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LHX100 2.1 Amplifier Specifications and Guide

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1. Introduction

Audera Acoustics Inc. has developed a novel, high-efficiency, linear amplifier and a tracking power supply combination that offers:

- Improved signal-to-noise ratio (SNR) with respect to Class D and Class AB
- Reduced electromagnetic interference (EMI) as compared to Class D
- Minimized distortion levels and idle power consumption
- Optimized power supply requirements
- Decreased circuit complexity as compared to other hybrid topologies

All this in turn provide a robust, high-power, cost-competitive audio amplifier perfect for the home audio environment.

2. Features and Benefits

ClassLH™ is a linear-hybrid Class H amplifier, combining a switching power supply with a linear amplifier. Once an audio input signal is applied, the first stage of the system detects the envelope of the audio signal. It then passes a signal to the power supply which generates the positive and the negative rails based on the tracked audio signal. High-performance linear push-pull amplifier stage is placed between the speaker load and the split tracking power supply unit (PSU).

ClassLH™ enables high- power, low-cost amplifier design with:

- 50W output power in Subwoofer and 25W in each Satellite channel
- Low idle power consumption
- Wide dynamic range
- Low distortion and EMI
- Simple, versatile and compact size
- Considerably less heat dissipation resulting in small heat sinks
- High overall system efficiency
- Low system cost in comparison to Class AB or Class D
- Has optional I2S daughter cards to work with DSP or wireless boards

3. Applications

Audera's ClassLH™ amplifier – a hybrid-linear push-pull drive amplifier, powered by high efficient tracking power supply rails is a perfect fit for applications where cost is the main consideration, but the system performance cannot be compromised

The LHX100 2.1 amplifier system consists of two 25W satellite power amplifier channels and a 50W subwoofer power amplifier channel and a power supply board. It can be used

in mid-power computer multimedia systems, stereo receivers, combined hi-fi systems and music centers.

4. Electrical specifications

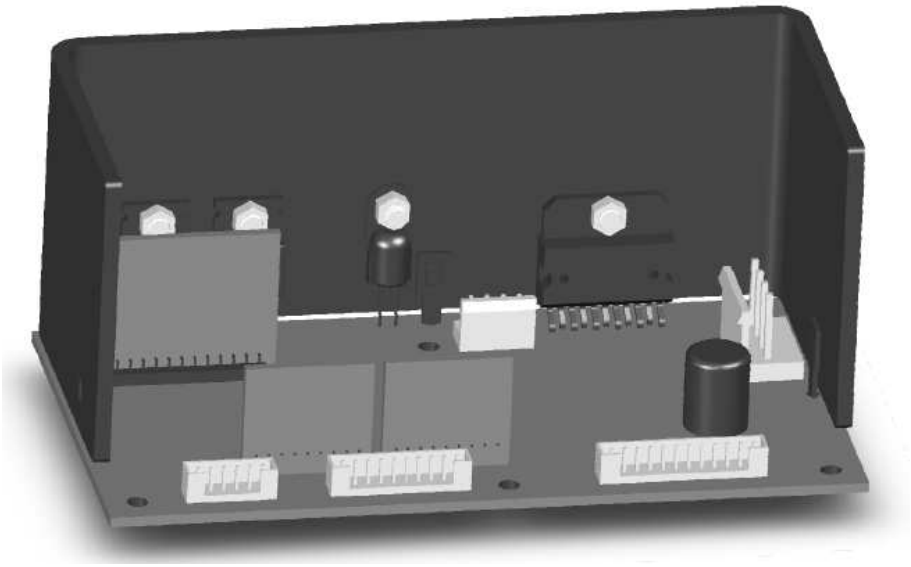
	Value	Comments/Notes
General		
Technology	ClassLH	
Application	2.1 Audio systems	
Configuration	2 x 25W + 1 x 50W	
System power rating	100W	
Low Frequency Channel		
Output Stage	Discrete MOSFET	
FTC Power @ 10% THD	Not rated	
Power into 4 ohms 10% THD	50W	
Maximum voltage swing	+/-22V pk	
Recommended Load	4 ohm	
Minimum Load DCR	3 ohm	
Usable frequency range	20Hz – 1kHz	External LPF should be used
THD+N @ 1 W, 100 Hz	< 0.1%	
SNR dBr max output	-100dBr, unweighted	With respect to 14V RMS
High Frequency Channel		
Output Stage	TDA7265	
FTC Power @ 10% THD	Not arted	
Power into 8 ohms 10% THD	2 x 25W	
Maximum voltage swing	+/- 22V pk	
Recommended Load	8 ohm	
Minimum Load DCR	6 ohm	
Usable frequency range	10Hz-20kHz	
THD+N @ 1 W, 1kHz	< 0.2%	
SNR dBr max output	< -96 dBr, unweighted	With respect to 13.4V RMS
Pre-amp		
Bi-quads	None	
Compressor	None	
Input impedance, each channel	10.0 kOhm	
Drive Level for rated power	0.7Vrms satellites, 0.6V RMS subwoofer	
Maximum input drive level	5V pk	

