

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

ANALOG STEREO LINE LEVEL INPUTS

INDIGO AUDIO PERFORMANCE

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

5kOhm nominal

Amplitude at Full Scale:

1Vpp to 10Vpp

Level Control:

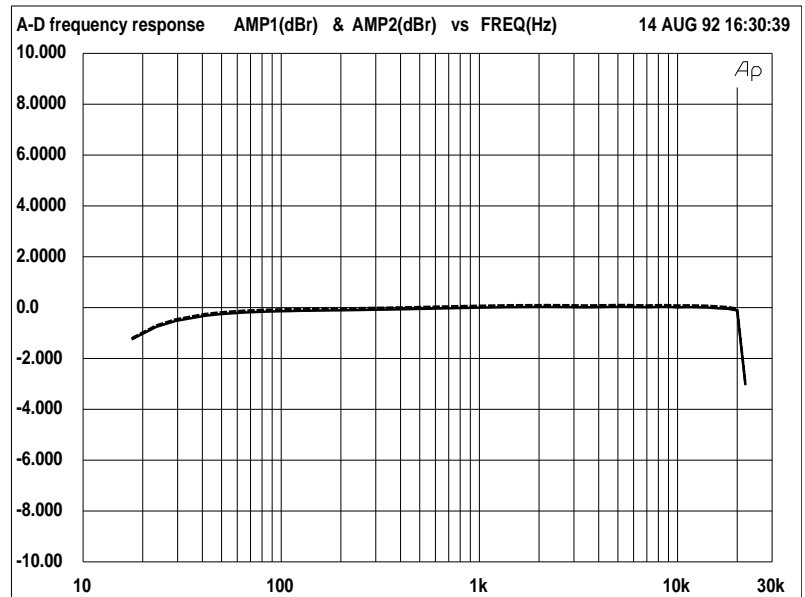
2 independent digitally
controlled analog attenuators

Analog to Digital Converter:

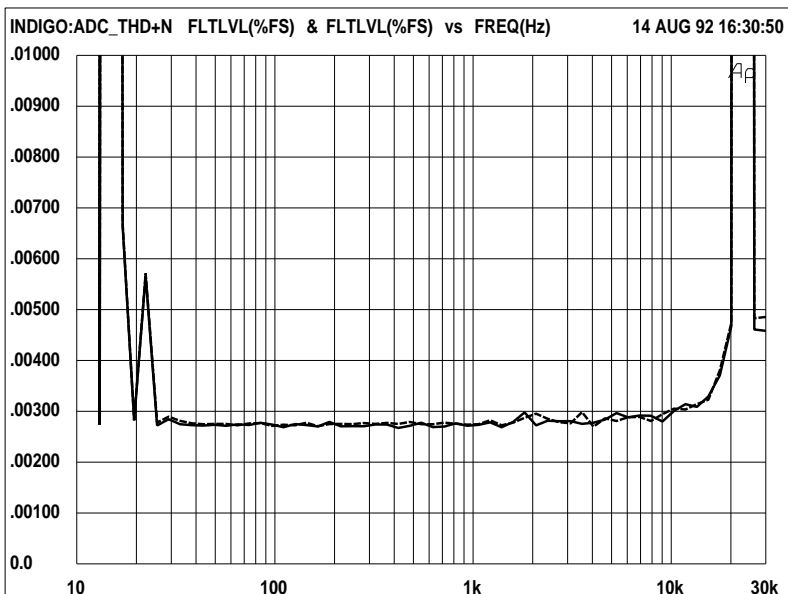
16 bit, Delta Sigma

Sampling Rates:

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



FREQUENCY RESPONSE



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

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:

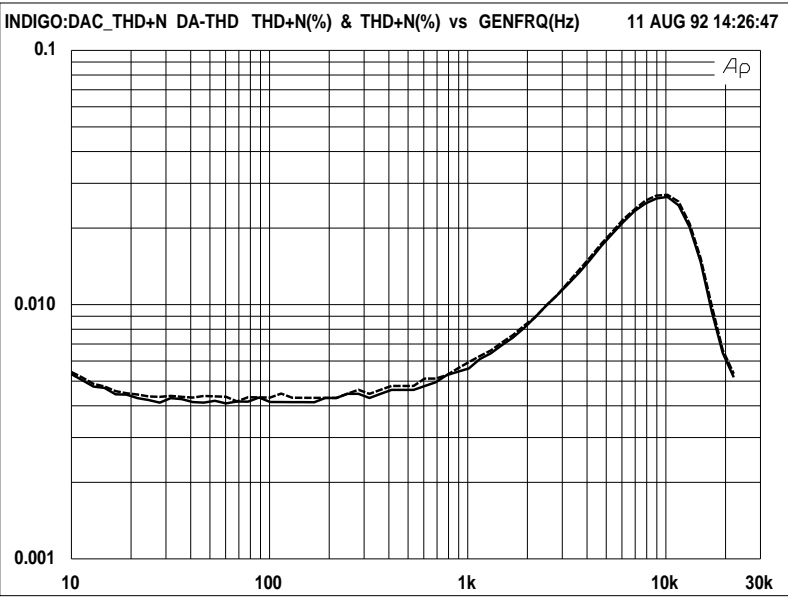
-87.52dB

Residual Noise, A weighted:

-91.04dB

Interchannel Isolation:

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



TOTAL HARMONIC DISTORTION + NOISE

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

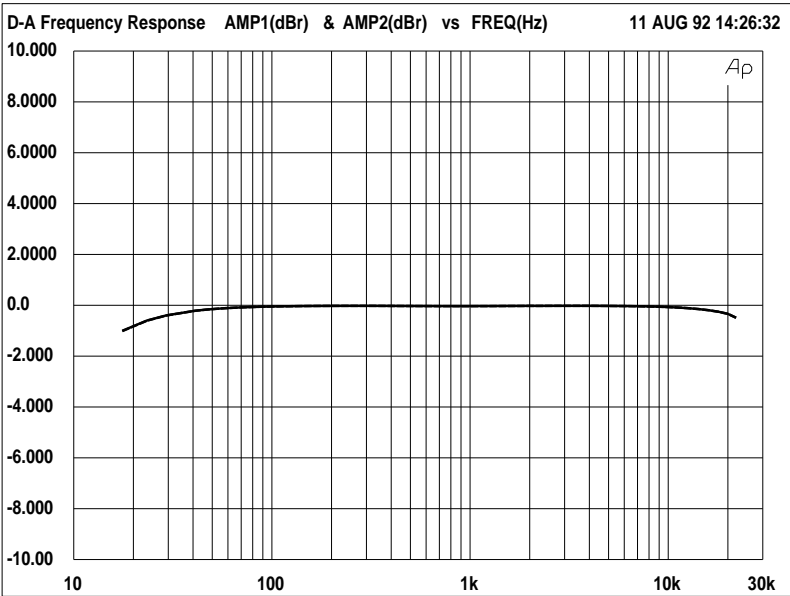
Digital to Analog Converter:

18 bit
8x oversampling

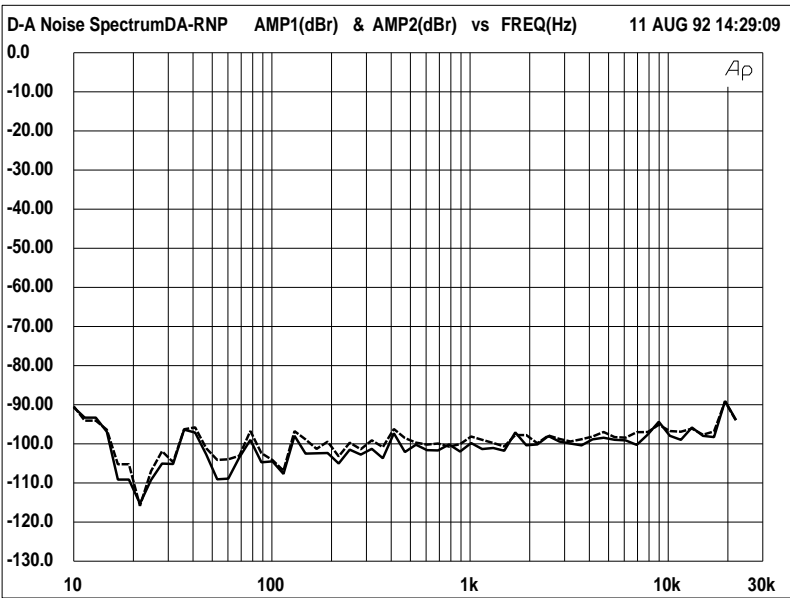
Sampling Rates:

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

INDIGO AUDIO
PERFORMANCE



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

MICROPHONE INPUT

INDIGO AUDIO
PERFORMANCE

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

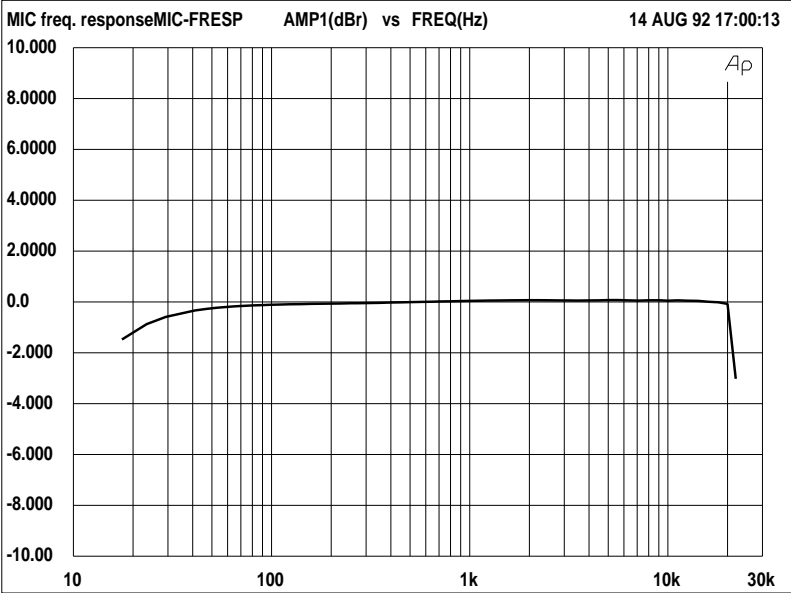
2kOhm

Amplitude at Full Scale:

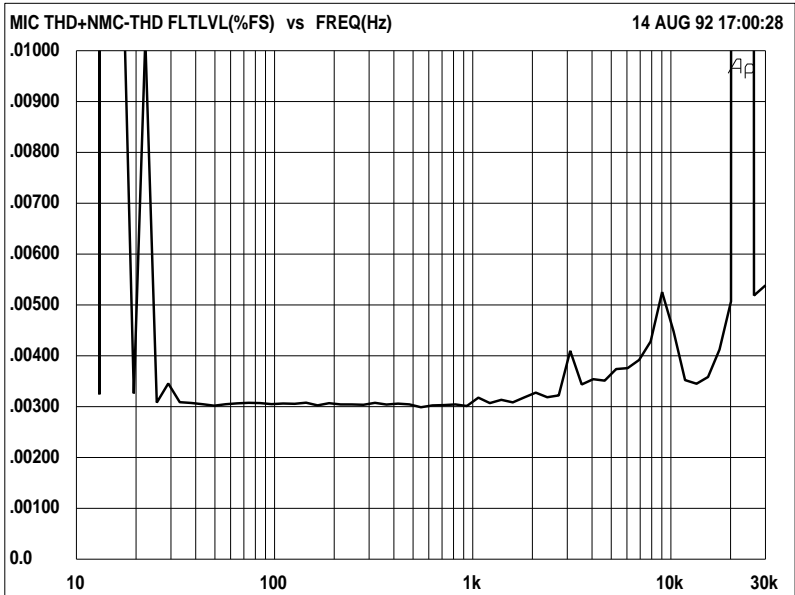
0.25Vpp to 2.5Vpp

Microphone Power Supply:

+3V DC, 1mA max



FREQUENCY RESPONSE



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

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

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

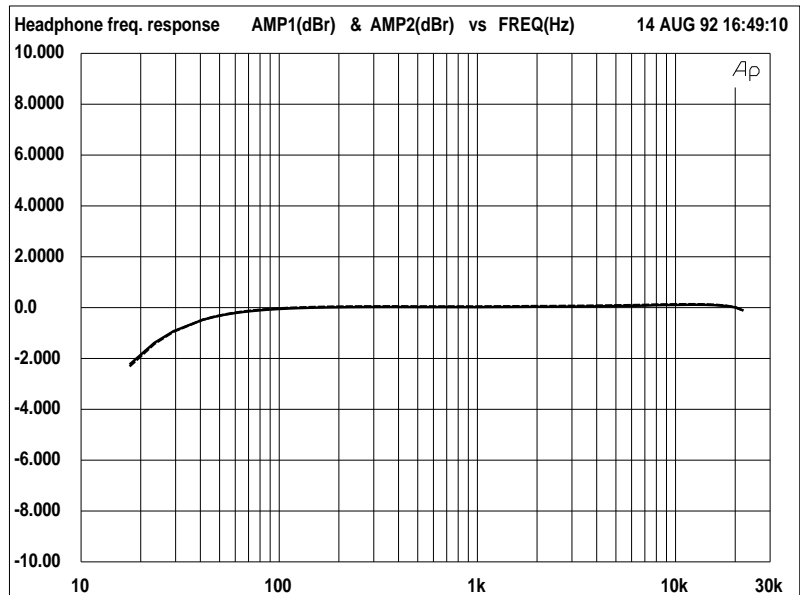
Speaker Sound Pressure Level:

