

Stereo Balanced to Unbalanced Audio Converter

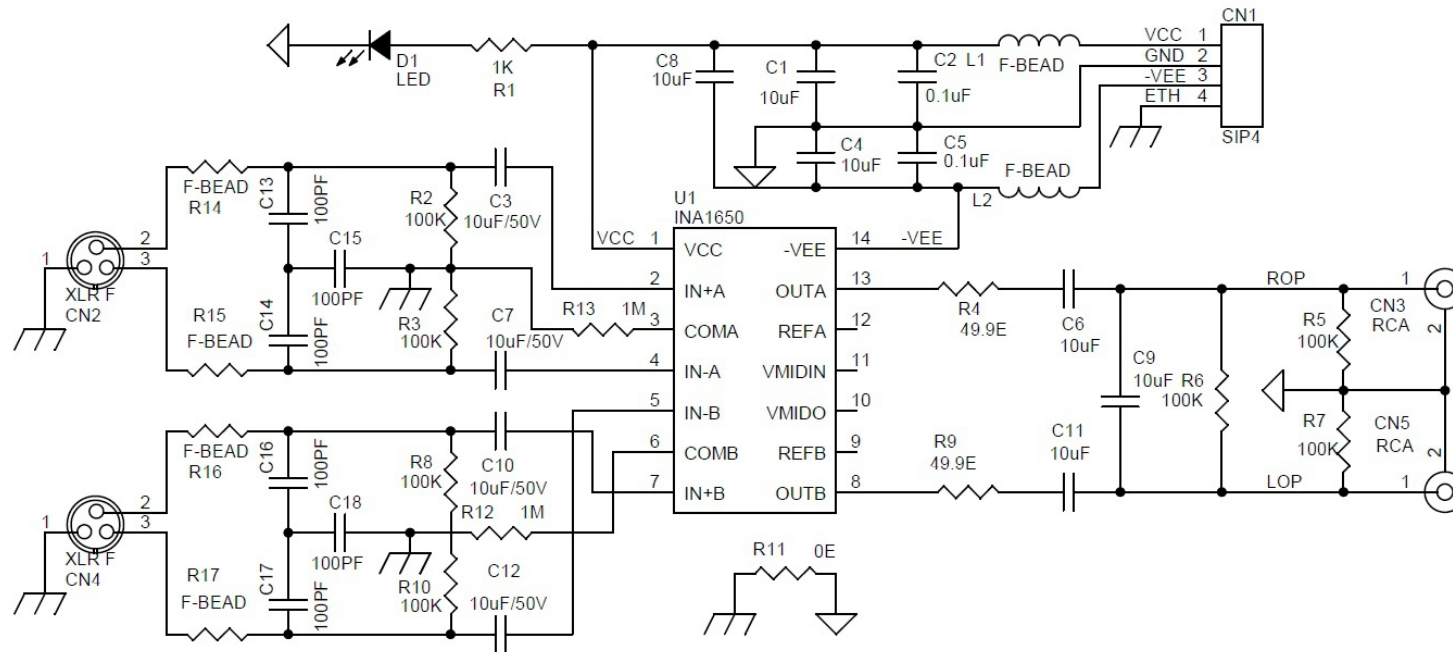
The primary role of this project is to convert a differential input audio signal into a single-ended output signal while rejecting noise that is common to both inputs (common-mode noise).

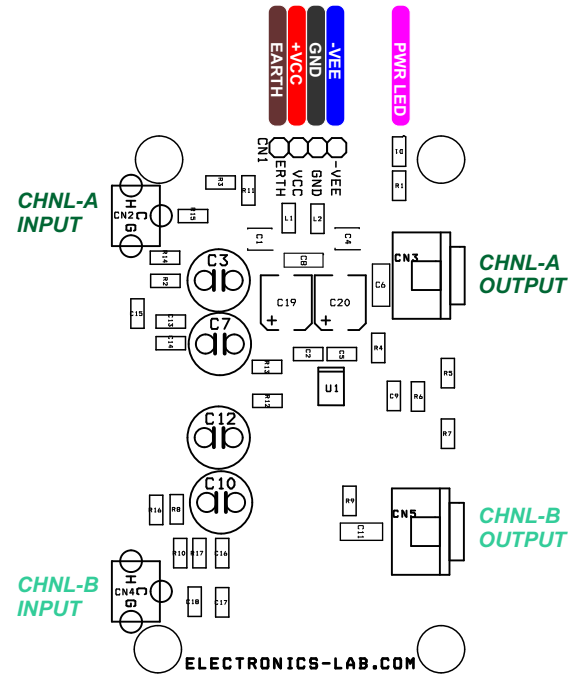
The circuit presented here is a differential amplifier intended to receive balanced line inputs in audio applications requiring a high level of noise immunity and optimum common-mode rejection. The circuit typically achieves an extremely high common-mode rejection ratio (CMRR) of 91 dB while maintaining an ultra-low THD+N of -120 dB at 1 kHz for 22-dBu signal levels. Precision matching of on-chip resistors gives the circuit an excellent CMRR performance. Operating supply range ± 12 V to ± 15 V. Connection of a stereo balanced line input via 2 x female XLRs to a stereo unbalanced output on RCA connectors. The circuit includes D1 power LED, Ferrite beads L1, L2 on the supply line to provide noise immunity. Ferrite Beads at input signals to reduce the RFI/EMI noise.

