

Zachry Car Audio Amplifier Specification

1 Model number: R490

2 Features:

- 4X90Wrms Class-AB amplifier.
- 2 ohm load stable.
- Double Side PCB and SMD components.
- Adjustable Input level, LPF, HPF.
- Advanced short circuit, overload, over heat and low voltage protection.
- 2-channel mode switch available.
- Gold-plated isolation terminals.

3 Detailed specs:

3.1 Test Condition.

All the specs were tested with following condition unless noted.

1. Power supply: 13.8V DC power supply
2. Test signal: 1KHz sine wave.
3. Loads: Resistor dummy load.
4. Environment: 25 degree C, open air.
5. Relative humidity: 70%.
6. Test Instruments: Audio Precision SYS-2322A.

3.2 Output power performance.

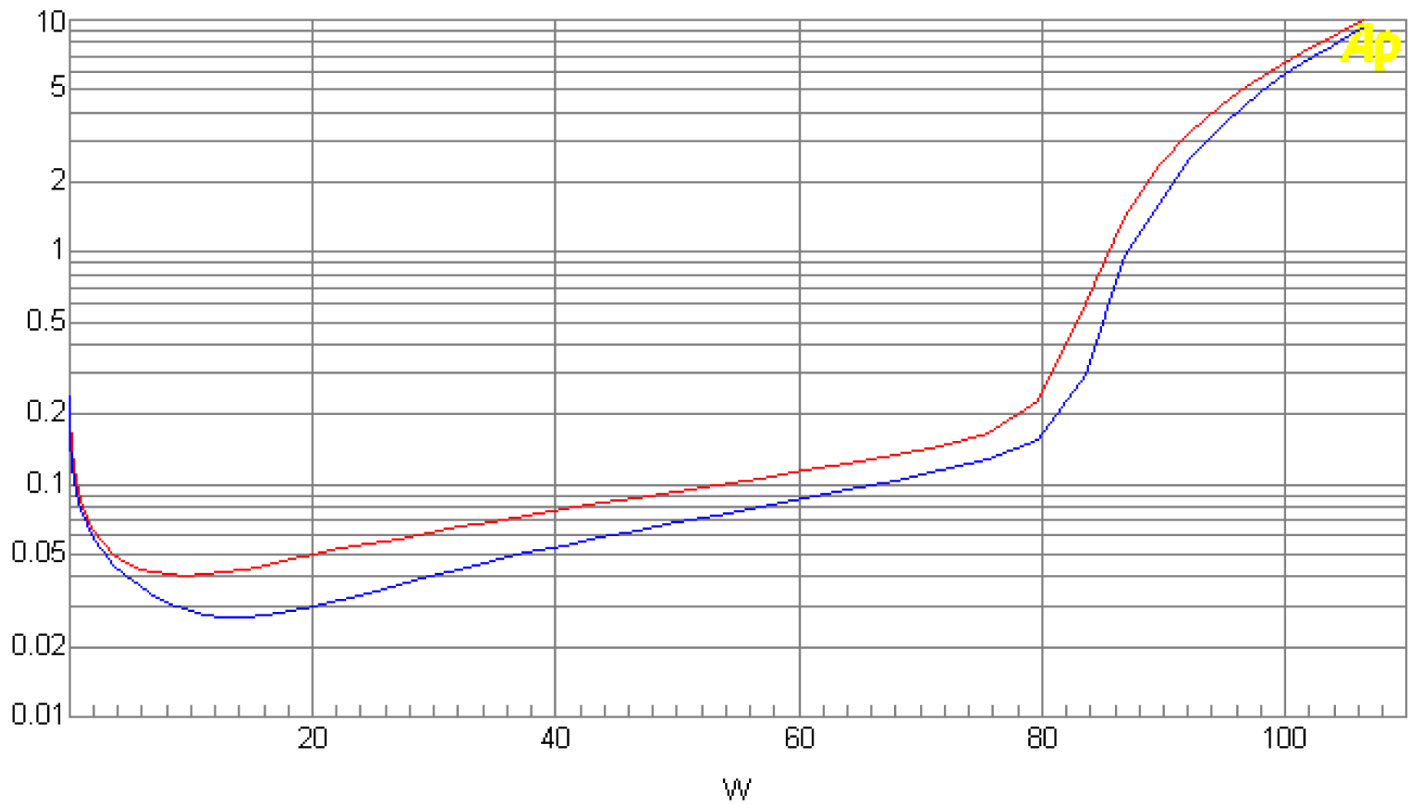
Following table is the RMS output power with THD+N value at 5%, 3% and 2%.

