

## **Users Manual**

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## Introduction

Thank you for choosing the LX4-2.1 Studiophile Series 2.1 / 5.1 studio nearfield monitor speakers. M-Audio is well known for digital audio interface technology, digital converters, audio preamps and mixers. Now, after extensive research and development, the Studiophile LX4-2.1 is born to change the concept of studio reference monitoring in 2.1 / 5.1 systems.

The LX4-2.1 was designed and tested by veteran audio engineers to meet your needs in a studio monitoring environment. It is focused on the functional goal of delivering pure, original sound without any additional coloration. The LX4-2.1 monitor is self-powered from amplifiers contained in the Subwoofer enclosure, which directly accepts a line level signal from a variety of sources.

The Subwoofer of LX4-2.1 provides extended low frequency down to 40Hz, making it possible for LX4 system to be comprised of much smaller Left, Right, and Surround satellite speakers, offering highly accurate frequency response from 40 to 20KHz and ultimate convenience for desktop music production.

LX4-2.1 is designed with option to add the LX4-3.0 package, upgrading the LX4-2.1 into a 5.1 system for music production or playback of 5.1 music and sound tracks. This feature makes the LX4 system extremely flexible, fitting into all modern digital music production and playback applications.

The Studiophile LX4 is designed to overcome the size limitations of conventional studio reference monitors within the digital audio environment. This compact system delivers a wide range frequency response by employing two extraordinary drivers and unique crossover and equalization technology licensed by M-Audio. Both drivers are magnetically shielded for desktop music production.

From pro engineers at commercial studios to home studio owners, the Studiophile LX4 sets a new affordable standard in studio monitoring.

## What's in the Box?

Your Studiophile LX4-2.1 box contains:

- Two LX4 Left and Right speakers
- One LX4 Subwoofer speaker
- Two Speaker wires
- One detachable AC power cord
- Actual test results of the LX4 system that you purchased
- This manual

## Studiophile LX4-2.1 Features

**1. Woofer** - the woofer unit is 4 inches in diameter with a magnetically shielded mineral-filled polypropylene cone, high-temperature voice coil and damped closed cell foam surround. It is designed to deliver balanced mid- and low- frequency response. Polypropylene is used to react against the input signals accurately, and to deliver even minimal input precisely while minimizing distortion.

**2. Tweeter** - by employing a specially developed 1-inch mylar dome with magnetic shielding, the tweeter can deliver distortion-free original sound and offer extremely natural response. It minimizes reaction time by using a uniquely shaped mylar dome for excellent delivery, and also minimizes resonance by adapting a unique internal damping technology.

**3. Sub-Woofer** - the Sub-woofer unit is 8 inches in diameter with a specially developed curved profile pulp cone, high-temperature voice coil and damped closed cell foam surround. It is designed to deliver subwoofer sound pressure at very high efficiency with extremely low distortion.

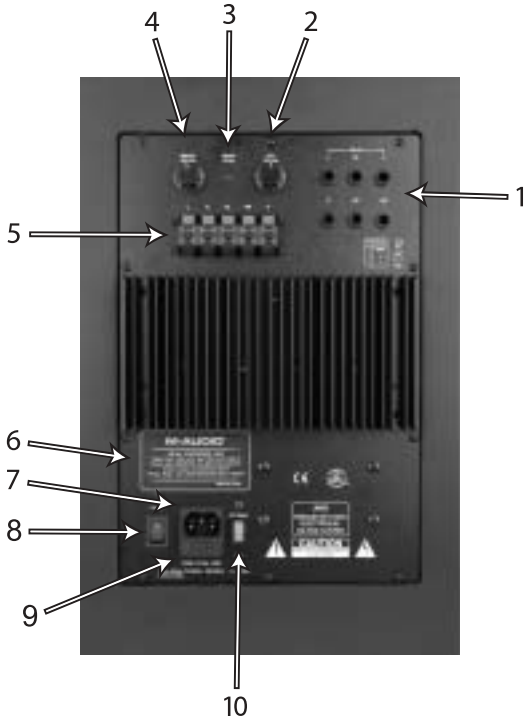
**4. Enclosure** - just as other components do, the LX4's enclosure has an important role. In order to provide more stable performance, the LX4's enclosure employs a special high-density MDF and unique interior reinforcement designed to absorb vibration and impact generated under extreme conditions.

