AUX1 and AUX2 controls are used to set the signal level from AUX RETURN4, which signal will be sent to AUX SEND1 and AUX SEND2. The adjustable range can be varied from  $-\infty$  to +15 dB.

### 43 POWER LED

The LED indicates when the power is ON.

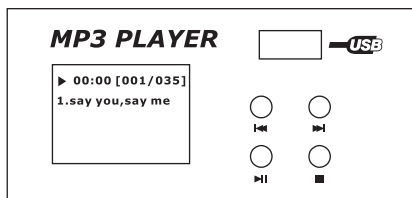
### 44 PHANTOM LED

This LED indicates when the phantom power is switched on.

### Mp3 Player

※Note:

For the detail information, please see the "The Operation Instructions for Mp3" section.





## 4. CONTROL ELEMENTS

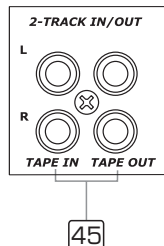
### 45 2-TRACK IN/OUT

#### - TAPE IN

Use the Tape input if you wish to listen to your mix from a Tape Recorder or DAT.

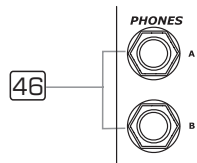
#### - TAPE OUT

These RCA jacks will route the main mix into a tape recorder.

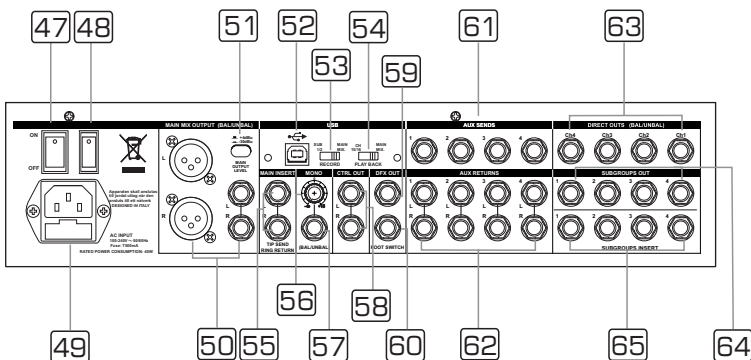


### 46 PHONES Jacks

These jacks will be used to send the signal to a pair of headphone or to powered studio monitors.



### Rear Panel



### 47 POWER Switch

This switch is used to turn the main power on and off.

### 48 +48 Volt Phantom Power

It is available only to the XLR MIC sockets. Never plug in a microphone when phantom power is already on. Before turning phantom power on, make sure that all faders are totally down. In this way, you will protect your stage monitors and main loudspeakers.



## 4. CONTROL ELEMENTS

### 49 AC Inlet with FUSE Holder

Use it to connect your LYNX-MIX 124UM mixer to the main AC with the supplied AC cord. Please check the voltage available in your country and how the voltage for your LYNX-MIX 124UM mixer is configured before attempting to connect your LYNX-MIX 124UM mixer to the main AC.

### 50 MAIN MIX OUTPUT

These stereo outputs are supplied with both the XLR and 1/4" phone jacks and it is controlled by the Main Mix Level.

### 51 MAIN OUTPUT LEVEL Button

This button sets the main mix output level to match the input of the device that you are ready to connect. Engage this button to reduce the output level from MAIN MIX OUTPUT by 30 dBu, it is used to match the semipro -30 dBu device, on the contrary, to match the professional +4 dBu device.

### 52 USB PORT

This USB port is used to connect the unit to PC with a transmission line. When it is in output mode, it can connect with the SUB1-2 or MAIN MIX output; in the input mode, it can connect with the CH11/12 or MAIN MIX output.

### 53 USB RECORD Switch

You can select SUB1/2 or MAIN MIX track to input the record signal to PC.

### 54 USB PLAYBACK Switch

You can select CH11/12 or MAIN MIX track to output the audio signal from PC.

### 55 MAIN INSERT

These two 1/4" phone jacks are stereo insert points and used to connect processors such as compressors, equalisers etc.. When insert a external processor into the jack, the Main stereo signal will be taken out after the EQ and returned into the MAIN MIX output before the MAIN MIX fader.

### 56 MONO Level Control

This knob sets the level of mono mix output signal, which can be varied from  $-\infty$  to +15 dB.