Power THD+N	RMS power (4ohm)		RMS power (2ohm)		Bridged RMS power	
	Left	Right	Left	Right	8ohm	4ohm
THD+N=5%	97W	99W	147W	148W	192W	289W
THD+N=3%	91W	93W	139W	141W	183W	272W
THD+N=1%	85W	86.5W	123W	126W	170W	242W

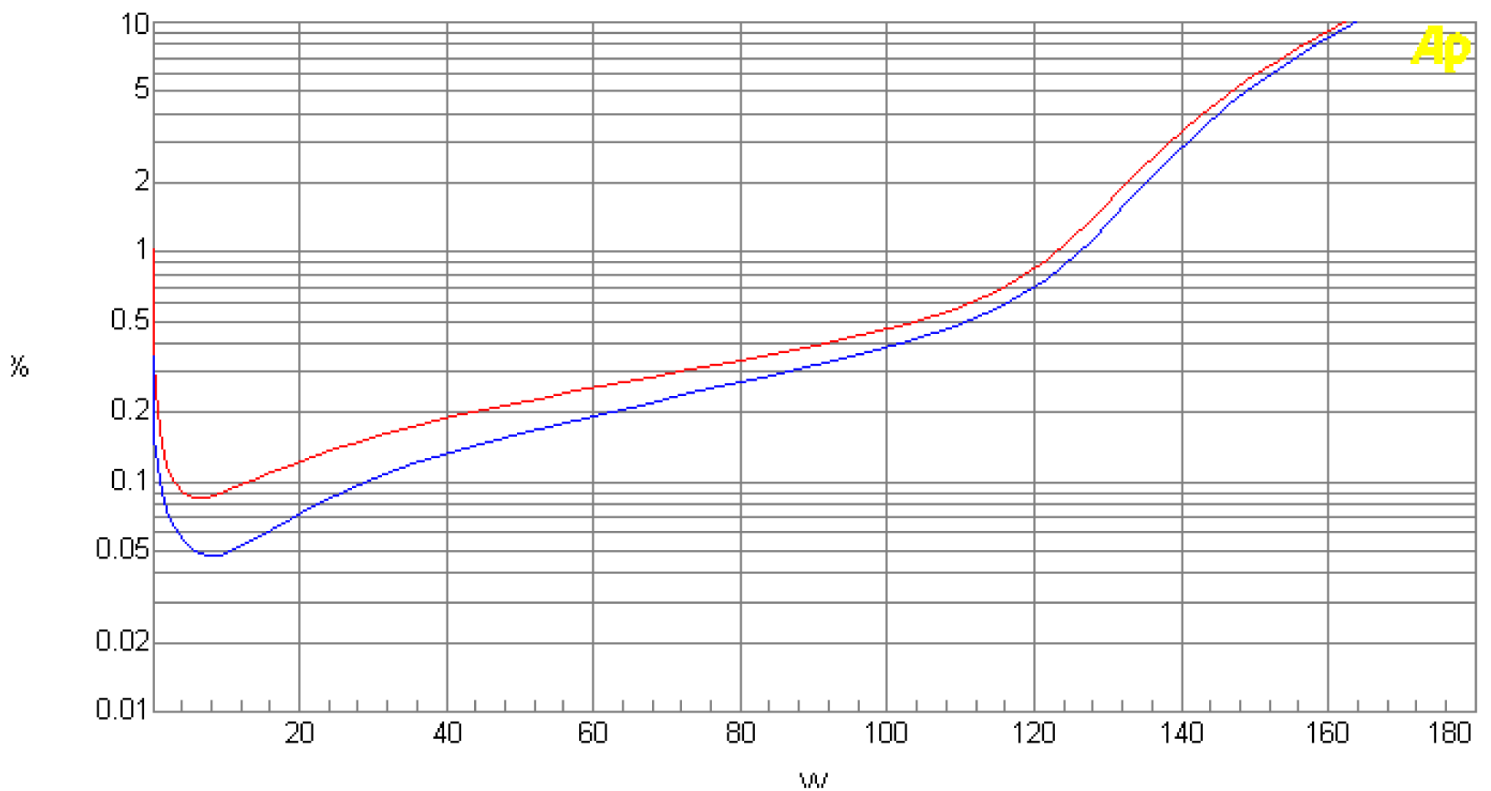
Table 1 Output Power with THD+N

Following charts show the output power with THD curve at 4ohm load, 2ohm load stereo and

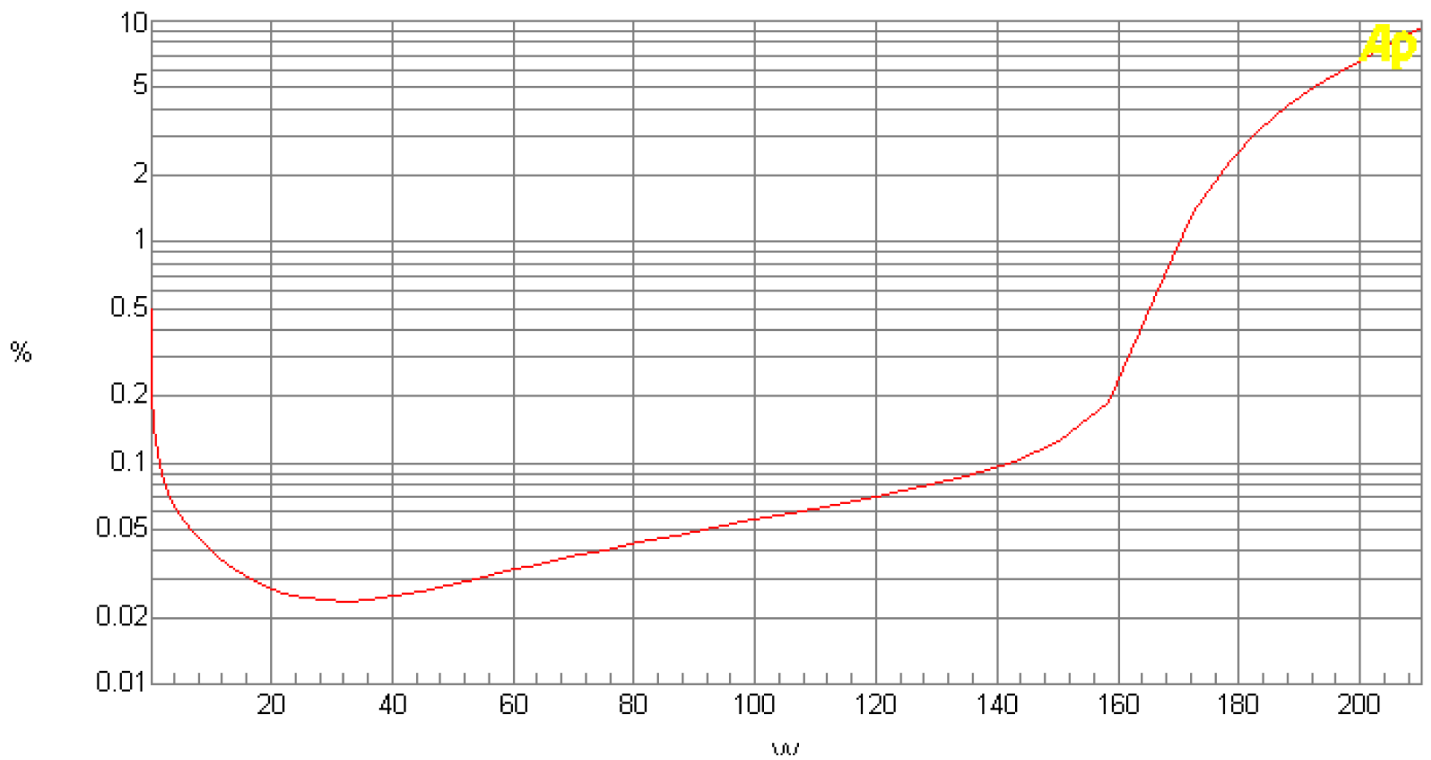
bridged power at 8ohm, 4ohm.