**5. Network & Power Amplifiers** - the active equalization and crossover networks, as well as the power amplifiers for the LX4-2.1 are specially designed for the specific woofer, tweeter and sub-woofer chosen. The network properly distributes low, mid, and high frequencies to the components in order to reduce distortion and loss of signal, thereby achieving a naturally balanced sound.

In order to generate powerful, ultra-crisp sound, there are six separate power amplifiers inside the LX4-2.1 Subwoofer module. These drive the Sub-Woofer, plus Left, Right, and Surround speakers separately, in a high-end multiple-amplifier structure. The power delivered to the sub-woofer driver is 60W, while 27W is delivered to the Left and Right Speakers, and to each Surround speaker, when LX4-3.0 is installed (see the next feature).

**6. Expandable System** - LX4-2.1 is designed with the option to add the LX4-3.0 package, and upgrade the LX4 into a 5.1 system for music production of 5.1 music and sound tracks. The feature makes the LX4 system extremely flexible, able to fit all modern digital music production and playback applications.

# Front and Rear Panel Features



## Rear Panel

**I. TRS Inputs:** These jacks accept 1/4" connections with either balanced or unbalanced wiring. For balanced wiring, a three-conductor TRS plug is necessary. The input wiring of a TRS connector should be as follows:

- TRS TIP** - Signal positive (+)
- TRS RING** - Signal negative (-)
- TRS SLEEVE** - Signal ground (Shield)

Unbalanced 1/4" wiring can be done with either a two- or three-conductor (TS or TRS) plug. A two-conductor (TS) plug automatically grounds the signal negative input, whereas a three-conductor (TRS) plug, wired unbalanced, provides the option of leaving the negative input open or grounded. We recommend that you ground the unused negative input (this can be done by wiring the ring and sleeve of the TRS plug together).

There are 6 TRS Inputs, as follows:

- |                                     |   |
|-------------------------------------|---|
| <b>L</b> - Left Ch. Input           | <b>R</b> - Right Ch. Input              |
| <b>SL</b> - Surround Left Ch. Input | <b>SR</b> - Surround Right Ch. Input    |
| <b>C</b> - Center Ch. Input         | <b>LFE</b> - Low Frequency Effect Input |

2. **Sub Volume:** Use the Sub Volume to set the Subwoofer output sound pressure level relative to other output channels as required. Once the subwoofer to satellite balance is achieved, use the Master Volume to control overall listening levels.
3. **Power / Protect. LED:** When the power switch is switched to ON, the LED will glow “Green.” When the Protection circuitry of the power amplifiers has turned on because of any abnormal conditions, including overdriving the speakers into heavy clipping for too long, the LED will glow “Orange” and the output level will reduce by 12dB.
4. **Master Volume:** Use the Master Volume to set the output sound pressure of all channels from the LX4 system to proper level as required.
5. **Speaker Outputs:** (5) spring-type Speaker Output terminals for connecting (5) Channel Amplifier Outputs to all speaker channels, as follows:
  - L:** Use Speaker wire included in the LX4-2.1 package to connect the L channel amplifier output to the Left Speaker.
  - R:** Use Speaker wire included in the LX4-2.1 package to connect the R channel amplifier output to the Right Speaker.
  - SL:** Use Speaker wire included in the optional LX4-3.0 package to connect the Surround Left channel amplifier output to the Surround Left Speaker.
  - SR:** Use Speaker wire included in the optional LX4-3.0 package to connect the Surround Right channel amplifier output to the Surround Right Speaker.
  - C:** Use Speaker wire included in the optional LX4-3.0 package to connect the Center channel amplifier output to the Center Speaker.
6. **Product Label:** This label contains the model and serial number information.
7. **Power Receptacle:** Accepts a detachable 3-circuit line cord in order to apply AC power to the entire LX4 system.
8. **Power Switch:** This switch turns the LX4 system on and off. The “On” position is indicated by a white dot, while the “Off” position is indicated by the marking “I”
9. **Fuse Holder:** Holds the external main fuse.
10. **Voltage-select Switch:** Provides 2 selections, 115VAC and 230VAC. This switch should be set to match the “house supply” (receptacle) voltage of the country or location in which the speaker is used. The 115V setting is correct for the USA, while the 230V setting is correct for most of the UK and Europe.

