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P2X20 2.0 / 1.0 – W2 Amplifier Specifications and Guide

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1. Introduction

The consumer audio market has yet to find a battery powered amplifier that can reproduce powerful sound and sustain a long battery life in a wireless system. With Audera's patented P2X and ClassHD amplifier technologies and Bluetooth wireless receiver, a compromise is no longer necessary. It IS possible to enable long play time and high output power from the wireless amplifier.

2. Features and Benefits

Taking advantage of music's inherently large peak-to-average power ratio, P2X stores enough energy to reproduce these peaks without exceeding the power ratings of the power-limited sources such as a DC wall adapter, small battery pack, or USB port.

As a result, P2X amplifiers can produce five to eight times more power than a conventional Class D amplifier operating from the same power-limited source.

P2X works best when coupled with our other patented amplifier technology, ClassHD, which uses a Class D switching amplifier coupled with a tracking switch-mode power supply to greatly reduce switching losses. This can cut an amplifier's idle power by a factor of 5 to 10 and greatly improve its efficiency with moderate levels of music, which extends battery life tremendously.

By incorporating apt-X© coding technology into P2x ultra efficient amplifier technology, Audera can offer Bluetooth Stereo products with audio quality indistinguishable from wired with an impressive dynamic range of >92dB (at 16bit/44.1kHz).

The main features of P2X20 2.0/1.0 – W2 amplifier with Bluetooth wireless :

- Patented energy storage and smoothing circuitry extends battery life without compromising high power capability.
 - 2 x 10W rms or 1 x 20W capability (25ms into 2 ohms resistive load or 4 ohms)
 - Low idle power: 180mW
- Can be reconfigured as 1 x 20W or 2 x 10W. Ideal for a portable 1.0, 2.0, or 2.1 systems.
- Ultra-low standby power: TBD mW (extended battery life).
- Onboard compressor automatically adjusts gain to control output clipping during overdrive events
- Bluetooth v2.0 support
- Separate L/R or stereo firmware selection with on board jumper
- MUTE function
- 2.4Ghz ISM band
- Class2 radio with Range >10m

3. Applications

The combination of P2X and ClassHD delivers a no-compromise, low-cost solution for any battery powered portable or semi-portable audio system and truly wireless speakers. Long play time, small size, and high output power can now co-exist in your portable application!

4. Electrical specifications

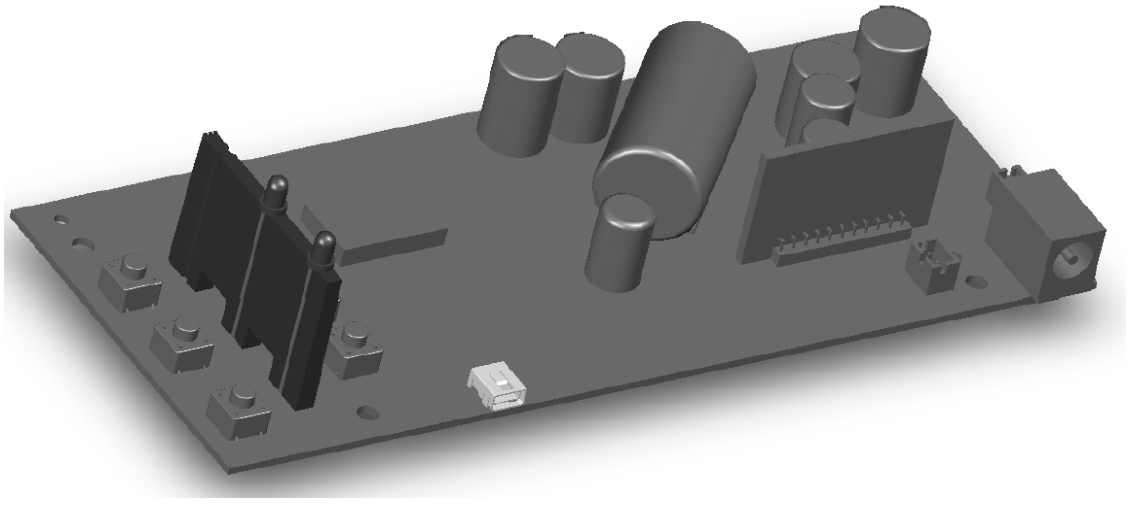
	Value	Comments/Notes
General		
Technology	P2X with ClassHD	Switching Amplifier with P2X Energy Storage and ClassHD tracking power supply.
Application	Wireless Portable Audio	Bluetooth portable wireless
Configuration	2 x 10W or 1 x 20W	for 25mS
System FTC power rating	3.6W	
Channel 1		
Output Stage	Discrete MOS	
FTC Power @ 10% THD	2 x 1.8W rms or 1 x 3.6W rms	2 x 2 ohms or 1 x 4 ohms resistor load @1% THD
Burst Power	2 x 10W rms or 1 x 20W rms	2 x 2ohm or 1 x 4 ohms resistor load, 25 ms duration.
Maximum voltage swing	18V pk-pk	
Recommended Load	2 x 2 ohms or 1 x 4 ohms nominal; 1.6 ohms or 3.2 ohms DCR	(Higher impedance will result in lower burst power due to voltage clipping)
Minimum Load Impedance	1.6 ohms or 3.2 ohms	Minimum 1.6 ohms at all frequencies from DC to 20kHz.
Usable frequency range	43Hz-20kHz (4ohm)	-3dB (For AMP only, Adjustable EQ)
THD+N @ 0.5 W, 100 Hz	<0.2%	2 x 2 ohms or 1 x 4 ohms resistor
THD+N @ 1 W, 1kHz	<0.3%	2 x 2 ohm or 1 x 4 ohms resistor
SNR	70dBV	6V Power supply (Battery)
Pre-amp		
Filters	DSP , Discrete	5 band Active EQilaizer ,42Hz HPF, recommended to add additional filtering externally to power amp
Compressor	Discrete JFET	
Input impedance	TBD	
Drive Level for rated power	400 mV rms	(Amp)For 2 x 10W rms or 1 x 20W rms, 25ms burst, at 1kHz into 2 x 2 ohm
Maximum input drive level	1.0 V rms	(Amplifier input)