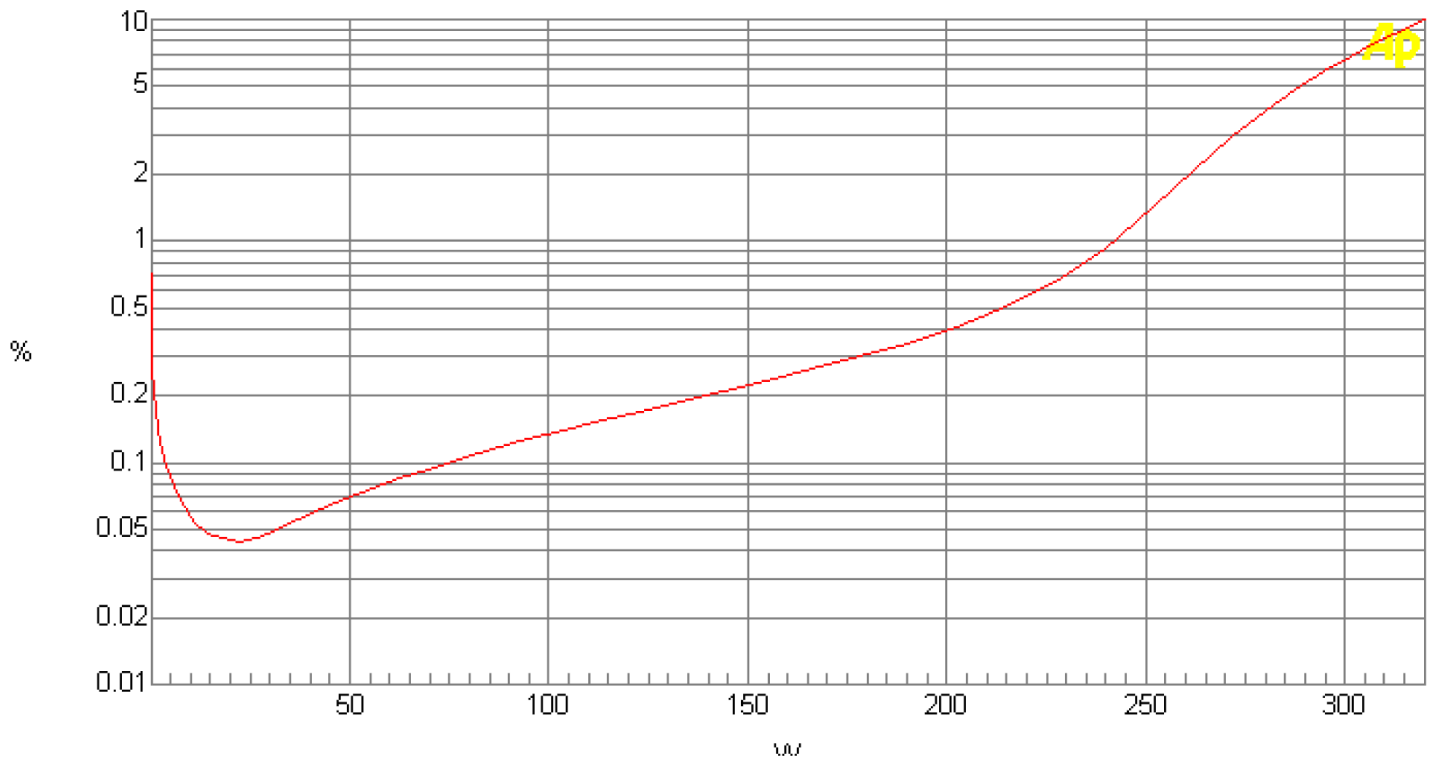
Chat 1. RMS output power @4ohm with THD+N