### 57 MONO OUTPUT Jack

This 1/4" phone jack is balanced/unbalanced mono mix output connector, it can be regarded as a sum output of the left and right of MAIN MIX.



## 4. CONTROL ELEMENTS

### 58 CTRL OUT Jacks

These 1/4" phone jacks will be used to send the Control Room signal to the studio monitor speakers or a second set of PA.

### 59 DFX OUT Jack

This 1/4" phone jack is used to output the effect signal that comes from internal DSP module and the signal level can be controlled by the EFFECTS OUT (41) control.

### 60 FOOTSWITCH Jack

This 1/4" phone jack can be used to connect an external footswitch to turn on/off the onboard effect module.

### 61 AUX SENDS Jacks

These 1/4" phone jacks are used to send out the signal from the AUX Bus to external devices such as effect units and/or stage monitors.

### 62 AUX RETURNS Jacks

Use these stereo 1/4" phone jacks to return the stereo signal of an effect unit to the Main Mix. Alternatively you can also use them as an extra auxiliary input via using the AUX RETURN level control as volume control. The signal will be sent directly to MAIN MIX control.

### 63 DIRECT OUTS

Each Mono MIC/LINE Channel (CH1-CH4) is equipped with the 1/4" phone jack for directing output. These jacks are used to send the signal from the channel path to external device for recording function etc..

### 64 SUBGROUPS OUT Jacks

These 1/4" phone jacks are used to connect the inputs of deck or secondary in a complicated PA live sound system. You will find it is the best tool when you operate the SUBGROUPS OUT.

### 65 SUBGROUPS INSERT

These 1/4" phone jacks are insert points. They are used to connect processors, such as compressor, limiter, EQ etc.. When insert external processor into these jacks, the subgroup stereo signal will be taken out, then returned to before subgroups fader. Of course, these used jacks must be stereo (Tip Send/Ring Return).



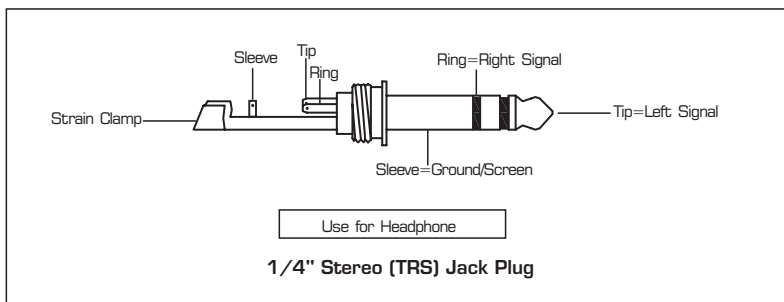
## 5. INSTALLATION AND CONNECTION

Ok, you have got to this point and you are now in the position to successfully operate your LYNX-MIX 124UM. However, we advise you to read the following section carefully to be the real master of your own mix. Not paying enough attention to the input signal level, the routing of the signal and the assignment of the signal will result in unwanted distortion, a corrupted signal or no sound at all. So you should follow this procedure for every single channel:

1. Turn down all Input and output gain controls.
2. Connect phantom powered microphones before switching on the +48 Volt phantom power switch.
3. Set the output level of your LYNX-MIX 124UM mixer or the connected power amplifier at no more than 75%.
4. Now, set the CONTROL ROOM/PHONES level at no more than 50%. In this way, you will be able to hear later what you are doing connecting a pair of headphones or a pair of powered studio monitor speakers.
5. Position EQ controls on middle position.
6. Position panoramic (PAN/BAL) control on center position.
7. With a pair of headphone or studio monitor speakers are connected, apply a Line Level input signal so that the PEAK LED does not light up.
8. Increase the input gain properly for maintaining the good headroom and ideal dynamic range.
9. Depending on the actual application, turn slowly the input and output level controls for obtaining the maximum gain before distortion.
10. Now repeat the same sequence for all input channels. The main LED meter could move up into the red section. In this case you can adjust the overall output level through the main mix control.

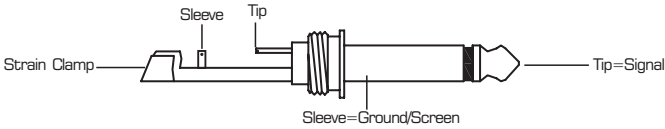
### Audio Connections

You can connect unbalanced equipment to balanced inputs and outputs. Simply follow these schematics.



