SGI Desktop Audio Hardware Performance Specifications (Typical)

Indigo
Indigo2
Indy

Compiled by Amit Shoham 10/93

Send comments etc. to:
Ted Marsh
tm@esd.sgi.com

NOTE:
All specifications subject to change without notice

INDIGO AUDIO PERFORMANCE

ANALOG STEREO LINE LEVEL INPUTS

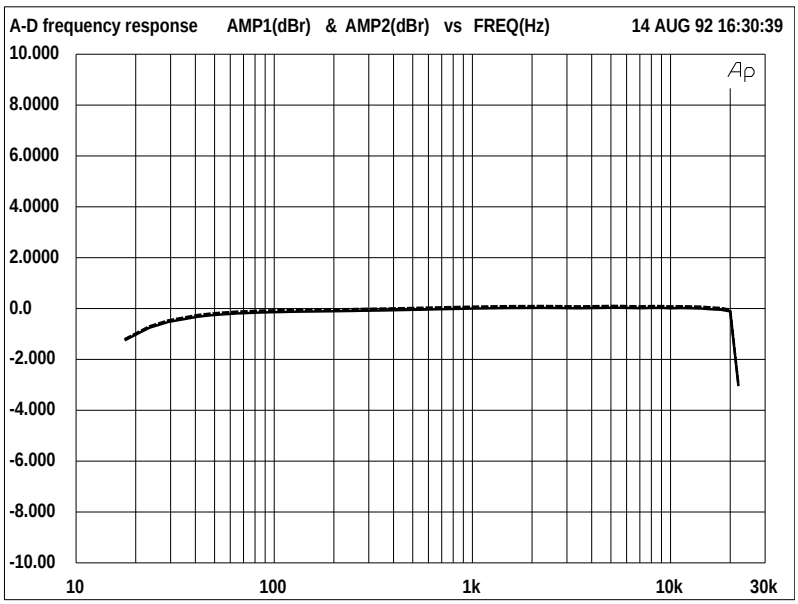
Frequency Response:
+/- 0.43dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0027% 20Hz to 20kHz maximum: 0.0057%
(max occurs at 22.3Hz)

Residual Noise, Unweighted:
-90.77dB

Residual Noise, A weighted:
-93.73dB

Interchannel Isolation:
1kHz: -74.42dB
10kHz: -55.49dB
20kHz: -49.34dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

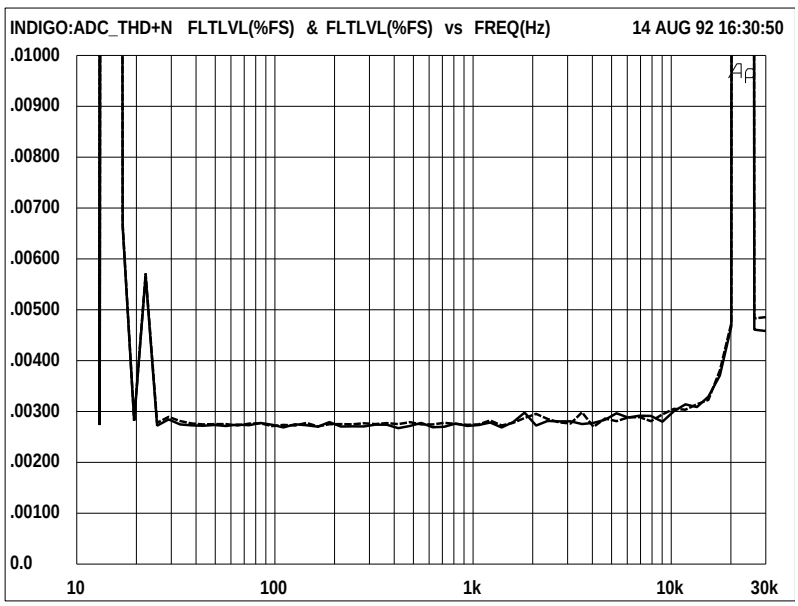
Impedance:
5kOhm nominal

Amplitude at Full Scale:
1Vpp to 10Vpp

Level Control:
2 independent digitally controlled analog attenuators

Analog to Digital Converter:
16 bit, Delta Sigma

Sampling Rates:
32kHz, 44.1kHz, 48kHz, serial digital input rate, divisors of above rates. 64x oversampling



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
1Vrms

Test Signal Output Impedance:
600 Ohms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO AUDIO PERFORMANCE

ANALOG STEREO LINE LEVEL OUTPUTS

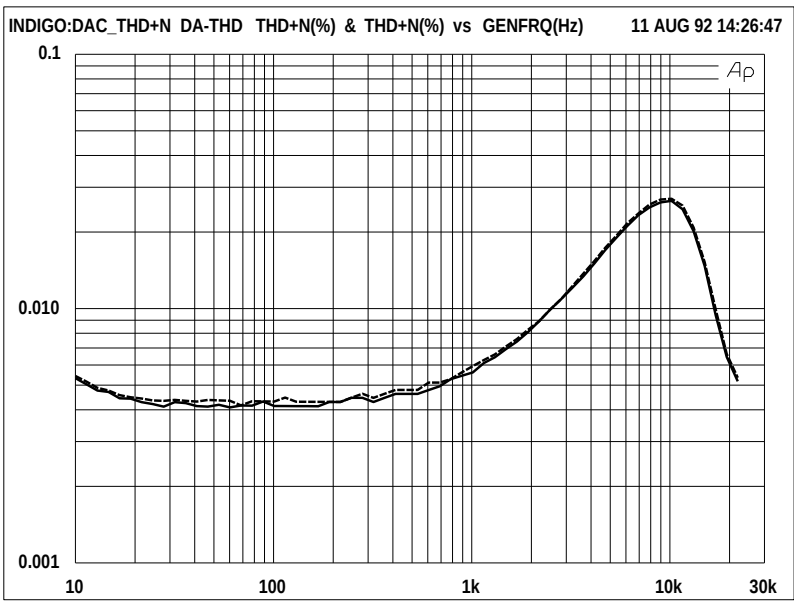
Frequency Response:
+/- 0.30dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0059% 20Hz to 20kHz maximum: 0.0270%
(max occurs at 10.19kHz)