Chat 2. RMS output power @2ohm with THD+N



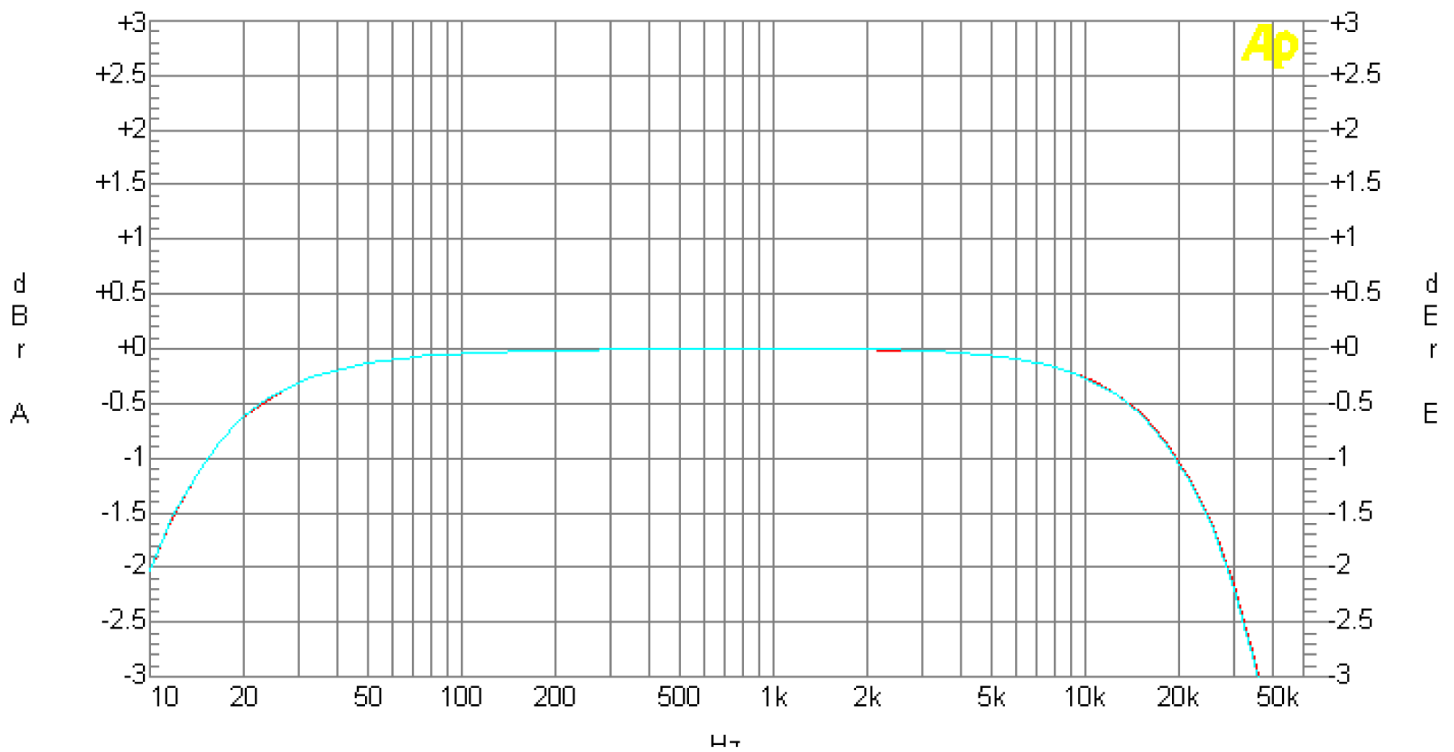
Chat 3. Bridged RMS power @8ohm with THD+N



