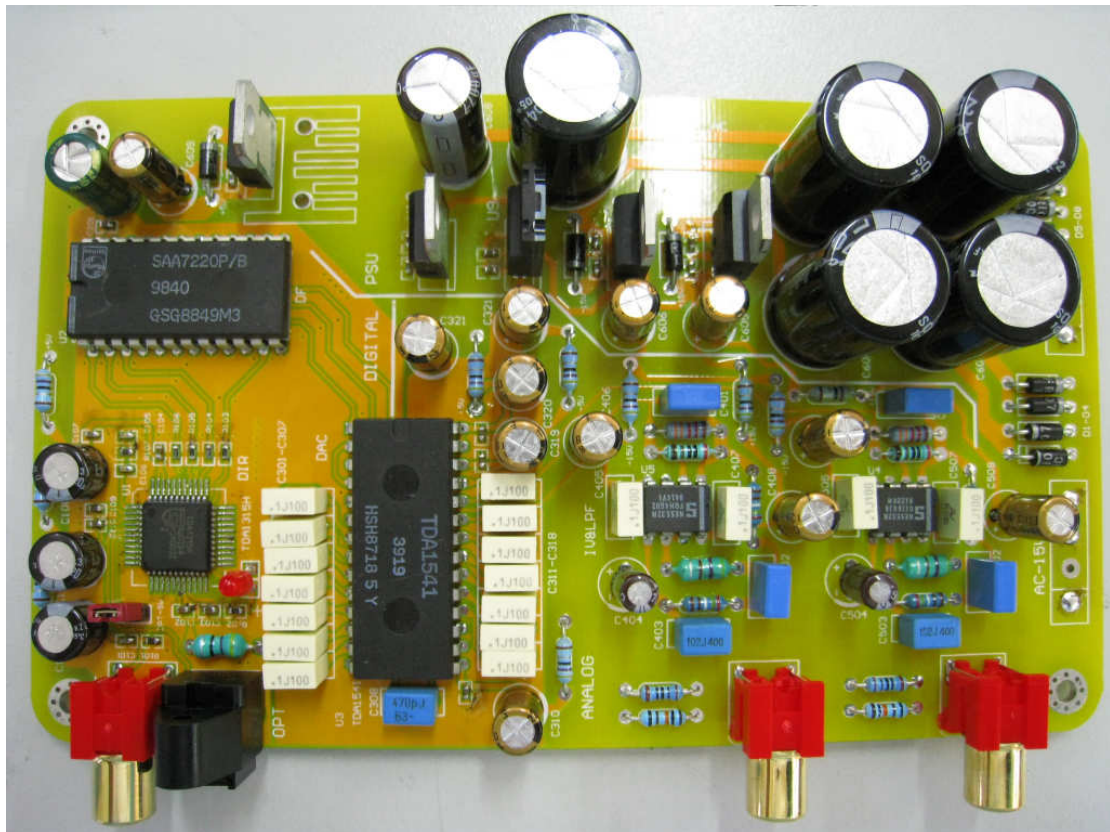


# **USER MANUAL FOR TDA1541 OS DAC**

**DOC VERSION 1.0**

## Over view

This is a over sampling DAC based on PHILIPS's AUDIO IC TDA1315,SAA7220P/B,NE5532N,and TDA1541. Built with fully audio grade components in order to get better listening experience.



### 1. Characteristics:

**32KHz/44.1KHz/48KHz input sample rate supported**

**COAXIAL and OPTICAL input supported**

**Fully assembled and tested**

**Fully audio grade components**

**Easy to build, high performance**

**Low cost**

**Dimensions: 89mm\*157mm\*30mm**

**\*TDA1541, TDA1315, SAA7220 and NE5532N are used ICs**

## 2. PSU

AC 15V-0-15V    0.1A    analog

AV    7V-0            0.5A    digital

Five regulated DC supplies are included on the PCB, the regulators are:

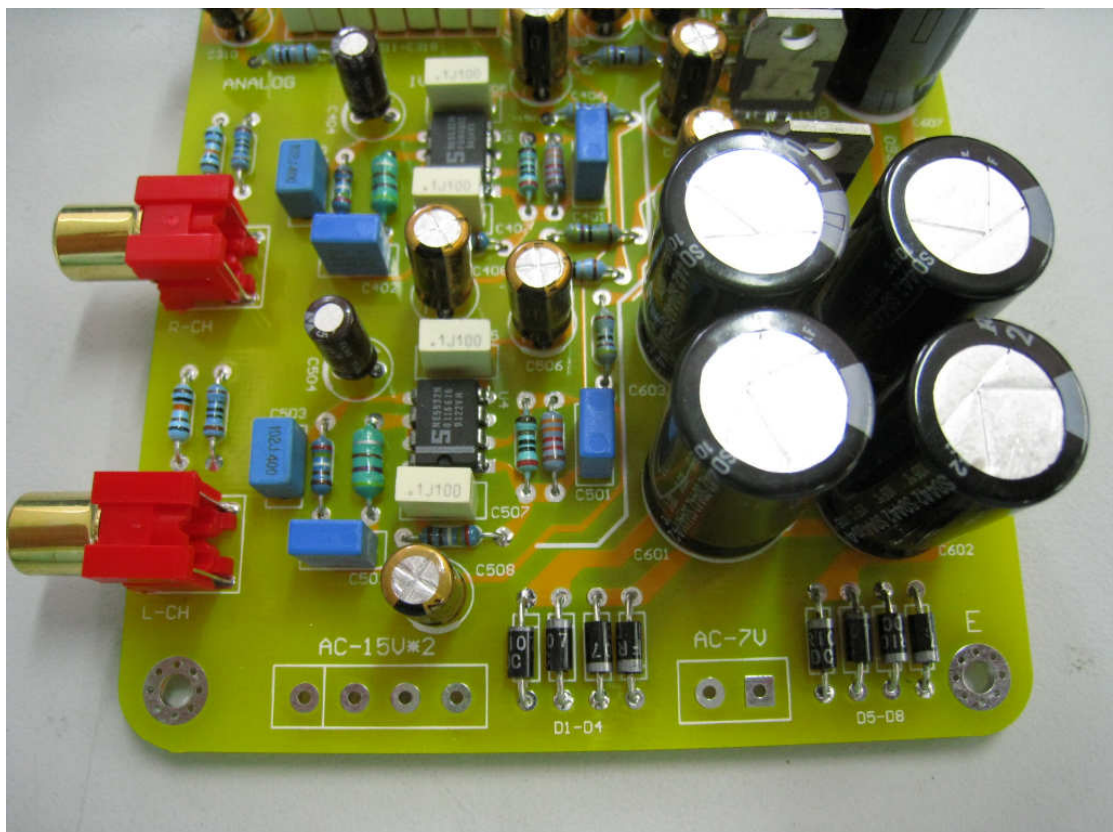
LM7805                    digital

LM7805                    analog

LM7905                    analog

LM7815                    analog

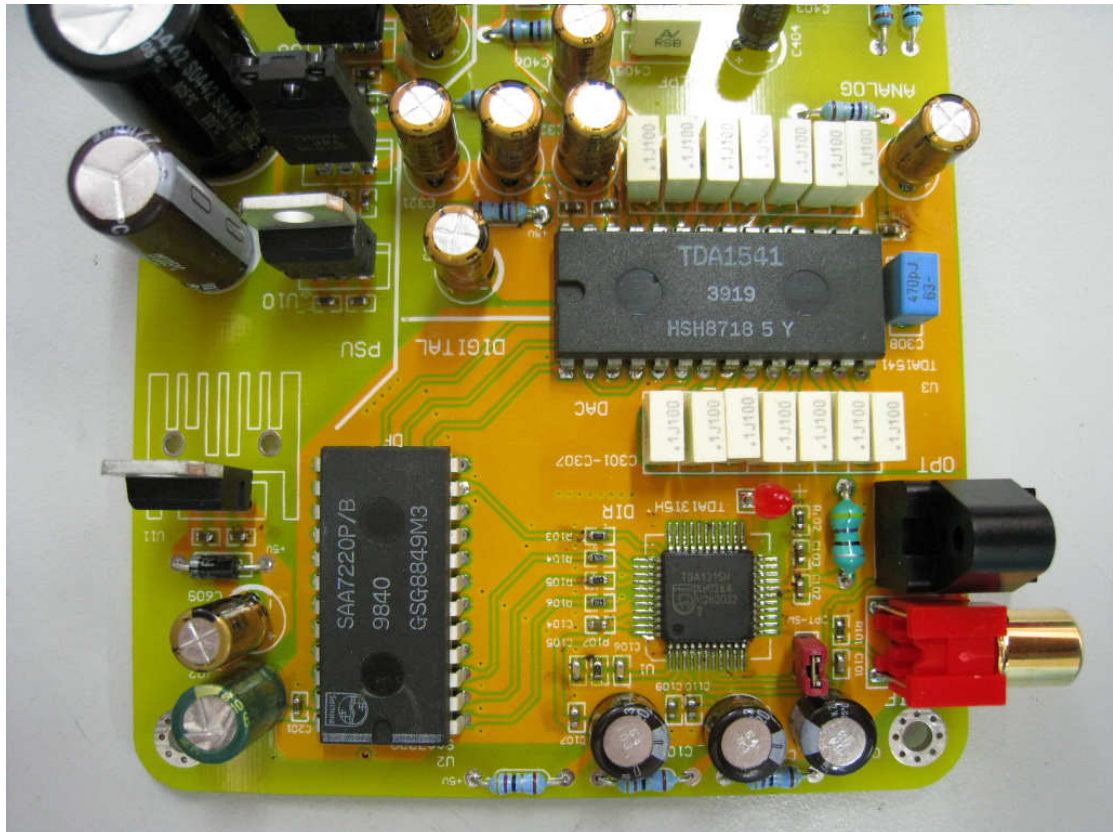
LM7915                    analog



\*you need to order such a 15VA~20VA transformer

### 3. Signal INPUTs

Both COAXIAL and OPTICAL digital signal are supported, including 32KHz ,44.1KHz ,48KHz.