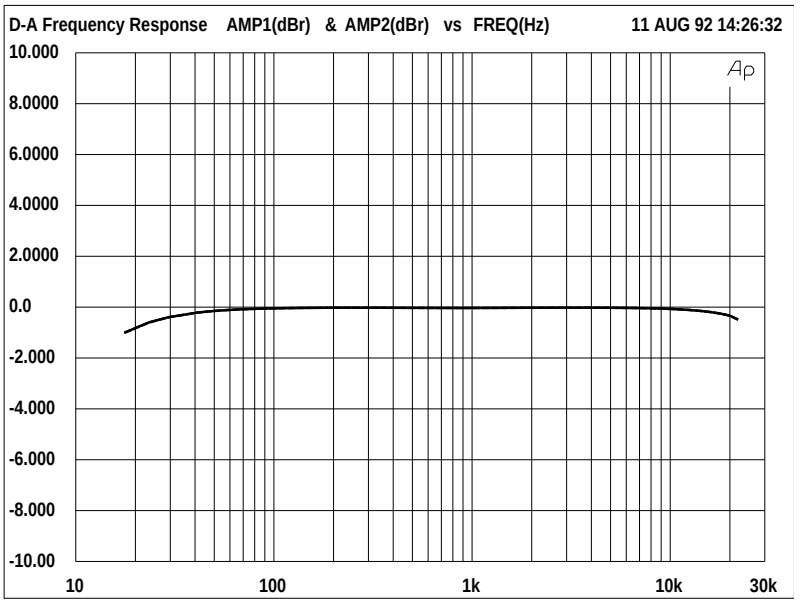
Residual Noise, Unweighted:
-87.52dB

Residual Noise, A weighted:
-91.04dB

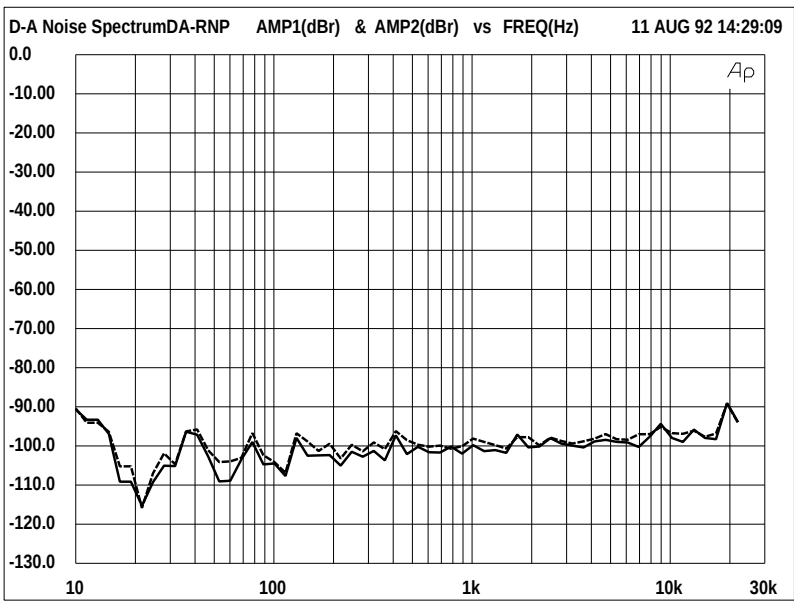
Interchannel Isolation:
1kHz: -74.90dB
10kHz: -63.75dB
20kHz: -59.74dB



TOTAL HARMONIC DISTORTION + NOISE



FREQUENCY RESPONSE



RESIDUAL NOISE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

Impedance:
600 Ohms nominal

Amplitude at Full Scale:
6.0Vpp

Digital Output Filter:
Linear Phase FIR
16 bit in, 18 bit out

Digital to Analog Converter:
18 bit
8x oversampling

Sampling Rates:
32kHz, 44.1kHz, 48kHz,
serial digital input rate,
divisors of above rates.

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale

Output Destination Impedance:
5 kOhms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO AUDIO PERFORMANCE

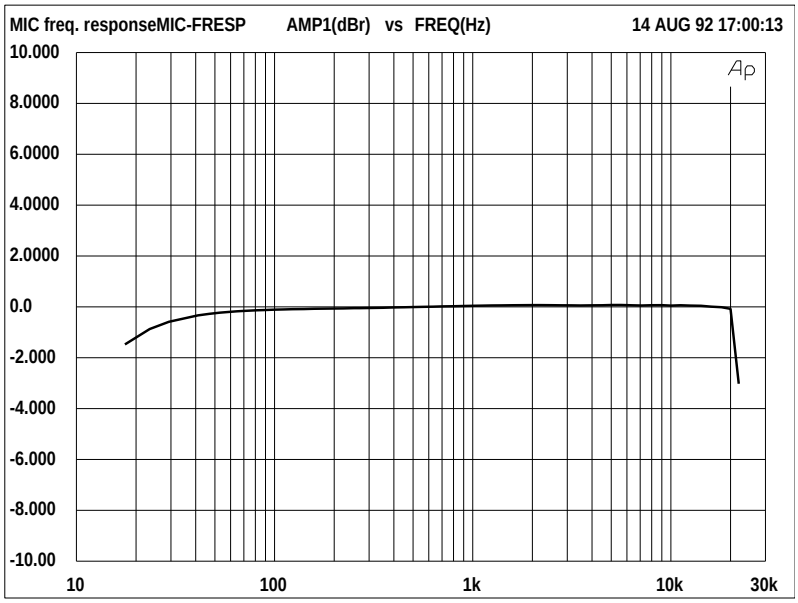
MICROPHONE INPUT

Frequency Response:
+/- 0.47dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0030% 20Hz to 20kHz maximum: 0.0102%
(max occurs at 22.3Hz)