## Front Panel

The front panel of Subwoofer Enclosure houses the Subwoofer driver and Sub-Frequency Port. The front panel of each Left & Right Speaker houses its Woofer and Tweeter drivers.

## Installation

For optimal performance of the LX4-2.1, please read the following thoroughly and carefully prior to installation.

### Precautions

**Handling:** Please do not touch the speaker cones. The LX4-2.1 set is packaged in the box tightly, so your attention is required when taking the monitors out of the box. To avoid possible damage to the speaker units, hold both sides of the monitor in order to pull it out of the box. The speaker cones should not be touched in order to avoid damage even after they are out of the box.

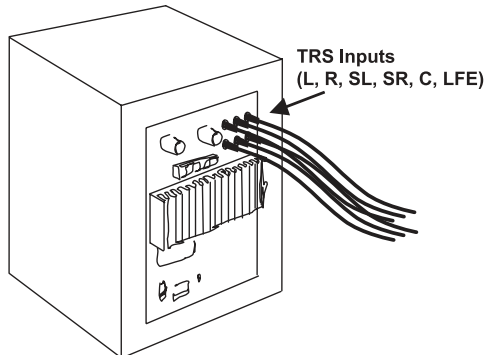
**Connections:** Connect the TRS balanced/unbalanced inputs of each LX4 subwoofer unit to the corresponding pre-amp, computer or game console outputs. We recommend that you use high-quality balanced or unbalanced cables for input connections. Also, turn off the power of the LX4 and turn the volume of the LX4 down to a minimum before making the necessary connections.

**Correct Power Operation:** Since the LX4-2.1/ 5.1 contains amplifiers, it must be connected to a power outlet using the detachable AC cable provided. Before connecting power, please make sure that the Voltage-Select Switch located on the speaker's rear panel is set to the appropriate position, as described in the rear-panel features list appearing earlier in this manual.

**WARNING! - Use of improper Voltage-Select Switch combinations may result in hazardous conditions and/or damage to speaker components not covered by speaker warranty.**

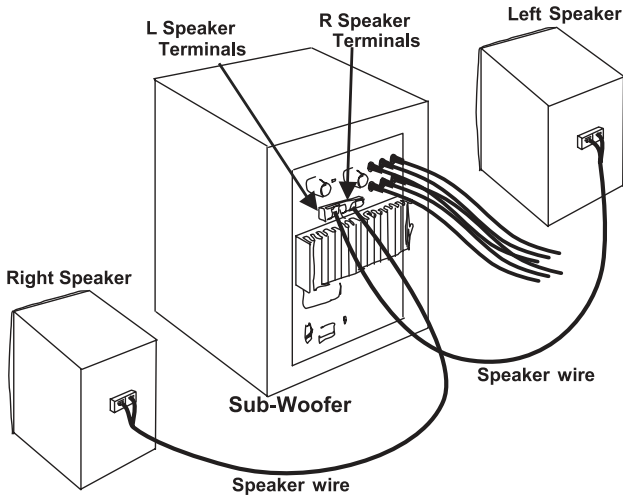
### TRS Balanced/Unbalanced Connections

Assure that the power switch of the LX4 is turned to off and that the Master Volume of the LX4 is turned down to a minimum. Connect the male end of a TRS balanced or TS unbalanced cable to the TRS inputs of the LX4 (refer to the following diagram for TRS connections).