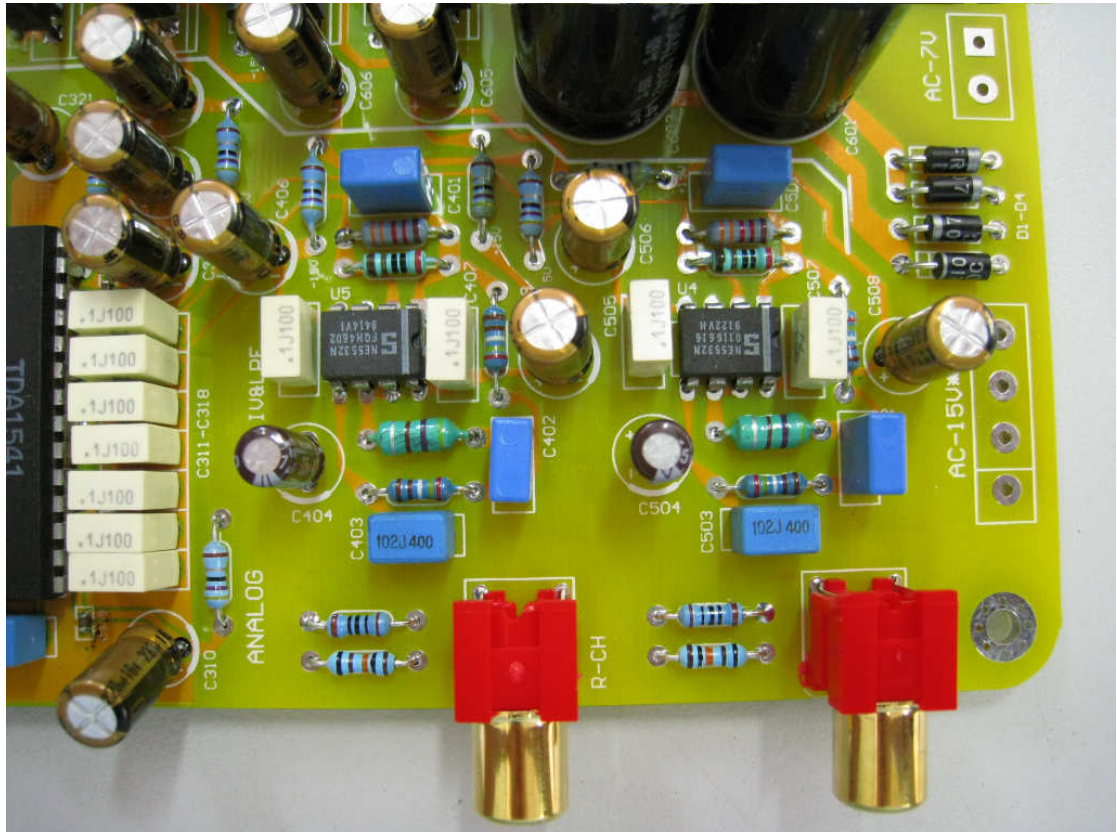


#### Notice:

1. Please short the OPT-SW with shorter when the optical input are selected.
2. Coaxial input provides higher performance



#### 4. Audio OUTPUT



### Gold plate RCA connectors

## Audio grade capacitors

**Standard stereo audio output.**

## RightMark Audio Analyzer test report

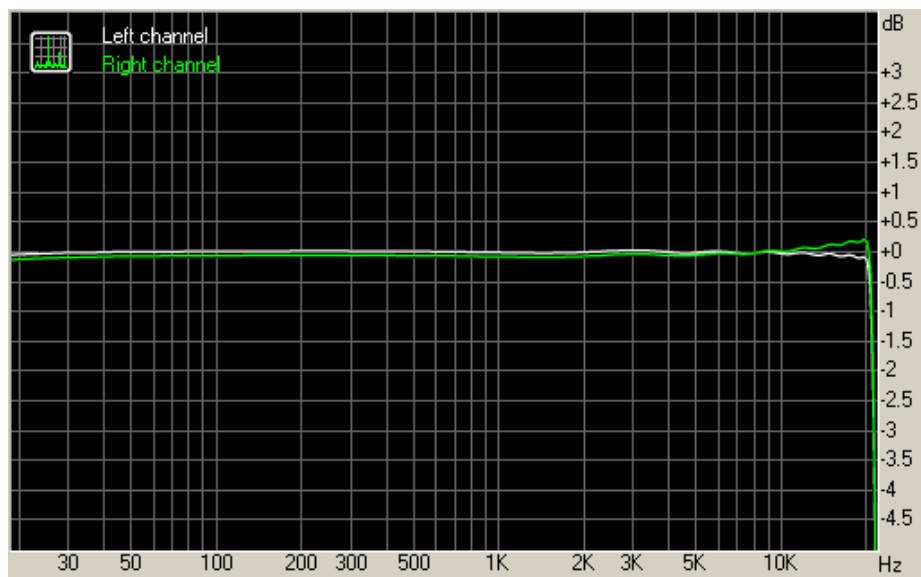
Testing device	TDA1541_DAC_44.1/24
Sampling mode	24-bit, 44 kHz
Interface	
Testing chain	External loopback (digi-out - line-in)
RMAA Version	6.2.3

20 Hz - 20 kHz filter	ON
Normalize amplitude	ON
Level change	-0.1 dB / -0.2 dB
Mono mode	OFF
Calibration signal, Hz	1000
Polarity	correct/correct