Residual Noise, Unweighted:
-90.54dB

Residual Noise, A weighted:
-93.51dB



FREQUENCY RESPONSE

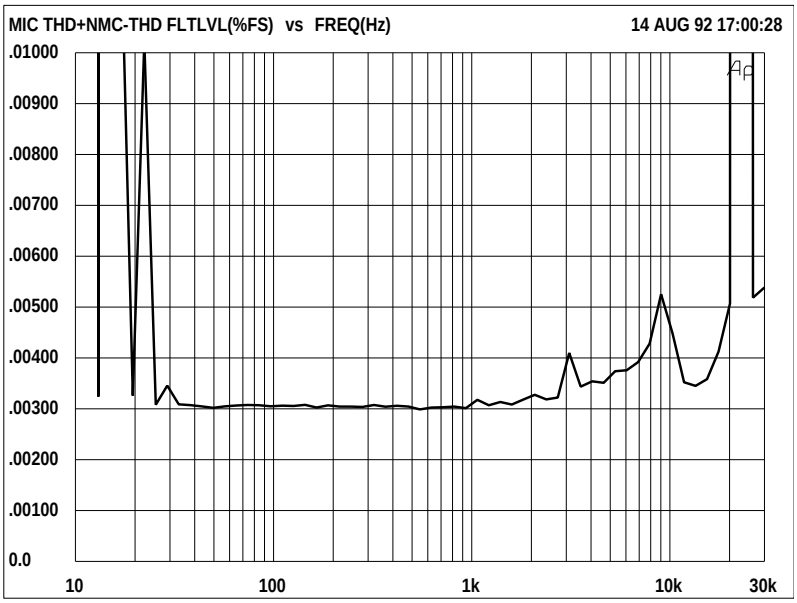
PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

Impedance:
2kOhm

Amplitude at Full Scale:
0.25Vpp to 2.5Vpp

Microphone Power Supply:
+3V DC, 1mA max



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
0.75Vrms

Test Signal Output Impedance:
600 Ohms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO AUDIO PERFORMANCE

STEREO HEADPHONE OUTPUT

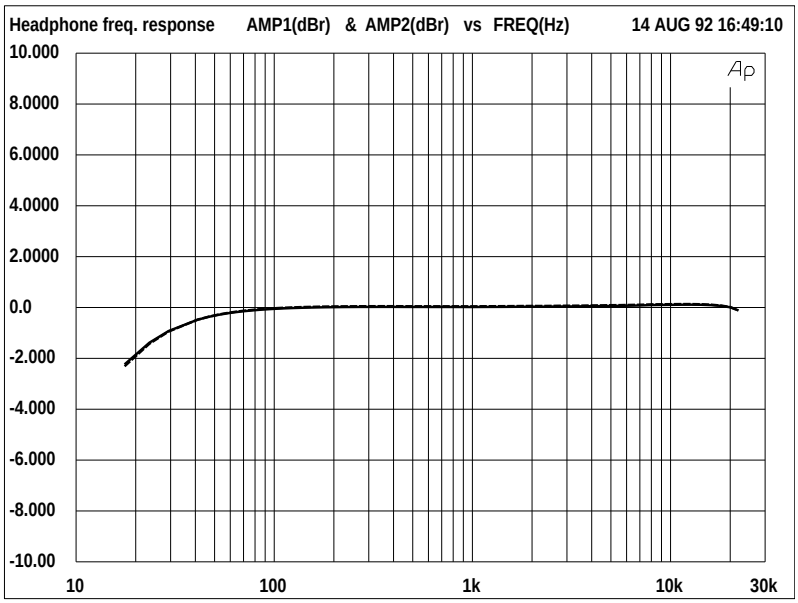
Frequency Response:
+/- 0.78dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0744% 20Hz to 20kHz maximum: 0.3809%
(max occurs at 6.94kHz)

Residual Noise, Unweighted:
-89.77dB

Residual Noise, A weighted:
-94.55dB

Interchannel Isolation:
1kHz: -50.06dB
10kHz: -39.07dB
20kHz: -35.09dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

Headphone Impedance:
16 Ohms

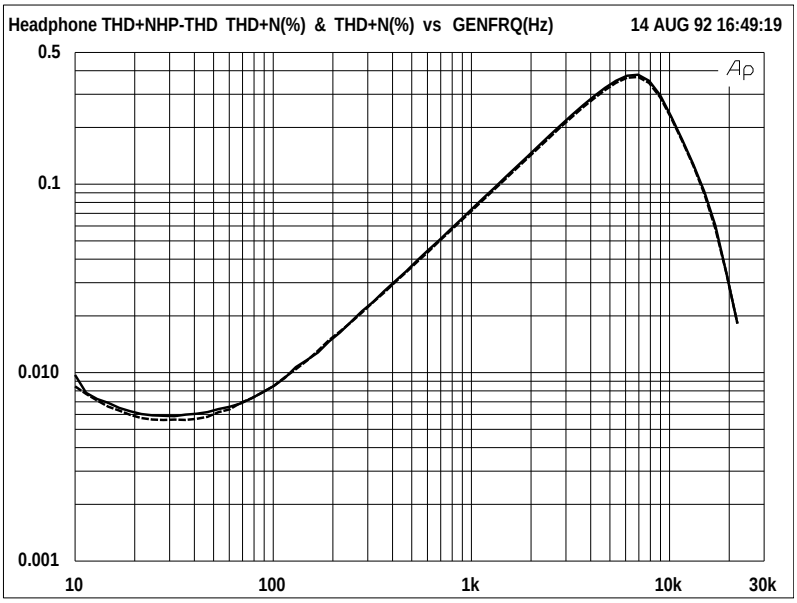
Headphone Level:
200mW into 32 Ohm load

Headphone and Speaker Level Control:
2 independent digitally controlled analog attenuators

Speaker:
2.6" diameter dynamic

Speaker Sound Pressure Level:
88dB/W

Speaker Output Level:
3W max, 1.5W nominal



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale

Output Destination Impedance:
150 Ohms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO2 AUDIO PERFORMANCE

ANALOG STEREO LINE LEVEL INPUTS

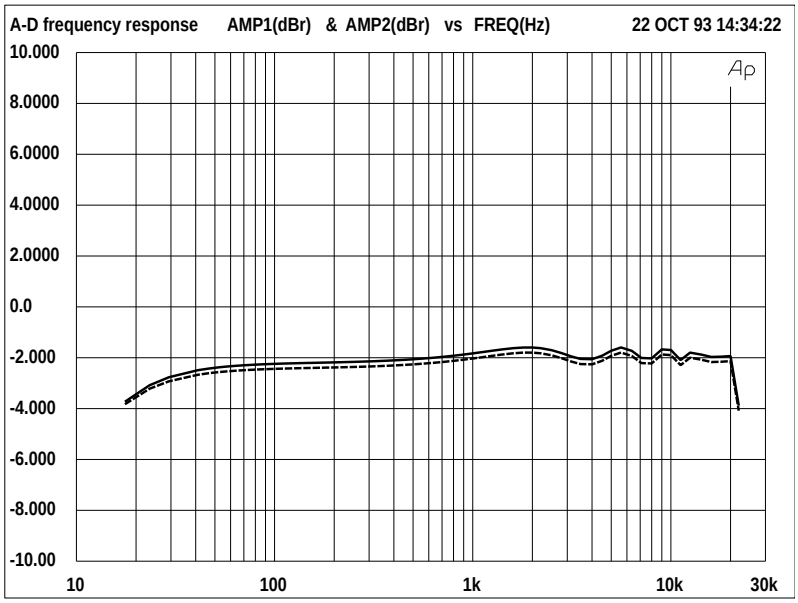
Frequency Response:
+/- 0.81dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: <0.006% 20Hz to 20kHz maximum: <0.007%