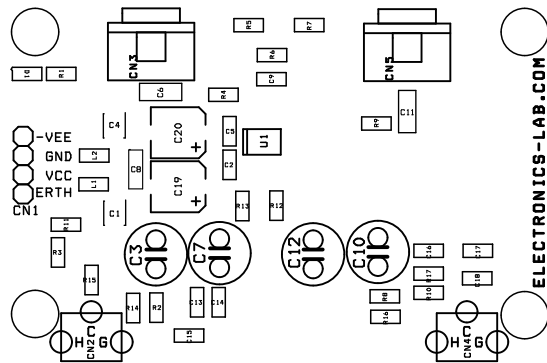
Features

- Supply ± 12 V to ± 15 V DC @ 40mA
- 2 X Female XLR Connector for Balance Audio Input
- 2 X RCA Connector Single Ended Audio Output
- EMI circuit on inputs reduce the noise
- High Input Impedance: 1-M Ω Differential
- Short-Circuit Protection -Chip
- PCB Dimensions 72.07MM X 47.47MM
- D1 Power LED

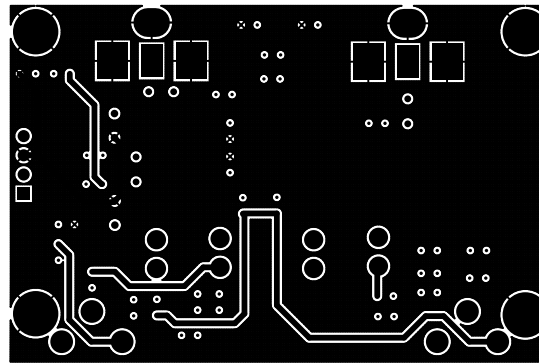




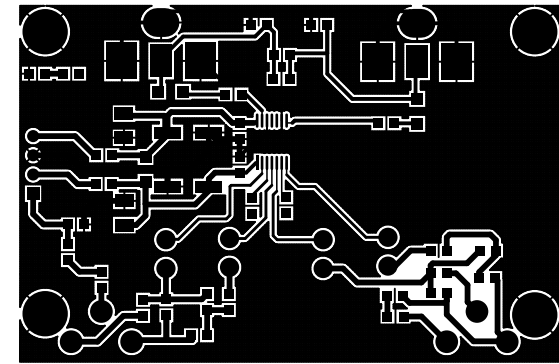




SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB Dimensions 72.07MM X 47.47MM

BOM						
NO	QNTY.	REF.	DESC	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	4 PIN MALE HEADER	WURTH	DIGIKEY	732-5317-ND
2	2	CN2,CN4	XLR F	SWITCH CRAFT	DIGIKEY	SC1906-ND
3	2	CN3,CN5	RCA	CUI DEVICES	DIGIKEY	CP-1459-2-ND
4	6	C1,C4,C6,C8,C9,C11	10uF/50V SMD SIZE 1206	MURATA/YAGEO	DIGIKEY	
5	2	C2,C5	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
6	4	C3,C7,C10,C12	10uF/50V NON POLAR	NICHICON	DIGIKEY	493-10835-3-ND
7	6	C13,C14,C15,C16,C17,C18	100PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
8	1	D1	LED SMD SIZE 0805	LITE ON	DIGIKEY	160-1427-1-ND
9	6	L1,L2,R14,R15,R16,R17	F-BEAD SMD SIZE 0805	TDK	DIGIKEY	445-6180-1-ND
10	1	R1	1K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
11	7	R2,R3,R5,R6,R7,R8,R10	100K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
12	2	R4,R9	49.9E 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
13	1	R11	0E SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
14	2	R12,R13	1M 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
15	1	U1	INA1650	TI	DIGIKEY	296-45339-1-ND