### Summary

Frequency response (from 40 Hz to 15 kHz), dB	+0.02, -0.06	Excellent
Noise level, dB (A)	-99.8	Excellent
Dynamic range, dB (A)	100.4	Excellent
THD, %	0.0022	Excellent
THD + Noise, dB (A)	-89.8	Good
IMD + Noise, %	0.0047	Excellent
Stereo crosstalk, dB	-99.1	Excellent
IMD at 10 kHz, %	0.0054	Excellent
<b>General performance</b>		<b>Very good</b>

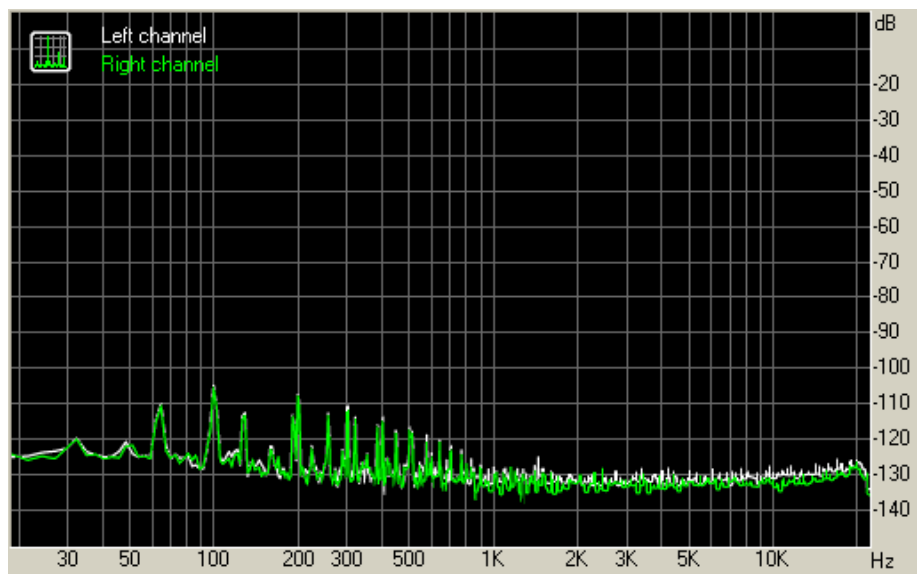
## Frequency response



From 20 Hz to 20 kHz, dB -0.11, +0.02