Control signals		
Inputs	ON/STANDBY; MUTE, EXT TRACK (opt.)	
Outputs	Subwoofer CLIP, Amplifier THERMAL	
Output supply rails		
Auxiliary Power supply	5V, 1.5A	
Standby power supply	+5Vstandby/5mA	
Feature Power supplies	+/-5V/40mA	
Protection		
Over Temperature protection	Yes	
Over Current protection	Yes	
Short Circuit protection	Yes	
AC Input		
Input fuse rating	2A	
Standby power consumption	<0.5 W	
Idle power consumption	3.5W	
AC Input voltage (rated power)	120 VAC or 230 VAC	
Agency performance		
Meets EMC requirement	EN-61000-4-2 EN-61000-4-3 EN-61000-4-4 EN61000-4-5 EN-61000-4-6 EN-61000-4-11 EN-55013 FCC part 15-B	
Class II insulation (no ground)	Yes	
Meets Safety requirements	IEC-60065	
Meets Energy Star	Yes	

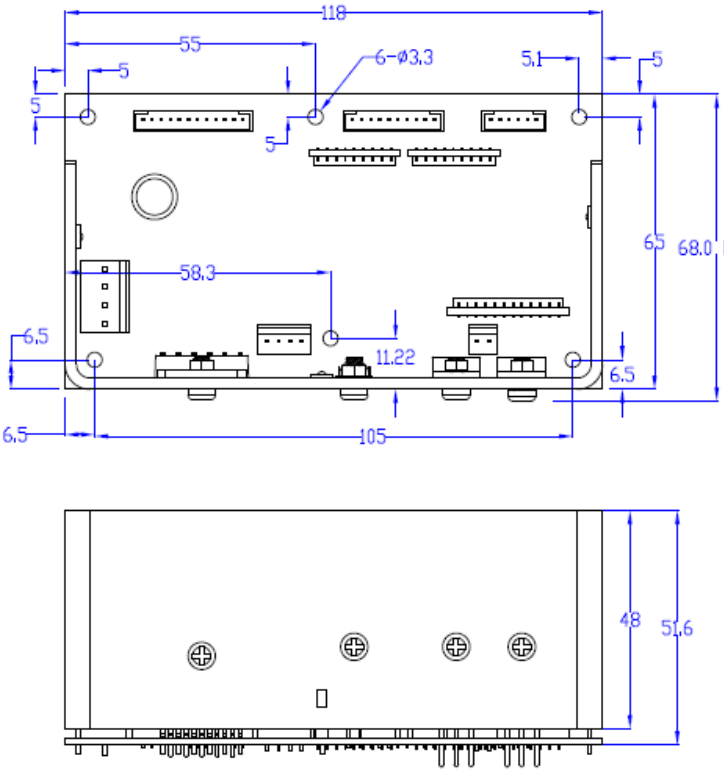
5. Mechanical specifications

Mechanical		
Physical dimensions* L x W x H mm	Amplifier board 118 x 65 x 52 mm PSU board 111 x 60 x 31 mm	
Weight	TBD	
Vibration	TBD	