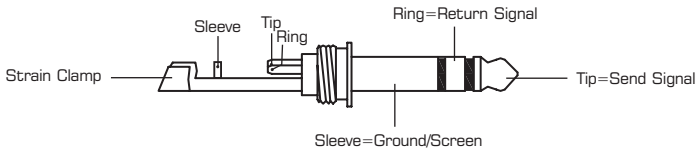


## 5. INSTALLATION AND CONNECTION



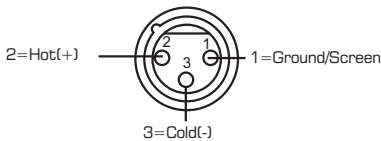
Use for Mono Line In, Mono 1/4" Jack Plugs

**1/4" Mono (TS) Jack Plug**



Use for Insert Points

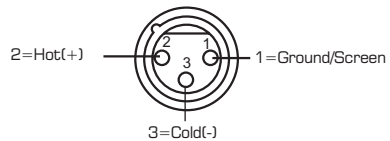
**1/4" Stereo (TRS) Jack Plug**



Use for Balanced Mic Inputs  
(For unbalanced use, connect pin 1 to 3)

**3-pin XLR Male Plug**

(seen from soldering side)



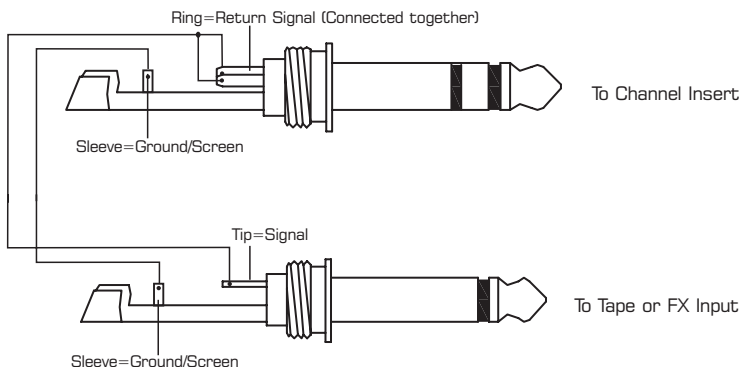
Use for Main output  
(For unbalanced use, leave pin3 unconnected)

**3-pin XLR Line Socket**

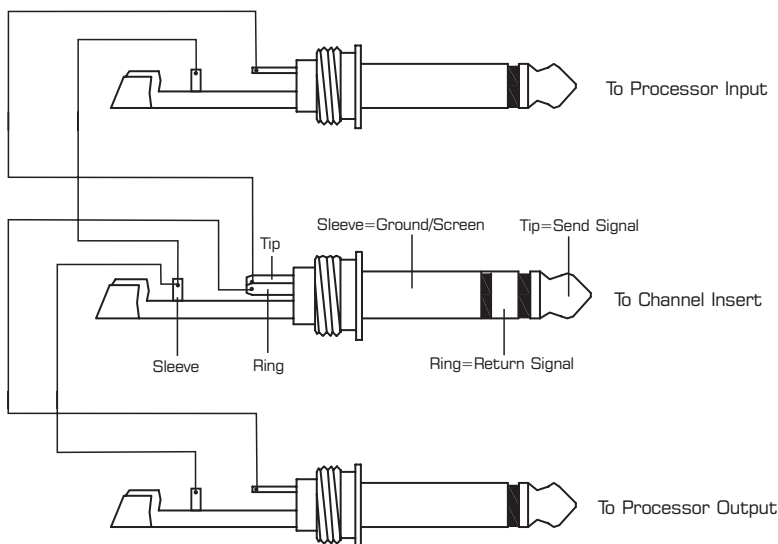
(seen from soldering side)



## 5. INSTALLATION AND CONNECTION

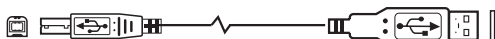


**'Tapped' Connection Direct Output Lead**  
(Enables the Insert to be used as a Direct Output while maintaining the channel signal flow)



**Y-Stereo lead for insert Connection**  
(To be used when the processor does not employ a single jack connection for the In/Out Connections)

### USB Connection





## 6. The Operation Instructions for Mp3

### 1. Note

- a. USB Memory Format: FAT16, FAT32
- b. Playing Type: Only support MP3 playing
- c. It can read 7 rank folders of your USB flasher at most

### 2. Operation Instruction

2.1 It will show the following interface when no USB KEY was inserted:



Fig 1

#### 2.2 Inserted the USB Key

The MP3 Player starts to search the MP3 songs of the USB, and display "Searching", it will display the following interface after making the search. Through the "Pre/Next" key, you can select one of these three menu options ("Playing, Program, Folder List"), and then press "Play" it will enter into the corresponding operation interface.