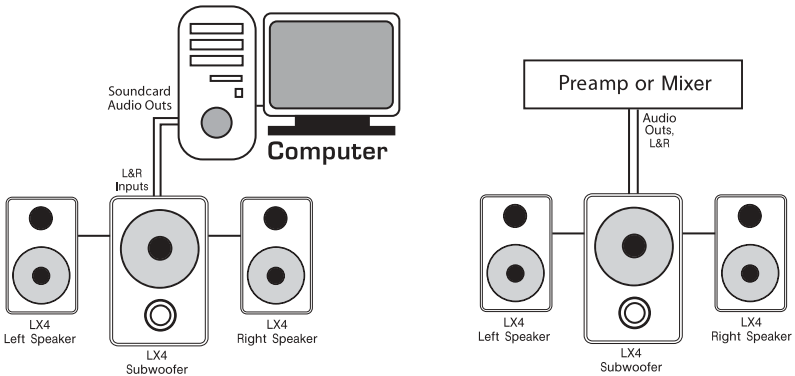
## Speaker Wire Connections

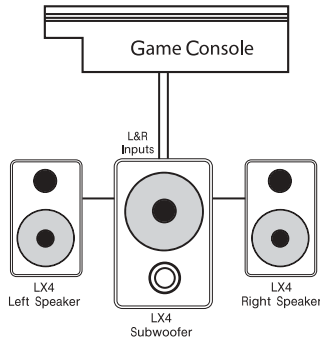
Use speaker wires included in LX5-2.1 package to connect the Left and Right Channel Speaker outputs to the Left and Right Speakers.



## Connecting to Preamp, Computer or Game Console Outputs

Before connecting, make sure the output device's power has been turned off. Plug the TRS balanced or TS unbalanced cable to the corresponding output connectors of a pre-amplifier, computer or game console.

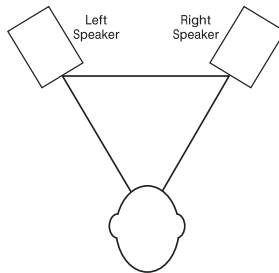




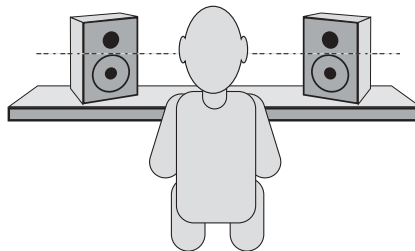
## Placing the LX4-2.1

Placing the speakers is one of the most important procedures. To monitor with the LX4s performing to their maximum capability, an appropriate listening environment and correct placement are required. Please refer to the following for correct LX4-2.1 placement.

1. As a subwoofer is non-directional, you can place the subwoofer box at any convenient location, and then use the speaker wires to hook the Left and Right Speakers to the L & R Speaker Output terminals on the rear panel of subwoofer enclosure.
2. The two Left and Right speaker units and the listener should basically align to form a regular, or equilateral triangle. Refer to the following diagram.

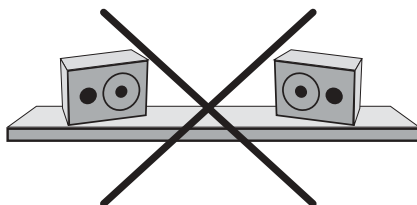


3. Position the monitors so that the tops of the woofers are level with your ears in a normal listening environment. Refer to the following diagram.





4. Place the LX4's Left and Right units vertically with the woofer on the bottom. Placing the LX4 monitors horizontally is not recommended.



**Note: DO NOT place any obstacles that may block the flow of air in front or between the LX4s monitors. Also remove reflective materials such as glass, mirrors or metal from the monitoring environment. PLACE THOSE MATERIALS AWAY FROM THE PATH OF THE SOUND FROM THE LX4s.**

## Technical Support & Contact Information

For additional help, contact M-Audio Technical Support by telephone (626-445-7556, 9-5 PST M-F), by fax (626-445-8407) or by e-mail (techsupt@m-audio.com).

If you have any questions, comments or suggestions about this or any M-Audio product, we invite you to contact us directly at:

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## **Studiophile LX4 2.1 Warranty Terms**

M-AUDIO warrants that this product is free of defects in materials and workmanship under normal use for a period of One (1) year from purchase date, so long as the product is: owned by the original purchaser; the original purchaser has proof of purchase from an authorized M-AUDIO dealer; and the purchaser has registered his/her ownership of the product by sending in the completed warranty card.