Residual Noise, Unweighted:
-86dB

Residual Noise, A weighted:
-88dB

Interchannel Isolation:
1kHz: -82dB
10kHz: -72dB
20kHz: -67dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

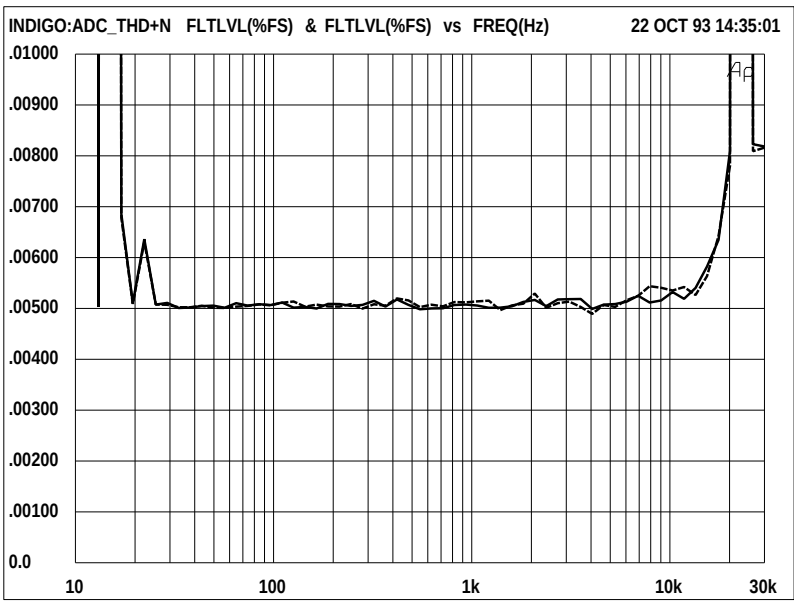
Impedance:
20kOhm nominal

Amplitude at Full Scale:
0.63Vpp to 8.4Vpp

Level Control:
2 2 independent digitally controlled amplifiers, internal to codecs

Analog to Digital Converter:
16 bit, Delta-Sigma

Sampling Rates:
32kHz, 44.1kHz, 48kHz, serial digital input rate, divisors of above rates.



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
1Vrms

Test Signal Output Impedance:
600 Ohms

Sampling Rate:
48kHz

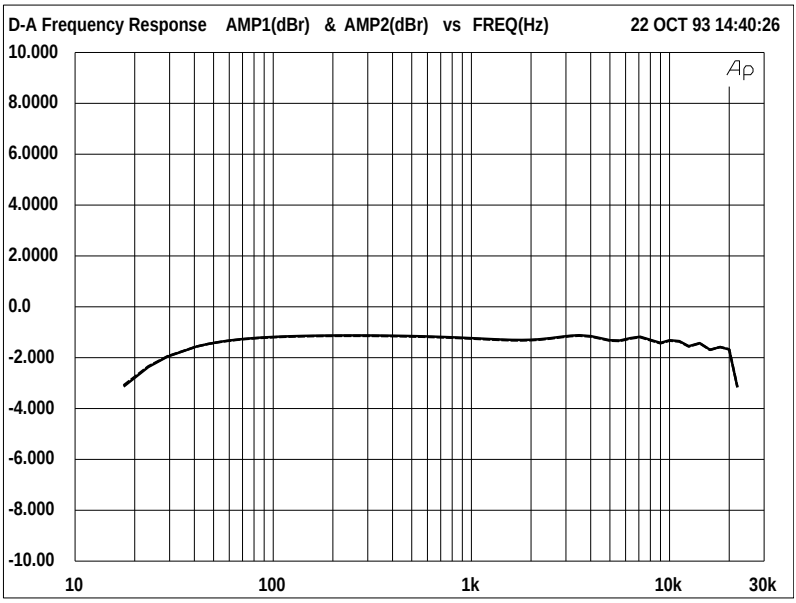
Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO2 AUDIO PERFORMANCE

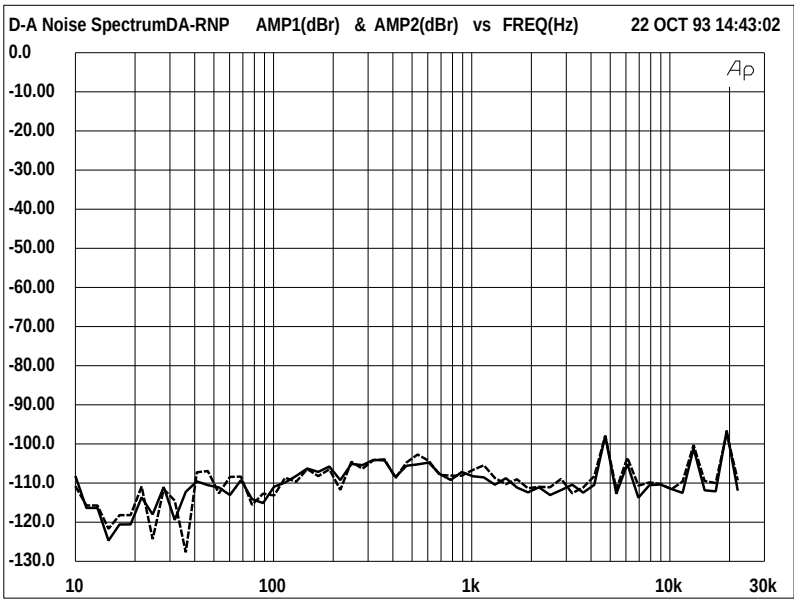
ANALOG STEREO LINE LEVEL OUTPUTS

Frequency Response:
+/- 1.2dB 20Hz to 20kHz
Total Harmonic Distortion + Noise:
<0.02% 20Hz to 20kHz
Residual Noise, Unweighted:
-81dB
Residual Noise, A weighted:
-85dB
Interchannel Isolation:
1kHz: -80dB
10kHz: -75dB
20kHz: -71dB

TOTAL HARMONIC DISTORTION + NOISE



FREQUENCY RESPONSE



RESIDUAL NOISE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone
Impedance:
600 Ohms nominal
Amplitude at Full Scale:
4.7Vpp
Sampling Rates:
32kHz, 44.1kHz, 48kHz, serial digital input rate, divisors of above rates.