Fig 2

#### 2.3 The normal playing mode "Playing"

- a. In Fig 2, select the "Playing" to enter into the following interface. This interface will display all the folders' name of the MP3 file. Through the "Pre/Next" key to scan and then press "Play" key it will enter into the corresponding folder. Press "Stop" to return the Fig 2 interface.



Fig 3



## 6. The Operation Instructions for Mp3

- b. After entering into the folder it will display the following interface. This interface displays the entire MP3 file, and through "Pre/Next" key to scan, press "Play" key it will start to play the selected song, press again it will stop to playing. Press "Stop" key, if the current condition is in "Playing" the player will stop to playing, but if the current condition is in "Stopping" press "Stop" it will return to the Fig 3 interface.

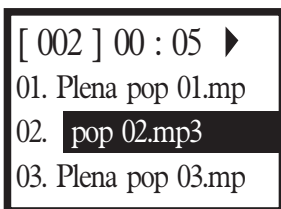


Fig 4

### 2.4 Program playing mode "Program"

- a. In Fig 2, select "Program" to enter into the following interface:

"Playing Set": Set the playing list

"Play List": Play list

Through "Pre/Next" key to select, press "Stop" key to return the Fig 2 interface.



Fig 5

- b. It will display Fig 3 showing interface after entering into the "Play List Set". Select the wanted folder it will display the following interface. This interface will display all the MP3 files, put the selected song into the playing list and marked symbol, press again to delete the song from the playing list, and cancel the marked symbol. Press "Stop" key to return Fig 2 interface, in playing list it can add 20 songs at most. It will display according to the adding order.



## 6. The Operation Instructions for Mp3

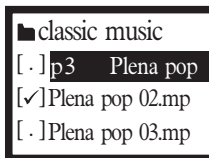


Fig 6

- c. It will display the following interface after enter into the "Play List" through "Pre/Next" key to scan, press "Play" key, it will start to play the selected song, press again to stop playing. Press "Stop" key, if the current condition is in "Playing" the player will stop to playing, but if the current condition is in "Stopping" press "Stop" it will return to the Fig 3 interface.