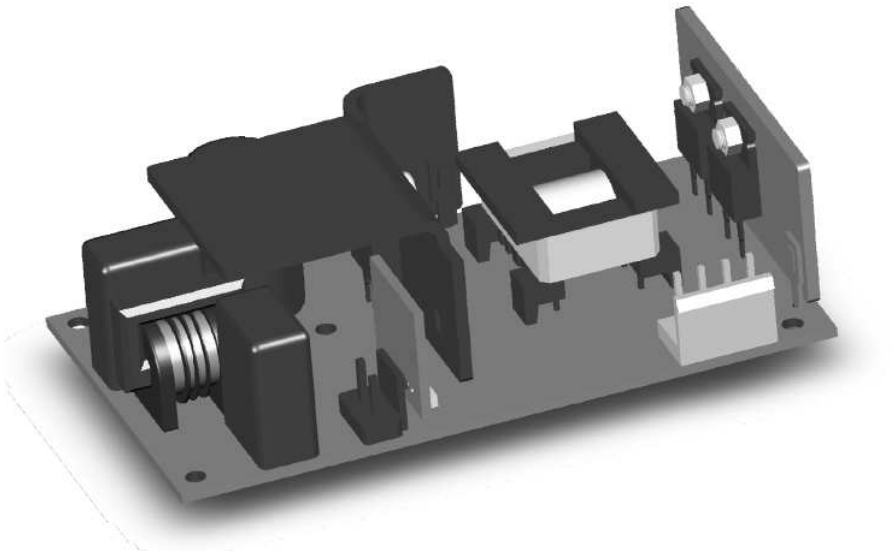
6. Mechanical drawings



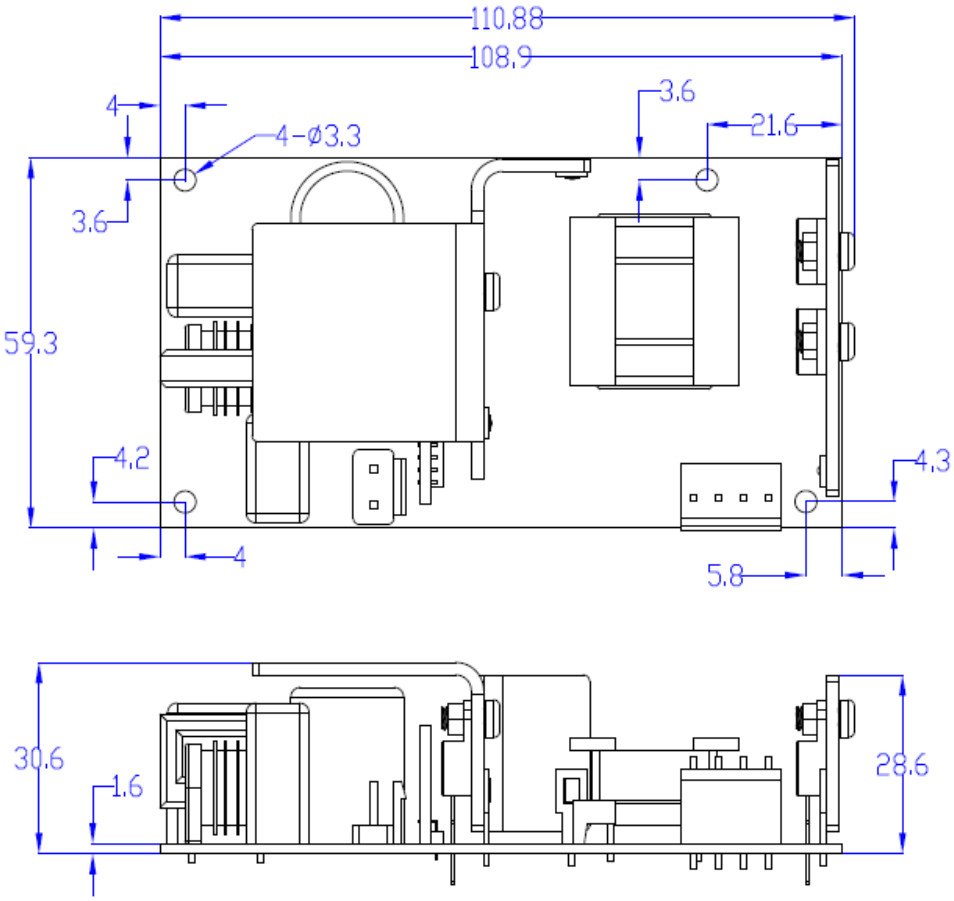
Amplifier board



Amplifier board assembly drawing



Power supply board



Power supply board assembly drawing