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale
Output Destination Impedance:
5 kOhms
Sampling Rate:
48kHz
Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO2 AUDIO PERFORMANCE

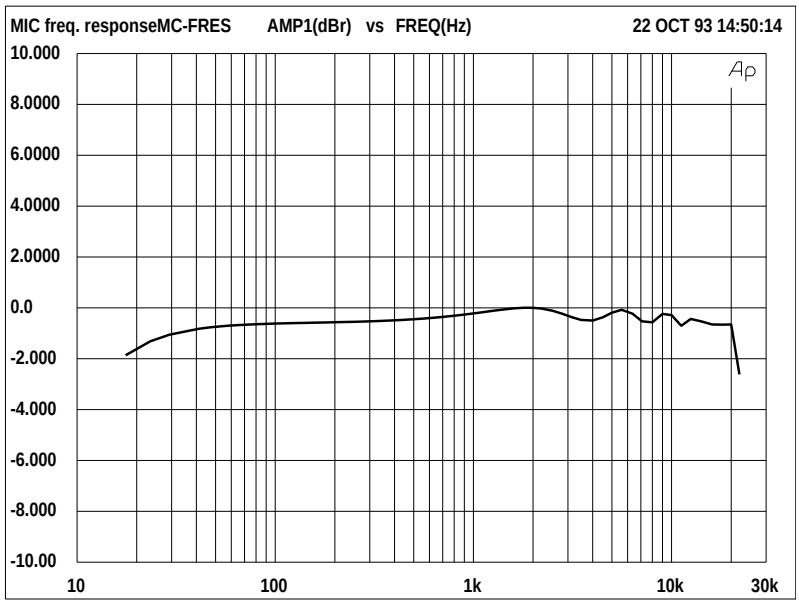
MICROPHONE INPUT

Frequency Response:
+/- 0.66dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0053% 20Hz to 20kHz maximum: 0.0067%
(max occurs at 17.5kHz)

Residual Noise, Unweighted:
-86dB

Residual Noise, A weighted:
-89dB



FREQUENCY RESPONSE

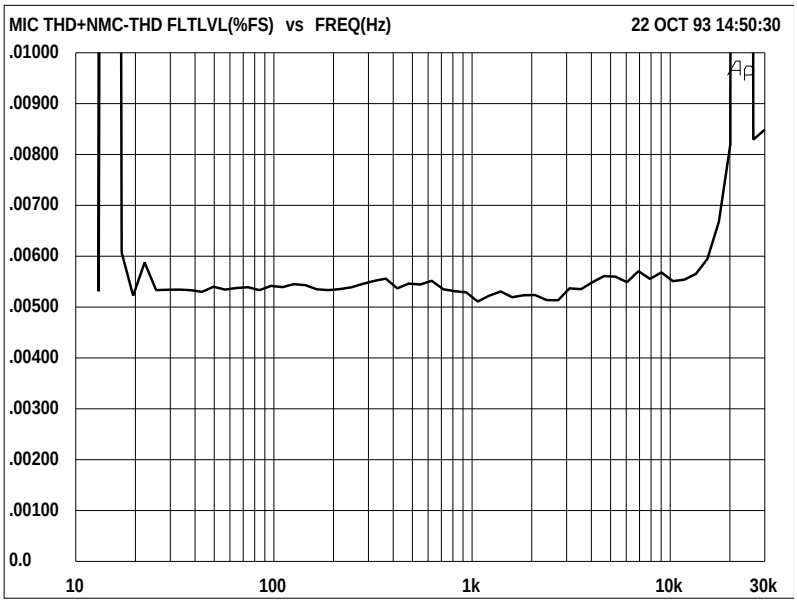
PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

Impedance:
1.5kOhm

Amplitude at Full Scale:
0.063Vpp to 0.84Vpp

Microphone Power Supply:
+3V DC, 1mA max



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
0.1 Vrms

Test Signal Output Impedance:
600 Ohms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDIGO2 AUDIO PERFORMANCE

STEREO HEADPHONE OUTPUT

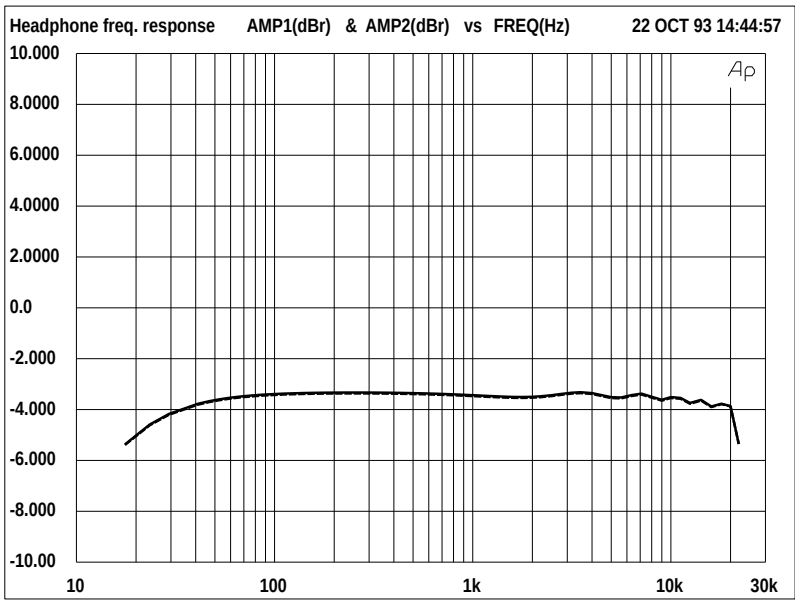
Frequency Response:
+/- 2.3dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.02% 20Hz to 20kHz maximum: 0.3%
(max occurs at 19.3kHz)

Residual Noise, Unweighted:
-88dB

Residual Noise, A weighted:
-90dB

Interchannel Isolation:
1kHz: -87dB
10kHz: -76dB
20kHz: -73dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

