

LM4550 Audio Expansion Module User Guide

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Introduction

This Audio module features LM4550, an audio codec for PC systems which is fully compliant and performs the analog intensive functions of the AC'97 Rev 2.1 architecture. LM4550 uses 18-bit Sigma-Delta ADCs and DACs to produce high quality stereo audio output.

Applications

- Product Prototype Development
- Audio Record/Playback Systems
- Media players

Board features

- One 2×6 pin Expansion connector
- AC'97 Rev 2.1 Compliant
- 90 dB Dynamic Range
- Stereo Headphone Amp With Separate Gain Control
- Dimension: 50mm x 46mm

How to use the module

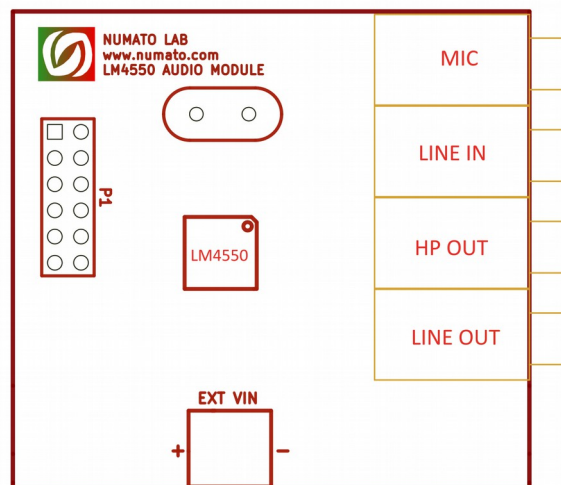
The following section describes how to use this module.

Components/Tools required

Along with the module, you may need the items in the list below for easy and fast installation.

1. Any FPGA board featuring a 2×6 pin Expansion connector (manual wiring required for boards that does not have 2×6 expansion connectors)
2. 5-7V DC Power supply.
3. Audio source and speakers/headphones.

Connection Diagram



This diagram should be used as a reference only. For detailed information, see the schematics at the end of this document. Details of individual connectors are as below.

To use this module, directly attach the 2×6 expansion connectors to the FPGA development board where corresponding female headers are available. If 2×6 female headers are not available, manually make the connections as per the connection details below.

Connection Details

Header P1

| Header Pin No. | Pin Details |
|----------------|-------------|
| 1 | SDO |
| 2 | - |
| 3 | BIT-CLK |
| 4 | SDI |
| 5 | SYNC |
| 6 | RESET |
| 7 | - |
| 8 | - |
| 9 | GND |
| 10 | GND |
| 11 | VCC3V3 |
| 12 | VCC3V3 |

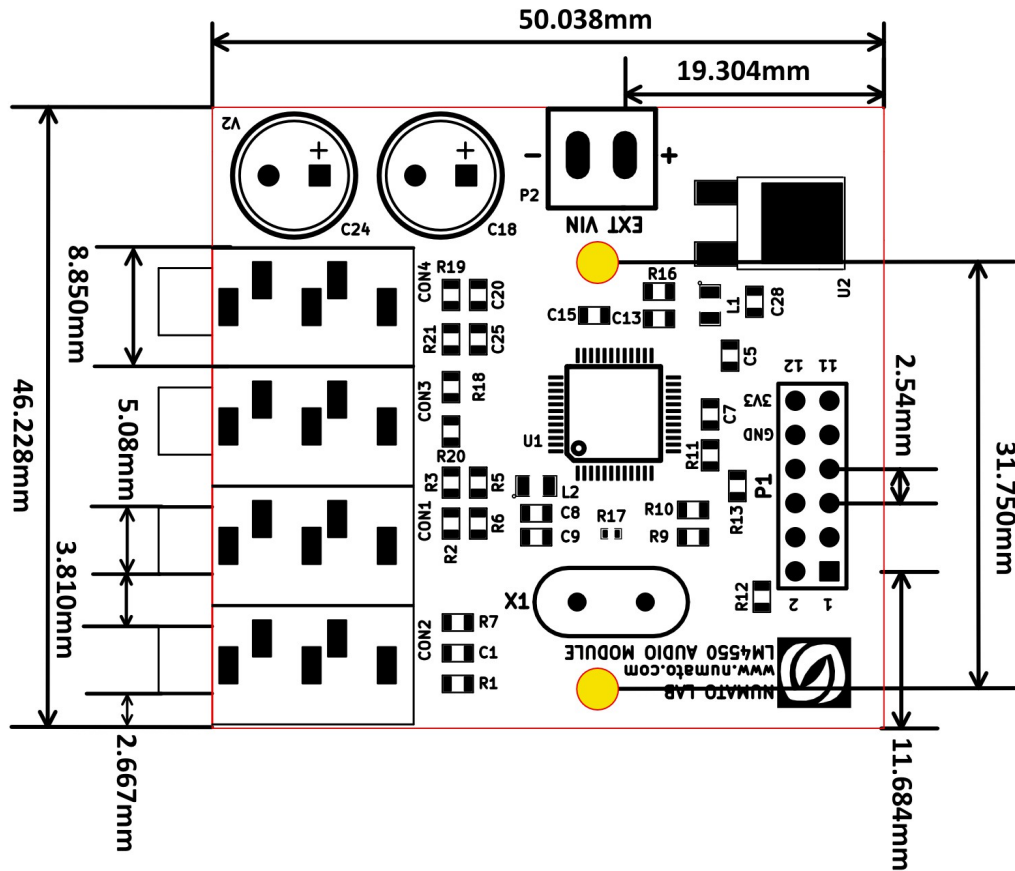
For more information, refer the schematics below.

Technical Specifications

| Parameter * | Value | Unit |
|-----------------------------|--------------------------|------|
| Basic Specifications | | |
| Power supply voltage | 3.3 | V |
| External Power Supply | 5-7 | V |
| LM4550 | | |
| Analog Mixer Dynamic Range | 97 (typ) | dB |
| Headphone Amp THD+N at 50mW | 0.02 % (typ) into 32Ω | |

* All parameters considered nominal. Numato Systems Pvt Ltd reserve the right to modify products without notice.

Physical Dimensions



L x W x H : 50.038 mm x 46.228 mm x 16 mm

Mechanical Hole Diameter : 3.2 mm

Schematics

See next page.