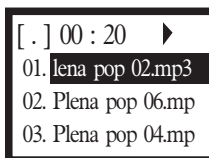


Fig 7

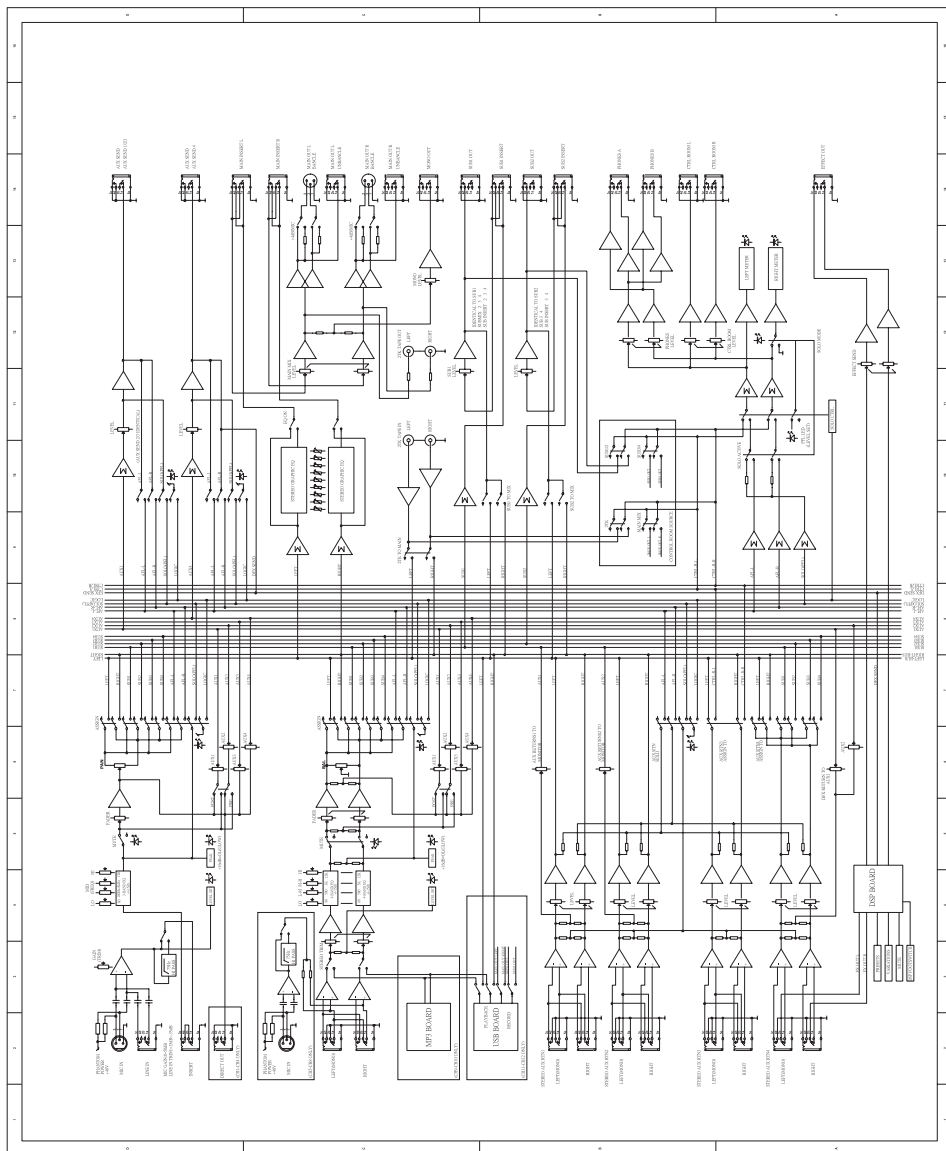
### 2.5 Folder List:

See the Fig 3, this interface displays name of the entire Mp3 files, Through "Pre/Next" key to scan, press "Playing" key it will enter into the corresponding folder, and press "Stop" key to return the Fig 5 interface.

## 7. PRESET LIST

NO.	Preset	Description	Controllable Parameter	
			Parameter	Variable range
1	VOCAL1	Simulate a room with small delay time	Decay time Pre-delay	0.8~1.1s 0~79ms
2	VOCAL2	Simulate a small space with slight decay time	Decay time Pre-delay	0.8~2.5s 0~79ms
3	LARGE HALL	Simulate a large acoustic space of the sound	Decay time Pre-delay	3.6~5.4s 23~55ms
4	SMALL HALL	Simulate a small acoustic space of the sound	Decay time Pre-delay	1.0~2.9s 20~45ms
5	LARGE ROOM	Simulate a studio room with many early reflections	Decay time Pre-delay	2.9~4.5s 23~55ms
6	SMALL ROOM	Simulate a bright studio room	Decay time Pre-delay	0.7~2.1s 20~45ms
7	PLATE	Simulate the transducers sound like classic bright vocal plate	Decay time Pre-delay	0.6~6.1s 10ms
8	TAPE REVERB	Simulate a record head and multiple playback heads at intervals along the tape	Decay time Pre-delay	1.3~5.4s 0~84ms
9	SPRING REVERB	Simulate the analog transducers' springs lightly stretched sound	Decay time Pre-delay	1.3~5.4s 0~35ms
10	MONO DELAY	Reproduce the sound input on the output after a lapse of time	Period	60~650ms
11	STEREO DELAY	Recreate the input sound on the stereo output with different time.	Period Feedback	210~400ms 37~73%
12	FLANGER	Simulate to play with another person carrying out same the notes on the same instrument	Rate	0.16~2.79Hz
13	CHORUS	Recreate the illusion of more than one instrument from a single instrument sound	Rate	0.5~5Hz
14	REV.+DELAY	Delay with room effect	Decay period Rev.decay time	211~375ms 1.0~2.9s
15	REV.+FLANGER	Stereo flanger and large room reverb	Flanger Rate Rev.decay time	0.16~2.52Hz 1.5~2.9s
16	REV.+CHORUS	Stereo chorus and large room reverb	Chorus rate Rev.decay time	0.5~4.74Hz 1.5~2.9s

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## 9. TECHNICAL SPECIFICATION