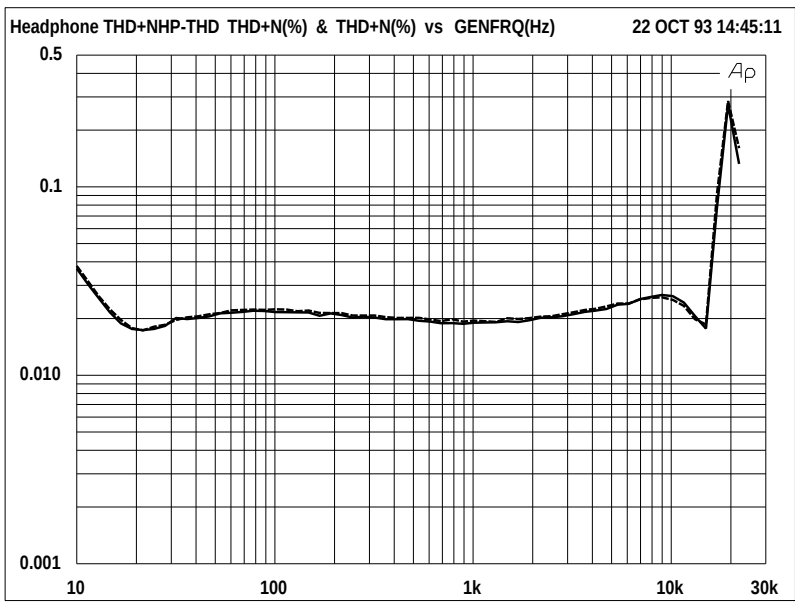
Headphone Impedance:
10 Ohms

Headphone Level:
57mW into 32 Ohm load

Headphone and Speaker Level Control:
2 independent digitally controlled analog attenuators

Speaker
70mm x 40mm

Speaker Sound Pressure Level:
80dB @ 1W, 1 meter



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale

Output Destination Impedance:
150 Ohms

Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDY AUDIO PERFORMANCE

ANALOG STEREO LINE LEVEL INPUTS

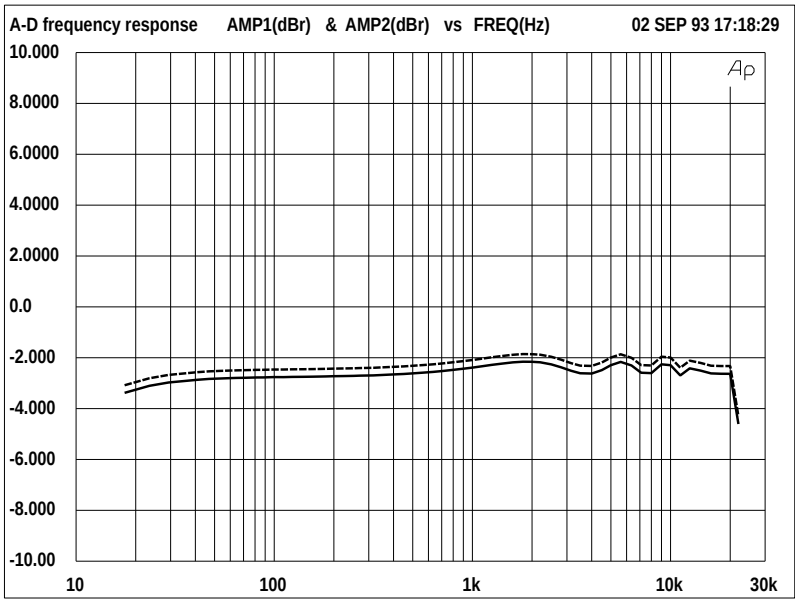
Frequency Response:
+/- 0.62dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.0063% 20Hz to 20kHz maximum: <0.009%

Residual Noise, Unweighted:
-84dB

Residual Noise, A weighted:
-87dB

Interchannel Isolation:
1kHz: -80dB
10kHz: -73dB
20kHz: -68dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

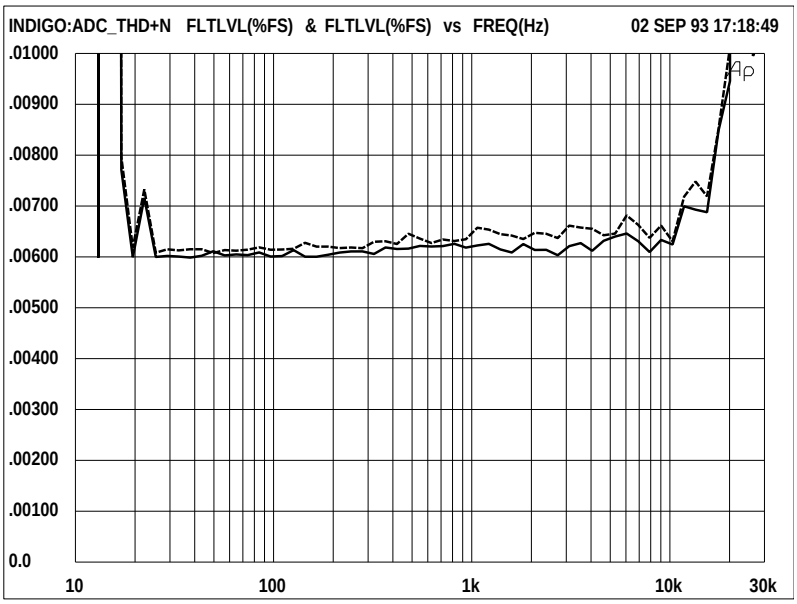
Impedance:
10kOhm nominal

Amplitude at Full Scale:
0.63Vpp to 8.4Vpp

Level Control:
2 independent digitally controlled amplifiers, internal to codecs

Analog to Digital Converter:
16 bit, Delta Sigma

Sampling Rates:
32kHz, 44.1kHz, 48kHz, serial digital input rate, divisors of above rates.