Protection		
Over Temperature protection	n/a	None needed: thermally safe by design.
Over Current protection	NO	Do not test. Fail safe. Damage to unit is likely.
Short Circuit protection	NO	Do not test. Fail safe. Damage to unit is likely.
Power Source		
Input Voltage Range	4V-6V	4xAA in series, or 6V/1A adapter
Input Current	1A	Internal current limiting
Standby power consumption	10mA	Wireless off
Idle power consumption	20mA	Wireless active
Battery life	15Hours	Depends on music level (4..30hr)
Agency performance		
EMC standards	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	By Design
Meets Safety requirements	IEC-60065 IEC-60950	Designed to work with pre-approved AC-DC adapter to expedite safety approvals process.
Meets Energy Star and EU 0.5W standby power requirements.	Yes	

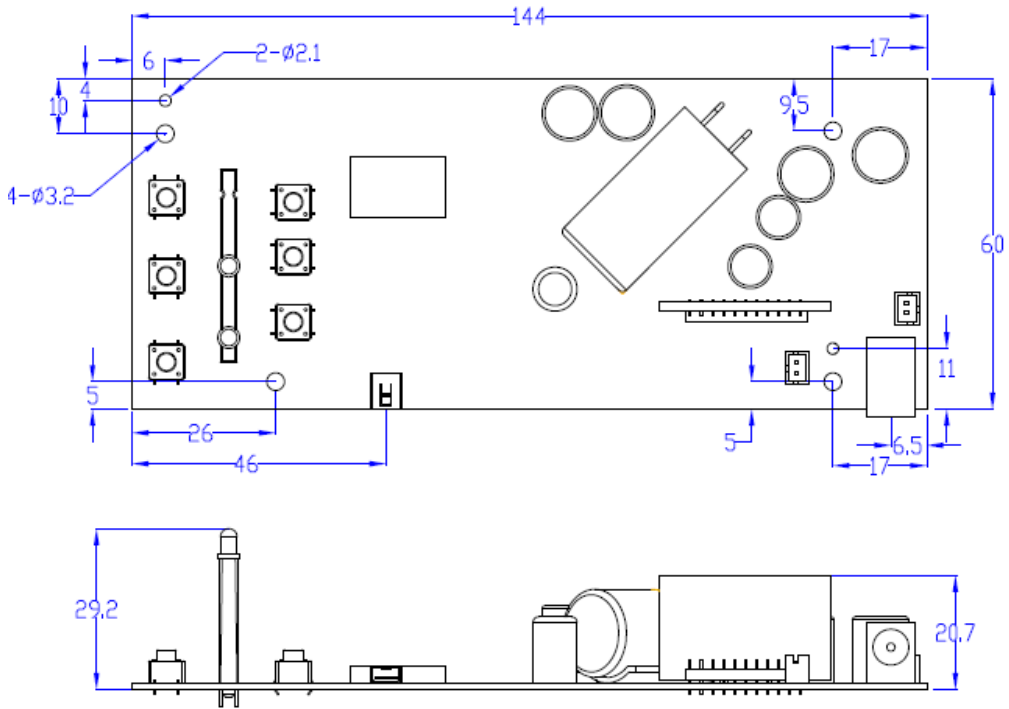
5. Mechanical specifications

Mechanical		
Physical dimensions L x W x H mm	144 x 60 x 20.7mm	
Weight	TBD	
Vibration	TBD	

6. Mechanical drawings



Amplifier board



Amplifier board assembly drawing