### Mono Input Channels

Microphone Input	Electronically balanced, discrete input configuration
Frequency Response	10 Hz to 55 kHz, +/-3 dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz
Gain Range	0 dB to 50 dB (MIC)
SNR (Signal to Noise Ratio)	115 dB
Line Input	Electronically balanced
Frequency Response	10 Hz to 55 kHz, +/-3 dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz
Sensitivity Range	+15 dBu to -35 dBu

### Stereo Input Channels

Line Input	Balanced/Unbalanced
Frequency Response	10 Hz to 55 kHz, +/-3 dB
Distortion (THD & N)	0.005% at +4 dBu, 1 kHz

### Impedances

Microphone Input	1.4 kOhm
Channel Insert Return	2.5 kOhm
All Other Inputs	10 kOhm or greater
Tape Out	1 kOhm
All Other Output	120 Ohm

### Equalization

Hi-shelving	+/-15 dB @12 kHz
Mid bell (Mono)	+/-15 dB -frequency range 100 Hz~8 kHz
Hi-Mid (Stereo)	+/-15 dB @ 3 kHz
Mid-Low (Stereo)	+/-15 dB @ 500 Hz
Low-shelving	+/-15 dB @ 80 Hz
Low Cut Filter	75 Hz, 18 dB/Oct.

### DSP Section

A/D & D/A Converters	24-Bit
DSP Resolution	24-Bit
Type of Effects	Hall, Room, Vocal & Plate REVERBS Mono & Stereo DELAY (Max DELAY TIME 650ms) Chorus, Flanger & Reverb MODULATIONS, REVERB+DELAY REVERB+CHORUS, REVERB+FLANGER Combinations
Presets	256
Controls	16-Position PRESET/VARIATION Selector DSP MUTE SWITCH with PEAK LED Indicator

### Main Mix Section

Noise (Bus Noise)	Fader 0 dB, Channels Muted: -100 dB <sub>r</sub> (ref.: +4 dBu) Fader 0 dB, all input channels assigned and set to UNITY Gain: -90 dB <sub>r</sub> (ref.: +4 dBu)
Max Output	+22 dBu Balanced XLR; +22 dBu Unbalanced, 1/4" jacks
AUX Returns Gain Range	-∞ to +15 dB
AUX Sends Max Out	+22 dBu

### Power Supply

Main Voltage	USA/Canada	100-120 VAC~60 Hz
	Europe	210-240 VAC~ 50 Hz
	U.K./Australia	240 VAC~ 50 Hz
Power Consumption	40 Watts	
Fuse	T500 mA	
Main Connection	Standard IEC Receptacle	

### Physical

Dimension (WxDxH)	415 mmx400 mmx38/115 mm (16.34"x15.75"x1.49"/4.53")
Net Weight	6.7 Kg (14.8 lb)

## 10. WARRANTY

### 1. WARRANTY REGISTRATION CARD

To obtain Warranty Service, the buyer should first fill out and return the enclosed Warranty Registration Card within 10 days of the Purchase Date.

All the information presented in this Warranty Registration Card gives the manufacturer a better understanding of the sales status, so as to provide a more effective and efficient after-sales warranty service. Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your warranty service.

### 2. RETURN NOTICE

- 2.1 In case of return for any warranty service, please make sure that the product is well packed in its original shipping carton, and it can protect your unit from any other extra damage.
- 2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine, and give detail information about your return address and contact telephone number.
- 2.3 A brief description of the defect will be appreciated.
- 2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

### 3. TERMS AND CONDITIONS

- 3.1 ▲LTO warrants that this product will be free from any defects in materials and/or workmanship for a period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.
- 3.2 The warranty service is only available to the original consumer, who purchased this product directly from the retail dealer, and it can not be transferred.
- 3.3 During the warranty service, ▲LTO may repair or replace this product at its own option at no charge to you for parts or for labor in accordance with the right side of this limited warranty.
- 3.4 This warranty does not apply to the damages to this product that occurred as the following conditions:
  - Instead of operating in accordance with the user's manual thoroughly, any abuse or misuse of this product.
  - Normal tear and wear.
  - The product has been altered or modified in any way.
  - Damage which may have been caused either directly or indirectly by another product / force / etc.
  - Abnormal service or repairing by anyone other than the qualified personnel or technician.

And in such cases, all the expenses will be charged to the buyer.

- 3.5 In no event shall ▲LTO be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.
- 3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws, you may also have other statutory rights that may vary from state to state.

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