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
1Vrms

Test Signal Output Impedance:
600 Ohms

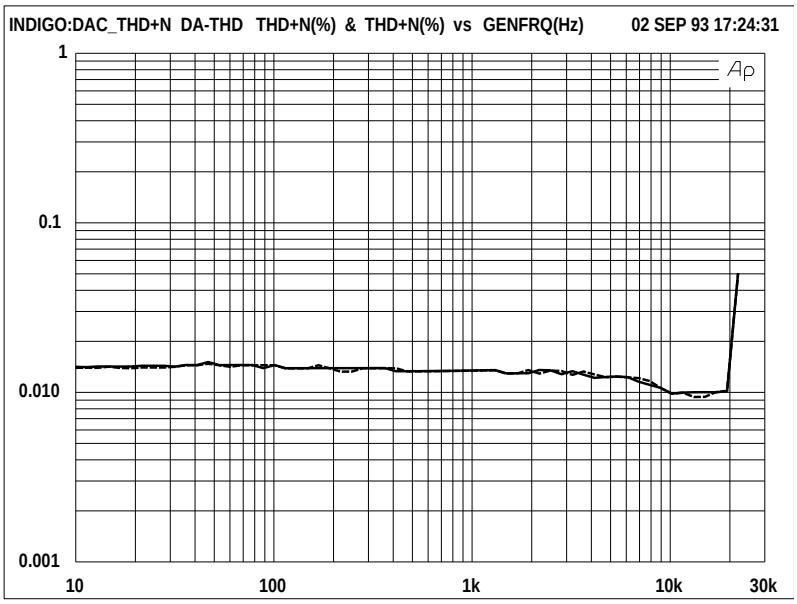
Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDY AUDIO PERFORMANCE

ANALOG STEREO LINE LEVEL OUTPUTS

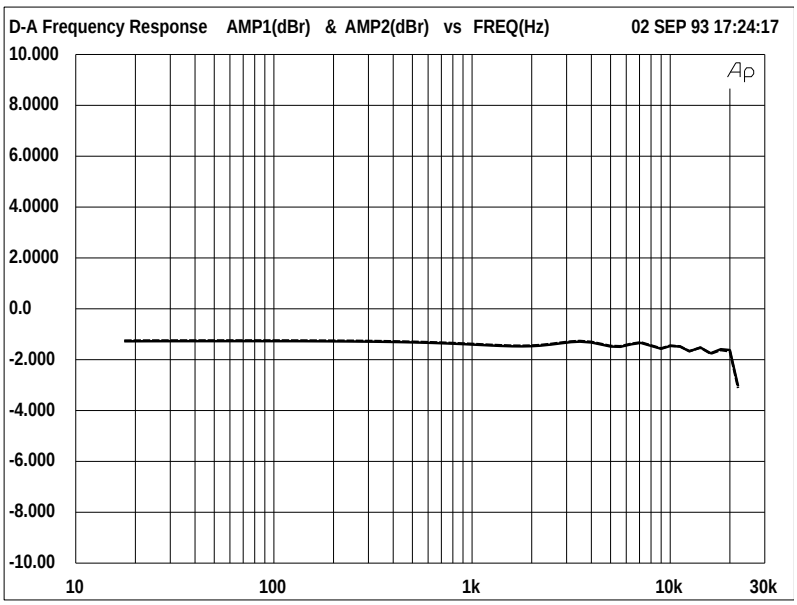
Frequency Response:
+/- 0.88dB 20Hz to 20kHz
Total Harmonic Distortion + Noise:
<0.02% 20Hz to 20kHz
Residual Noise, Unweighted:
-83dB
Residual Noise, A weighted:
-86dB
Interchannel Isolation:
1kHz: -82dB
10kHz: -68dB
20kHz: -64dB



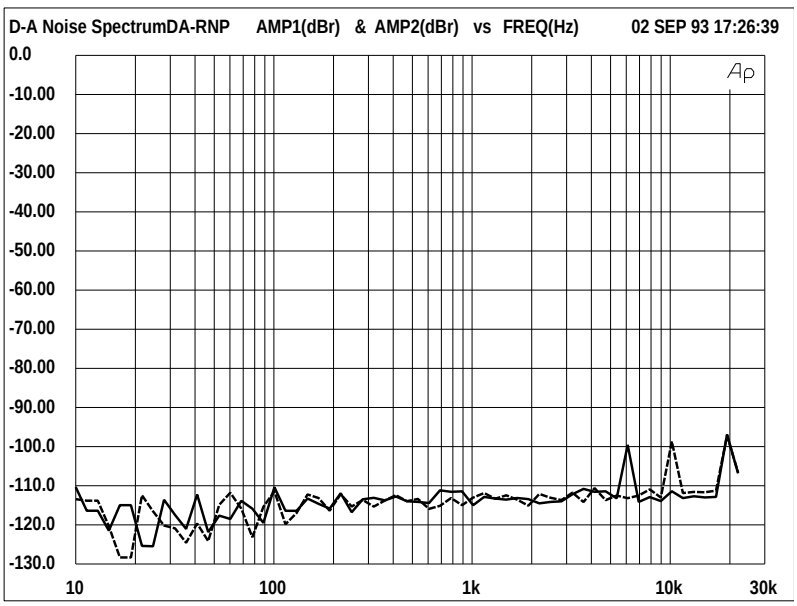
TOTAL HARMONIC DISTORTION + NOISE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone
Impedance:
600 Ohms nominal
Amplitude at Full Scale:
4.7Vpp
Sampling Rates:
32kHz, 44.1kHz, 48kHz, serial digital input rate, divisors of above rates.



FREQUENCY RESPONSE



RESIDUAL NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale
Output Destination Impedance:
5 kOhms
Sampling Rate:
48kHz
Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDY AUDIO PERFORMANCE

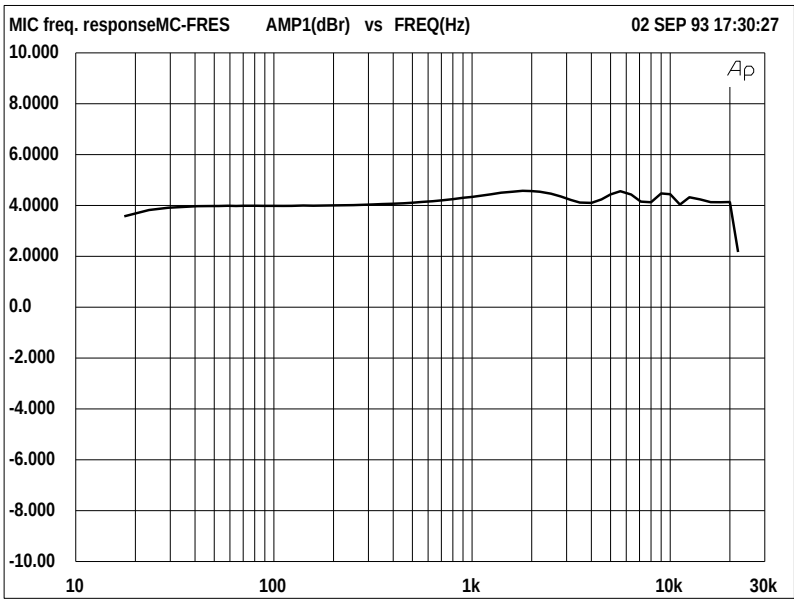
MICROPHONE INPUT

Frequency Response:
+/- 0.38dB 20Hz to 20kHz

Total Harmonic Distortion + Noise:
At 1kHz: 0.01% 20Hz to 20kHz maximum: 0.013%
(max occurs at 17.5kHz)