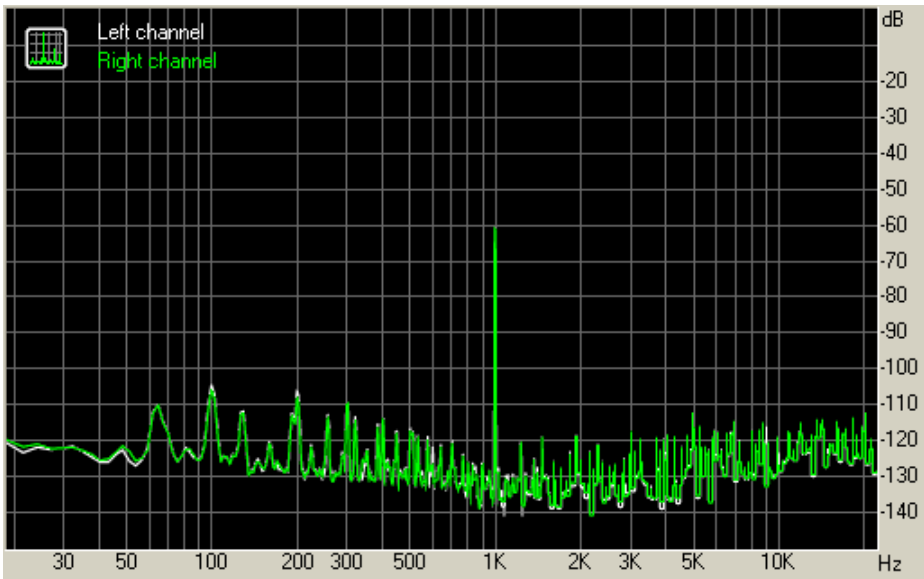
From 40 Hz to 15 kHz, dB -0.06, +0.02

## Noise level



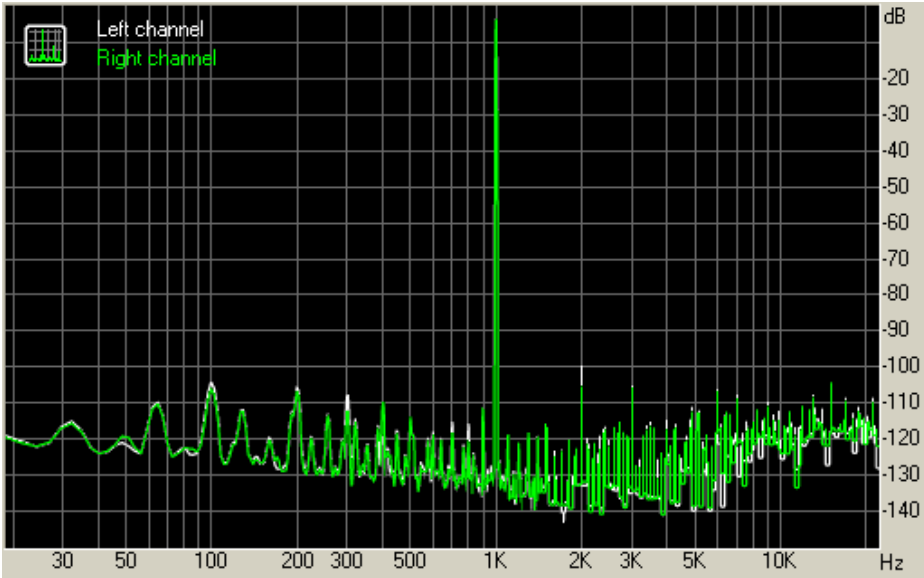
	Left	Right
RMS power, dB	-96.4	-97.6
RMS power (A-weighted), dB	-99.1	-100.5
Peak level, dB FS	-81.8	-81.6
DC offset, %	+0.0	+0.0

Dynamic range



	Left	Right
Dynamic range, dB	+97.7	+97.7
Dynamic range (A-weighted), dB	+100.5	+100.4
DC offset, %	+0.00	+0.00

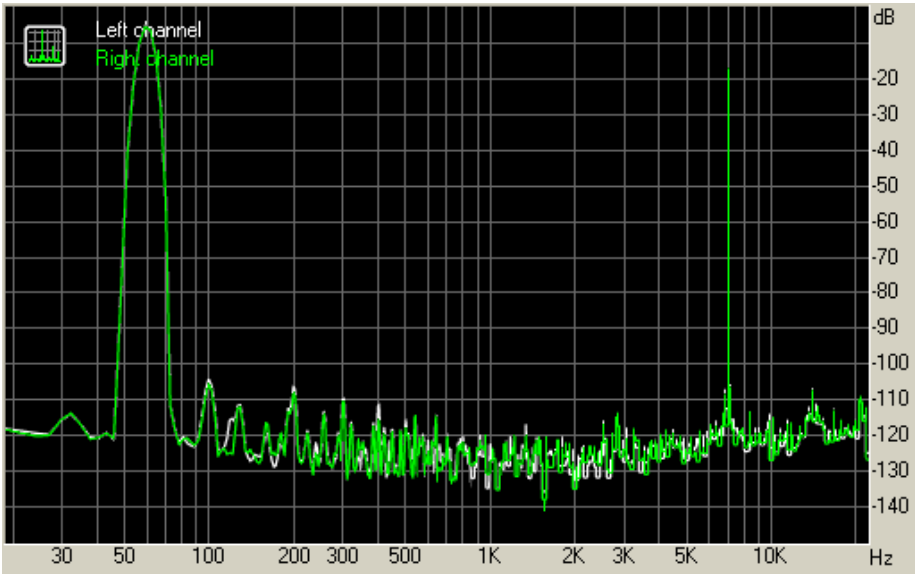
THD + Noise (at -3 dB FS)