Chat 4. Bridged RMS power @4ohm with THD+N

3.3 Frequency Response

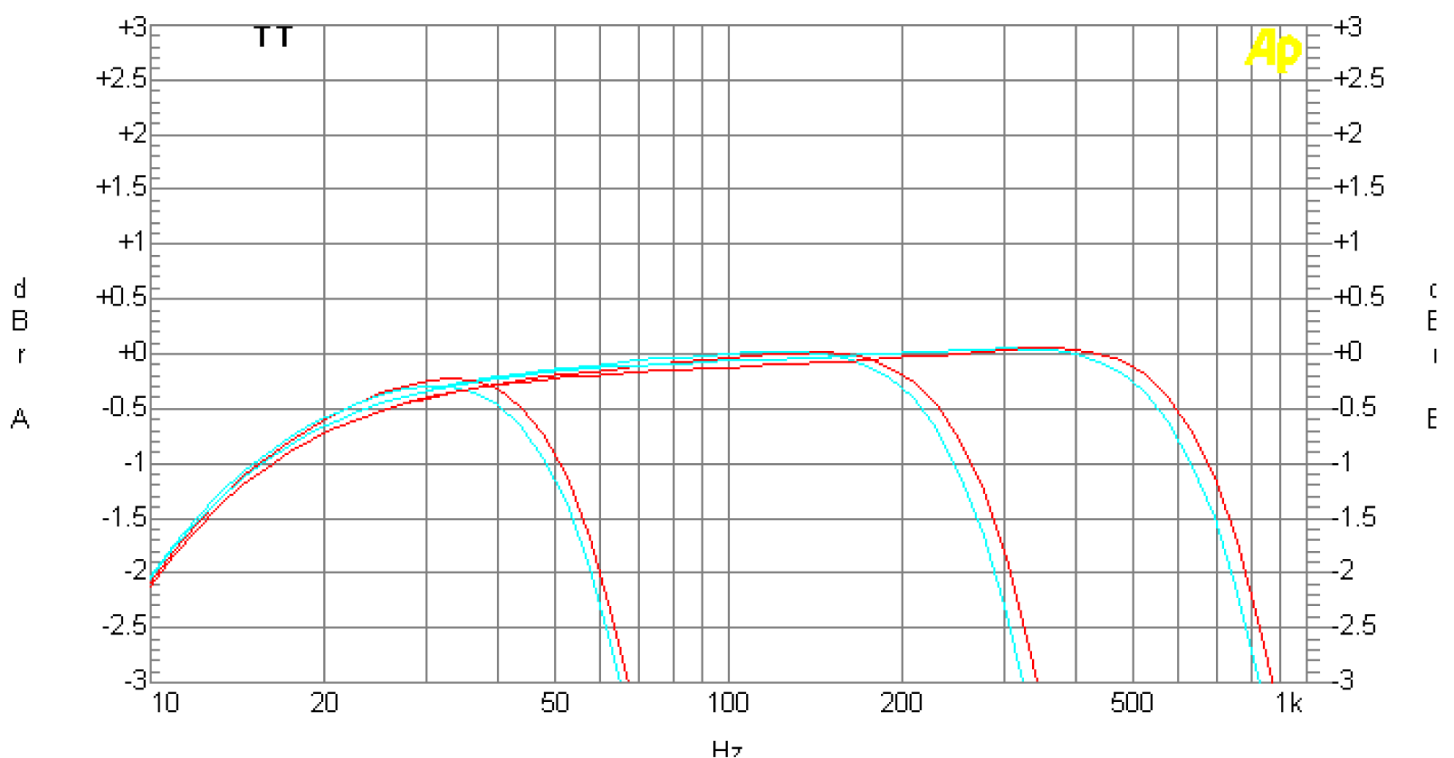
1. -3dB frequency response: 6Hz~36KHz.