Residual Noise, Unweighted:
-80dB

Residual Noise, A weighted:
-83dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone

Impedance:
2kOhm

Amplitude at Full Scale:
0.063Vpp to 0.84Vpp

Microphone Power Supply:
+3V DC, 1mA max

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Analog Test Signal Level:
0.1Vrms

Test Signal Output Impedance:
600 Ohms

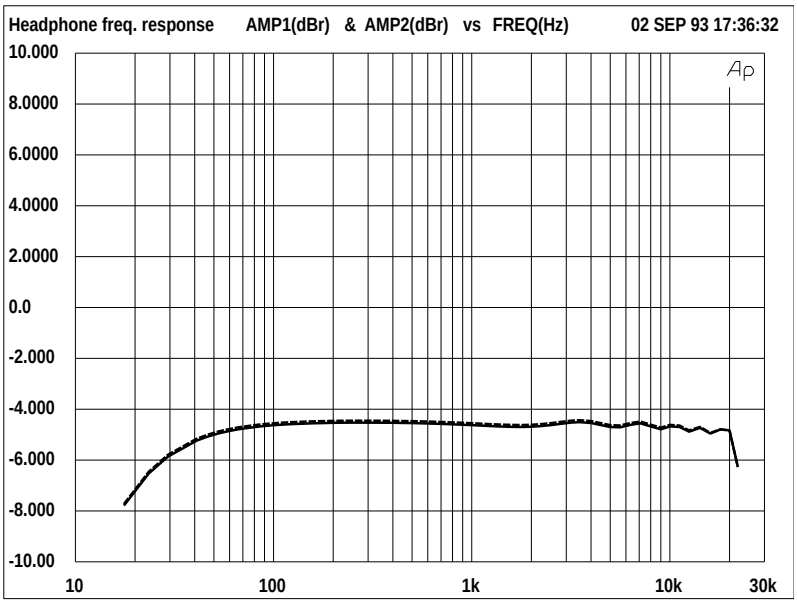
Sampling Rate:
48kHz

Measurement Bandwidth:
17Hz to 22kHz, Unweighted

INDY AUDIO PERFORMANCE

STEREO HEADPHONE OUTPUT

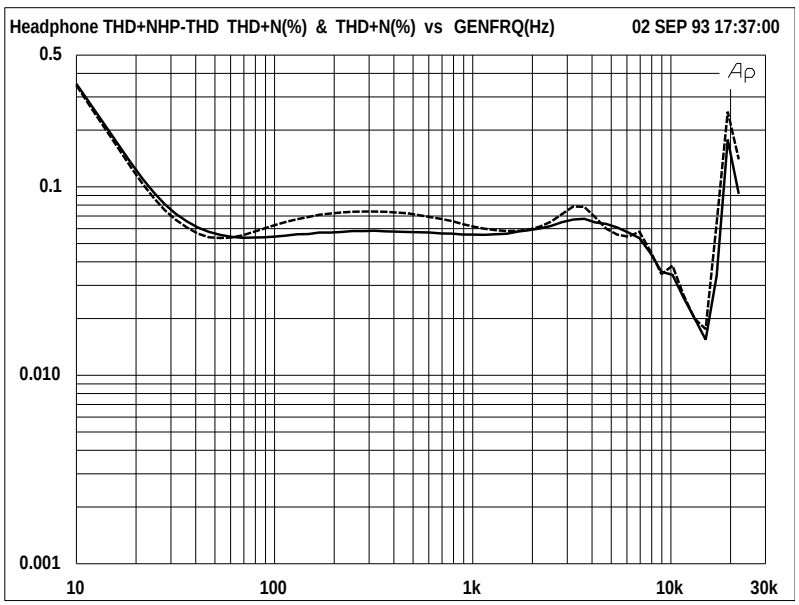
Frequency Response:
+/- 3.3dB 20Hz to 20kHz
Total Harmonic Distortion + Noise:
At 1kHz: 0.06% 20Hz to 20kHz maximum: 0.25%
(max occurs at 19.3kHz)
Residual Noise, Unweighted:
-90dB
Residual Noise, A weighted:
-93dB
Interchannel Isolation:
1kHz: -80dB
10kHz: -61dB
20kHz: -56dB



FREQUENCY RESPONSE

PHYSICAL SPECIFICATIONS

Connector:
Single-ended 3.5mm stereo phone
Headphone Impedance:
10 Ohms
Headphone Level:
57mW into 32 Ohm load
Headphone and Speaker Level Control:
2 independent digitally controlled analog attenuators
Speaker
70mm x 40mm
Speaker Sound Pressure Level:
80dB @ 1W, 1 meter



TOTAL HARMONIC DISTORTION + NOISE

TEST CONDITIONS

Unless otherwise stated, all parameters are measured under the following conditions:

Digital Test Signal Level:
100% of full scale
Output Destination Impedance:
150 Ohms
Sampling Rate:
48kHz
Measurement Bandwidth:
17Hz to 22kHz, Unweighted

DIGITAL COAXIAL SERIAL INPUT/OUTPUT

Connector:
Single ended 3.5mm stereo phone
Input Impedance:
75 Ohms, transformer coupled
Input Level:
0.5Vpp nominal
Input Sample Rates:
30kHz to 50kHz
Output Impedance:
75 Ohms, transformer coupled
Output Level:
0.5Vpp into 75 Ohm load
Output Sample Rates:
32kHz, 44.1kHz, 48kHz,
serial input sample rate,
divisors of above rates.
Resolution:
Supports up to 24 bits per sample
Coding:
AES-3, IEC-958