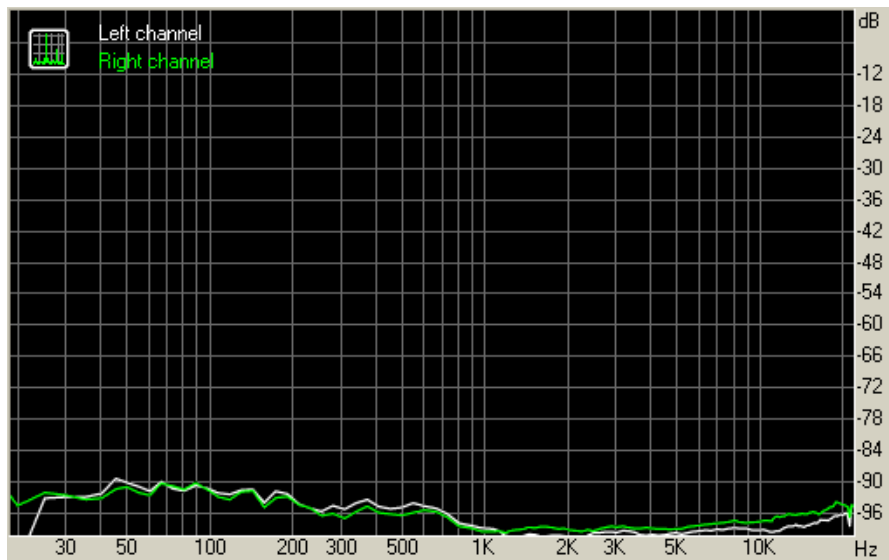
	Left	Right
THD, %	+0.0024	+0.0020
THD + Noise, %	+0.0038	+0.0035
THD + Noise (A-weighted), %	+0.0034	+0.0030

Intermodulation distortion



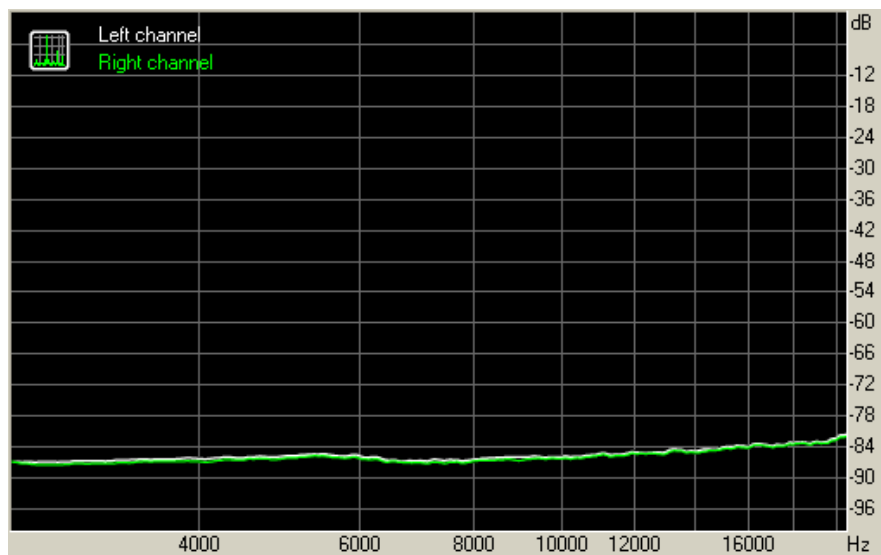
	Left	Right
IMD + Noise, %	+0.0048	+0.0046
IMD + Noise (A-weighted), %	+0.0037	+0.0036

Stereo crosstalk



	Left	Right
Crosstalk at 100 Hz, dB	-90	-91
Crosstalk at 1000 Hz, dB	-98	-98
Crosstalk at 10000 Hz, dB	-98	-97

## IMD (swept tones)



	Left	Right
IMD + Noise at 5000 Hz,	0.0052	0.0050
IMD + Noise at 10000 Hz,	0.0051	0.0049
IMD + Noise at 15000 Hz,	0.0063	0.0061

**Thanks for ordering**

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