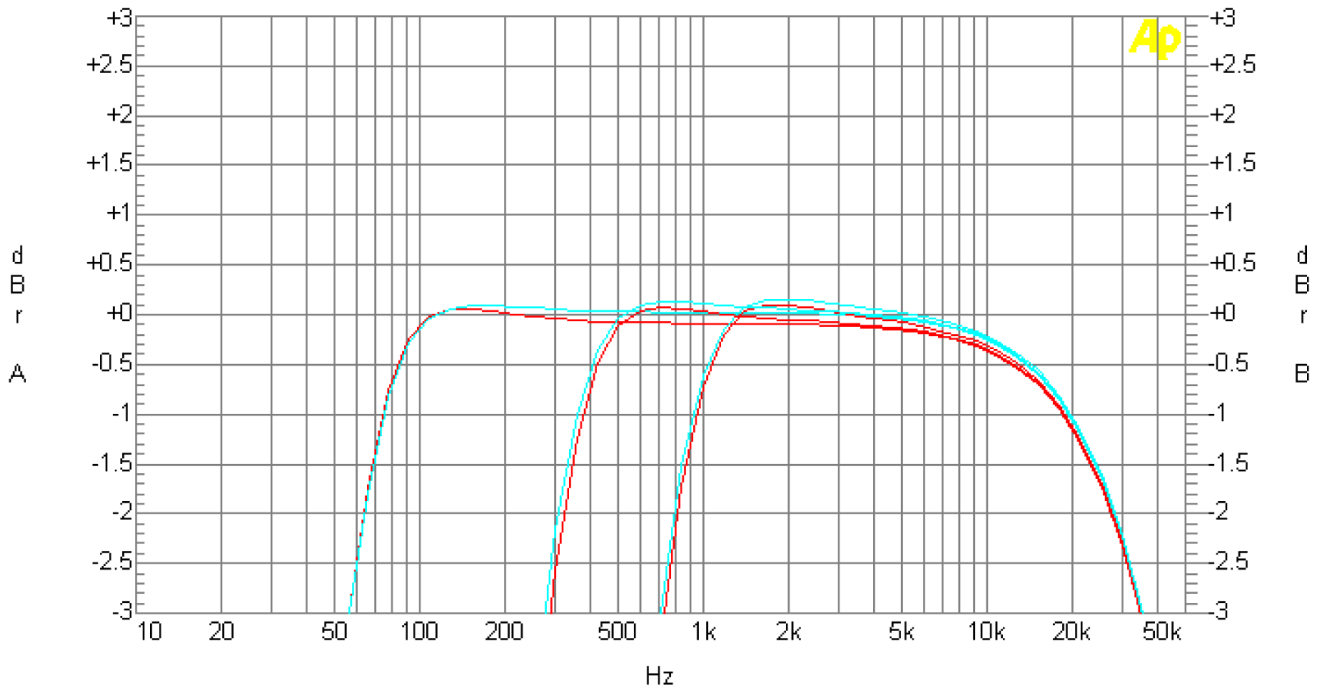
Chat 5. Frequency Response

3.4 LPF & HPF Filter feature

1. LPF adjustable from 65Hz~810Hz.
2. HPF adjustable from 56Hz~710Hz.



Chat 6. LPF response



Chat 7. HPF Filter response

3.5 Total Harmonic Distortion

THD+N=0.027%(A-weighted) @ 17W with 4ohm load.

3.6 Protection System

1. Overload:

Protect at 1.30ohm load at full rated output power.

2. Short Circuit:

Full rated power short circuit protect test: passed.

Full rated power long last short circuit test: 10 minutes passed.

3. Over temperature:

Protect while heat sink temperature over 80 degree C.

4. Low voltage:

Protect while power supply voltage lower than 8.3V.

3.7 Idle current and Efficiency:

1. Idle current: 0.58A.
2. Efficiency: 72.5% at 84W 4ohm load (stereo).

3.8 Dimension

This amplifier's size is at 228 mmX282 mmX53mm(W,L,H).