This warranty explicitly excludes any included external non-integrated power supplies and cables which may become defective as a result of normal wear and tear.

In the event that M-AUDIO receives written notice of defects in materials or workmanship from such an original purchaser, M-AUDIO will either replace the product, repair the product, or refund the purchase price at its option. In the event any repair is required, shipment to and from M-AUDIO and a nominal handling charge shall be borne by the purchaser. In the event that repair is required, a Return Authorization number must be obtained from M-AUDIO. After this number is obtained, the unit should be shipped back to M-AUDIO in a protective package with a description of the problem and the Return Authorization clearly written on the package.

In the event that M-AUDIO determines that the product requires repair because of user misuse or regular wear, it will assess a fair repair or replacement fee. The customer will have the option to pay this fee and have the unit repaired and returned, or not pay this fee and have the unit returned unrepaired. The remedy for breach of this limited warranty shall not include any other damages. M-AUDIO will not be liable for consequential, special, indirect, or similar damages or claims including loss of profit or any other commercial damage, even if its agents have been advised of the possibility of such damages, and in no event will M-AUDIO's liability for any damages to the purchaser or any other person exceed the price paid for the product, regardless of any form of the claim. M-AUDIO specifically disclaims all other warranties, expressed or implied. Specifically, M-AUDIO makes no warranty that the product is fit for any particular purpose.

This warranty shall be construed, interpreted, and governed by the laws of the state of California. If any provision of this warranty is found void, invalid or unenforceable, it will not affect the validity of the balance of the warranty, which shall remain valid and enforceable according to its terms. In the event any remedy hereunder is determined to have failed of its essential purpose, all limitations of liability and exclusion of damages set forth herein shall remain in full force and effect.

## Appendix A - Technical Specifications

**Type:** 3-way studio reference with subwoofer – 2.1 System, expandable to 5.1

**Subwoofer Driver:** 8 inch diameter, specially-developed curved-profile pulp cone, high-temperature voice coil and damped closed cell foam surround - designed for sub-frequency pressure levels with very high efficiency and extremely low distortion

**LF Driver:** 4-inch dia., magnetically-shielded with curved mineral-filled polypropylene cone, high temperature voice coil and damped closed cell foam surround

**HF Driver:** 1-inch dia., magnetically-shielded; specially-shaped mylar dome

**Frequency Response:** 40Hz - 20kHz

**Crossover Frequencies:** 2.9kHz and 140Hz

**RMS SPL @ 1 meter:** 105dB

**Subwoofer Amplifier Power:** 60W

**Sat Amplifier Power:** 27W (Five Sat Amplifiers)

**Dynamic Range:** >100dB

**S/N Ratio:** >100dB below full output, 20kHz bandwidth

**Input Connectors:** Six TRS balanced/unbalanced input connectors (L, R, SL, SR, C & LFE)

**Polarity:** Positive signal at + input produces outward low-frequency cone displacement

**Input Impedance:** 20k ohms balanced, 10k ohms unbalanced

**Input Sensitivity, Sat:** Input 100 mV pink-noise produces 90dBA output SPL @ 1meter w/ vol ctl at max setting

**Input Sensitivity, LFE:** input 50mV pink-noise produces 90dBA output SPL @ 1meter w/ vol cntrl at max setting

**Protection:** RF interference, output current limiting, over temperature, turn on/off transient, subsonic filter, external main fuse

**Indicator:** Green-Orange Power/Protection indicator (Back Panel). When the power switch is switched to ON, the LED will glow "Green". When the Protection circuitry of power amplifiers is turned on, the LED will glow "Orange." At the same time, the output level will reduce 12dB.

**Power Requirements:** Dual-voltage (selectable by rear-panel switch) for either 115V/~60Hz, 230V/~50Hz; powered via detachable 3-circuit line cord

**Cabinet:** vinyl-laminated MDF

**Dimensions, Subwoofer:** 15.75" (H) x 9.75" (W) x 12.25" (D)

**Dimensions, L & R:** 8.5" (H) x 5.75" (W) x 6.75" (D)

**Weight:** 14 kg / unit

\* All specifications subject to change without notice

# Appendix B - Block Diagram