88dB/W

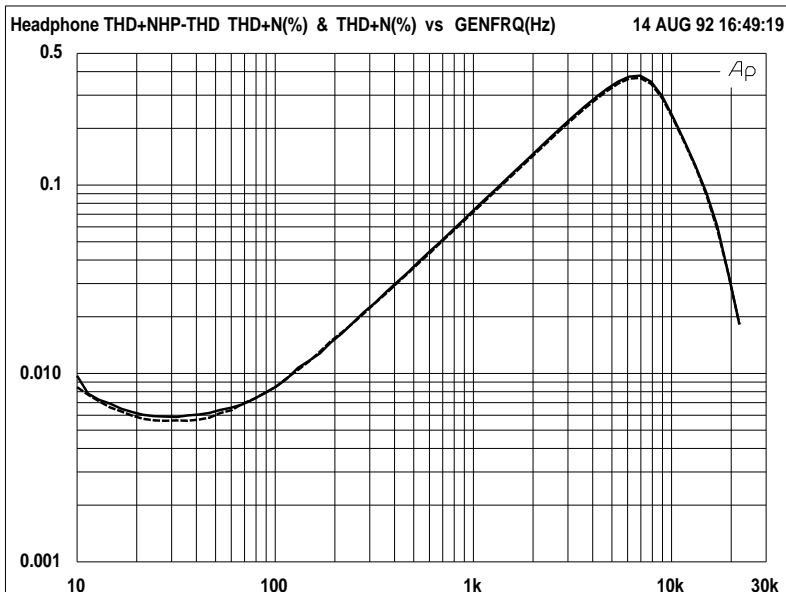
Speaker Output Level:

3W max, 1.5W nominal

INDIGO AUDIO PERFORMANCE



FREQUENCY RESPONSE



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

ANALOG STEREO LINE LEVEL INPUTS

INDIGO2 AUDIO PERFORMANCE

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

20kOhm nominal

Amplitude at Full Scale:

0.63Vpp to 8.4Vpp

Level Control:

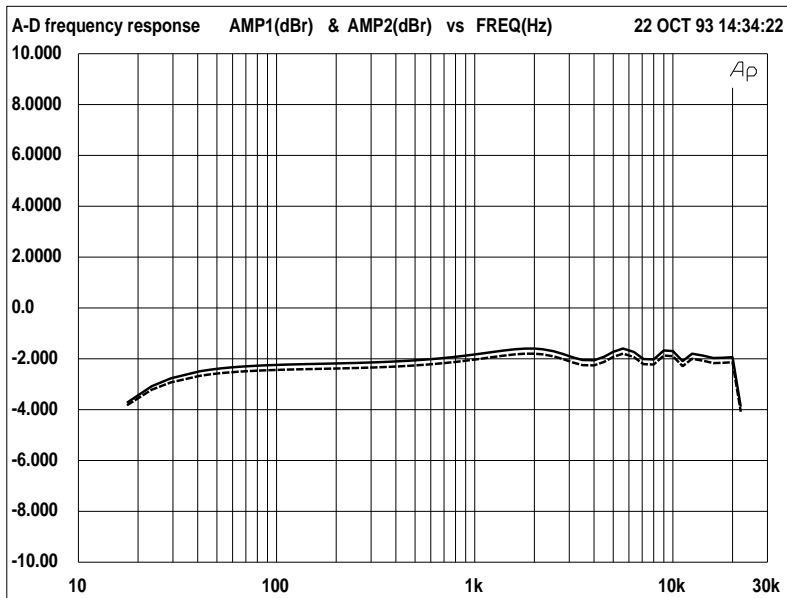
2 2 independent digitally
controlled amplifiers,
internal to codecs

Analog to Digital Converter:

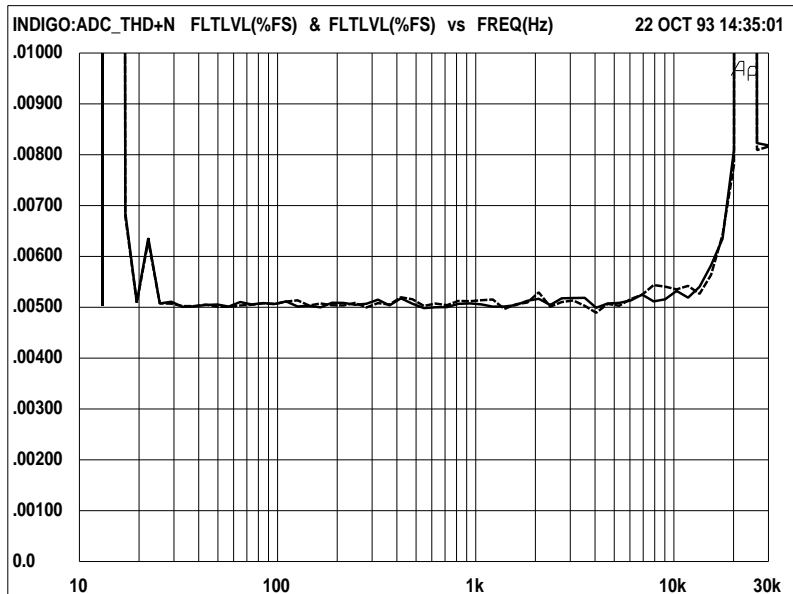
16 bit, Delta-Sigma

Sampling Rates:

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



FREQUENCY RESPONSE



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

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:

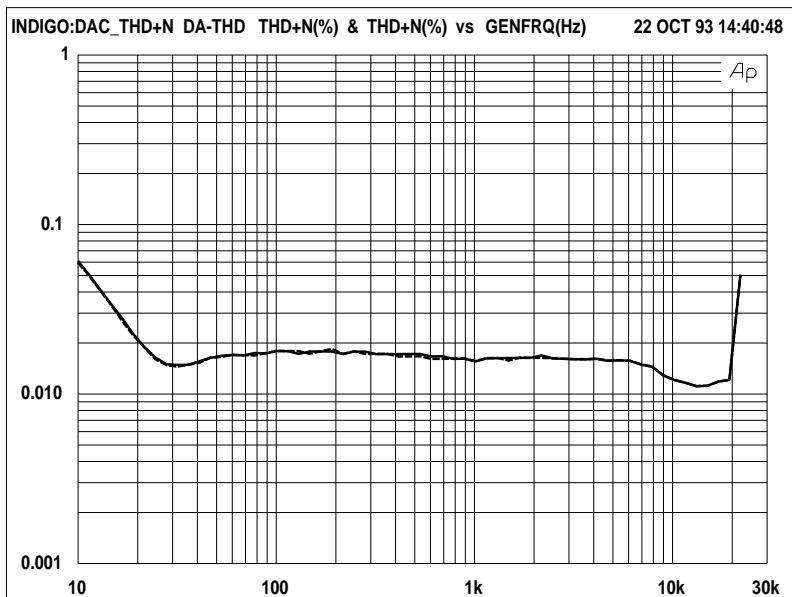
-85dB

Interchannel Isolation:

1kHz: -80dB

10kHz: -75dB

20kHz: -71dB



TOTAL HARMONIC DISTORTION + NOISE

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

600 Ohms nominal

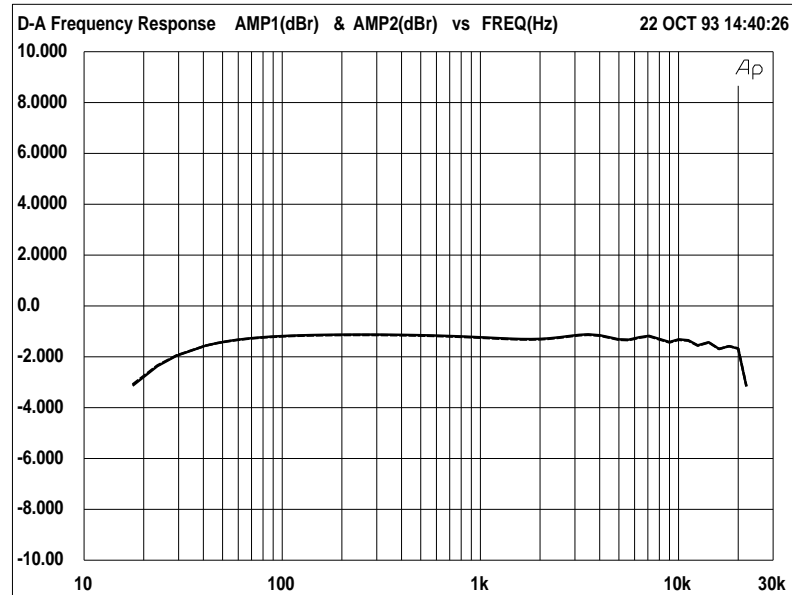
Amplitude at Full Scale:

4.7Vpp

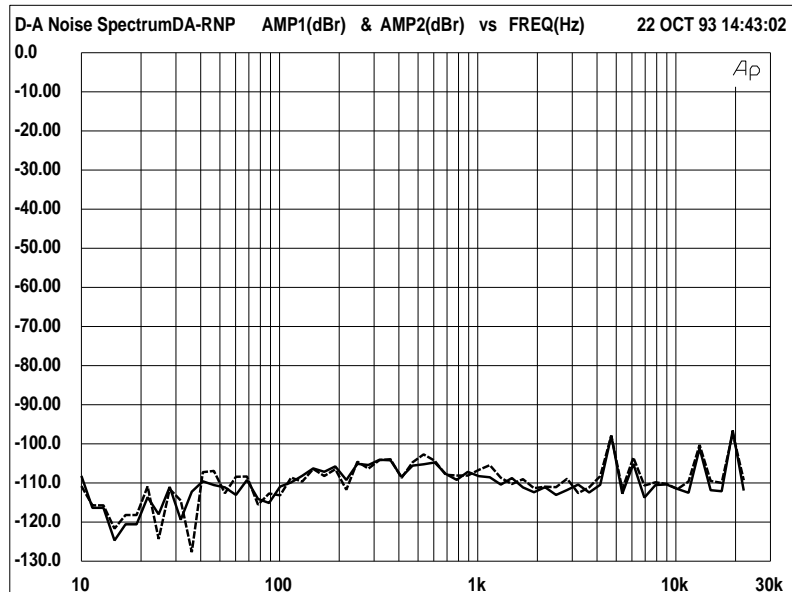
Sampling Rates:

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

INDIGO2 AUDIO PERFORMANCE



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

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

1.5kOhm

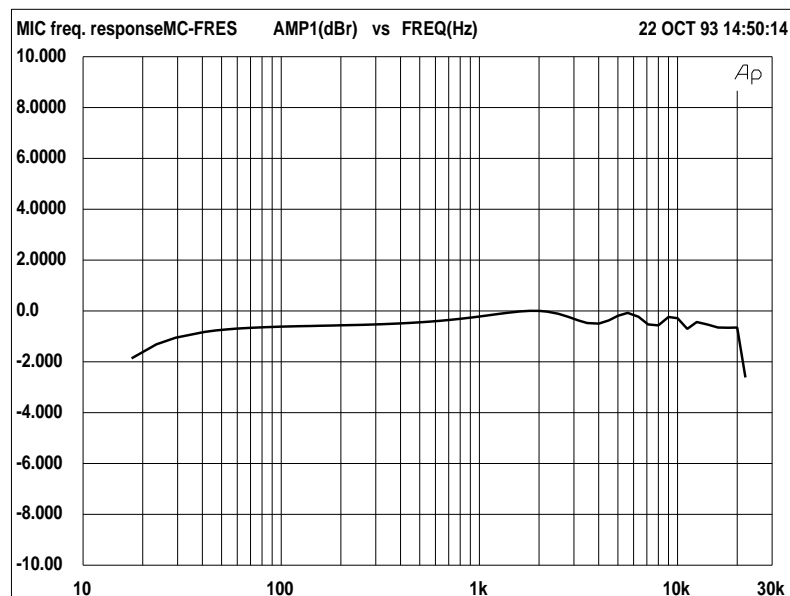
Amplitude at Full Scale:

0.063Vpp to 0.84Vpp

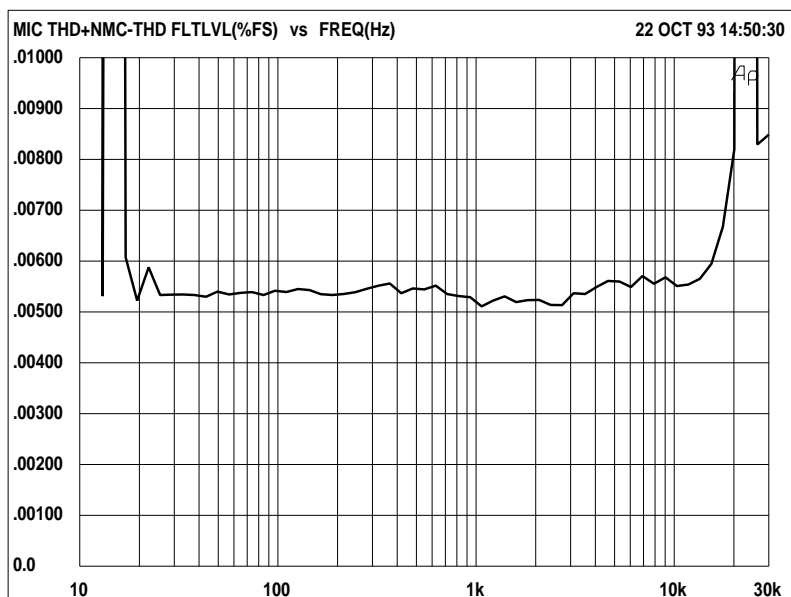
Microphone Power Supply:

+3V DC, 1mA max

INDIGO2 AUDIO PERFORMANCE



FREQUENCY RESPONSE



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

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

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

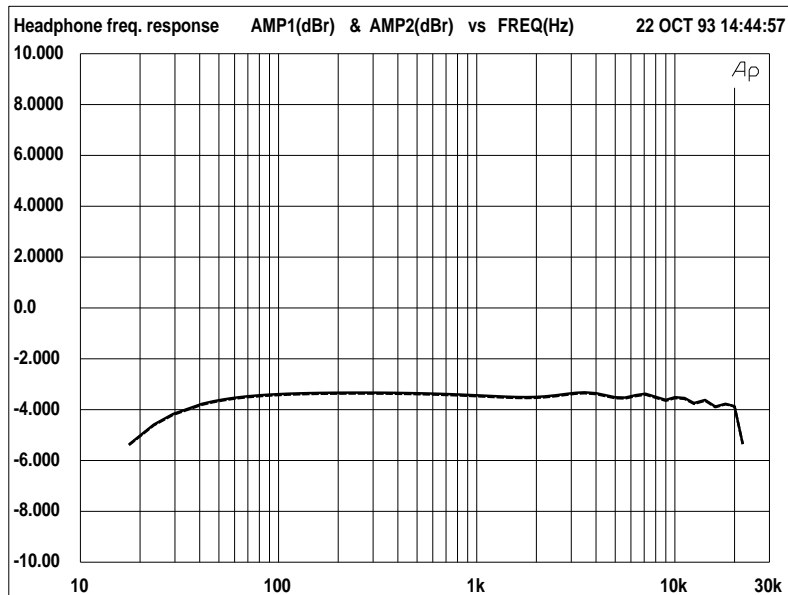
Speaker

70mm x 40mm

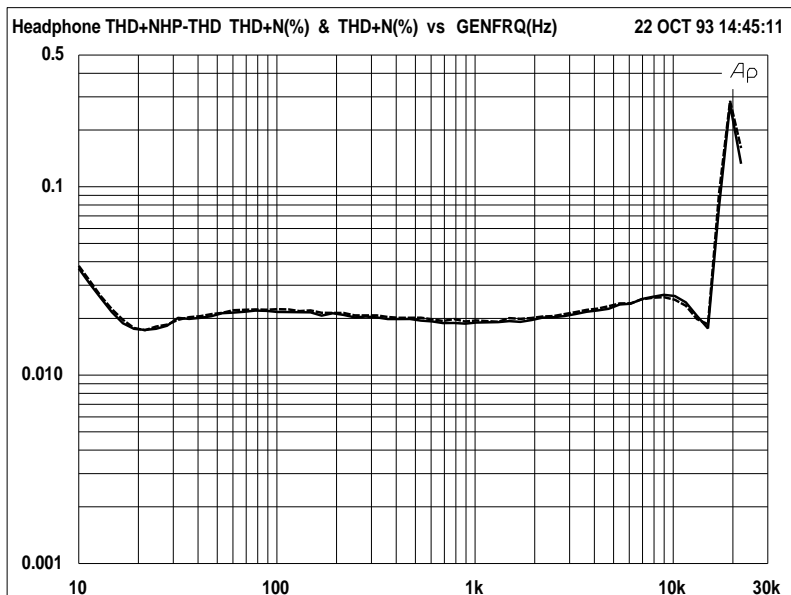
Speaker Sound Pressure Level:

80dB @ 1W, 1 meter

INDIGO2 AUDIO PERFORMANCE



FREQUENCY RESPONSE



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

ANALOG STEREO LINE LEVEL INPUTS

INDY AUDIO PERFORMANCE

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

10kOhm nominal

Amplitude at Full Scale:

0.63Vpp to 8.4Vpp

Level Control:

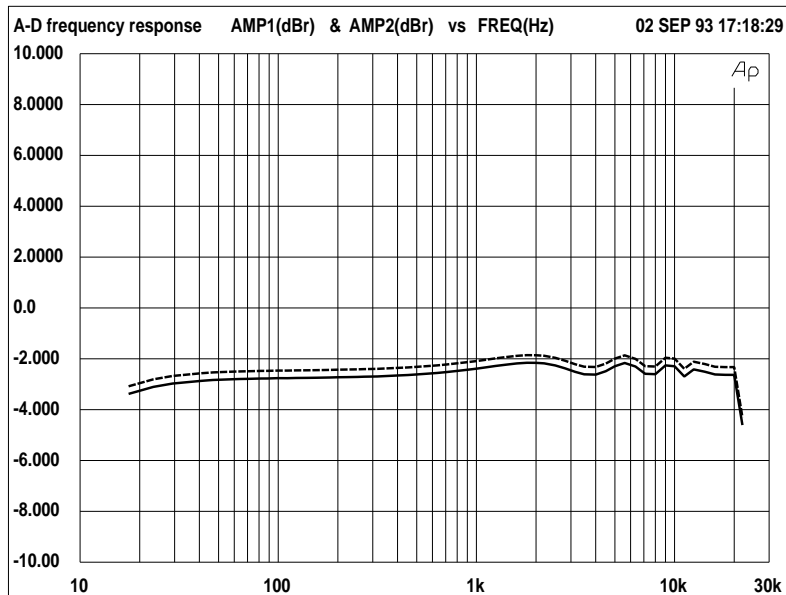
2 independent digitally
controlled amplifiers,
internal to codecs

Analog to Digital Converter:

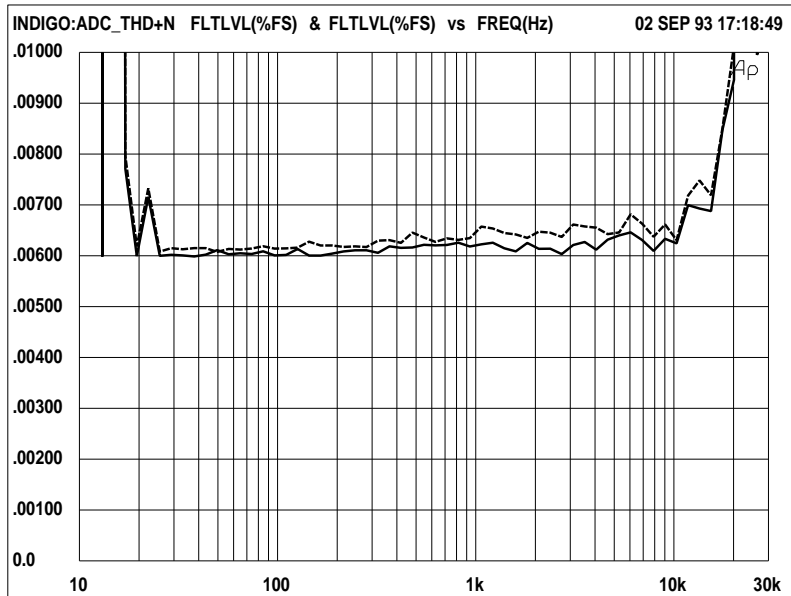
16 bit, Delta Sigma

Sampling Rates:

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



FREQUENCY RESPONSE



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

ANALOG STEREO LINE LEVEL OUTPUTS

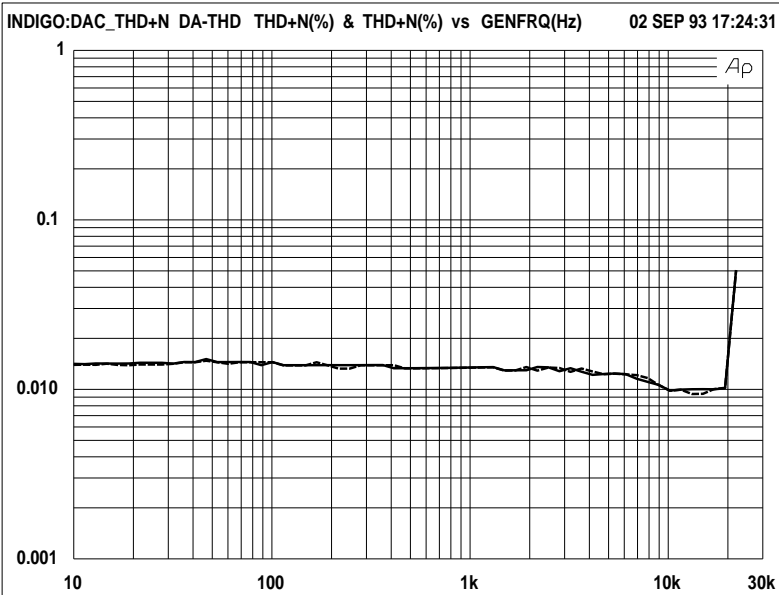
Frequency Response:
+/- 0.88dB 20Hz to 20kHz

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

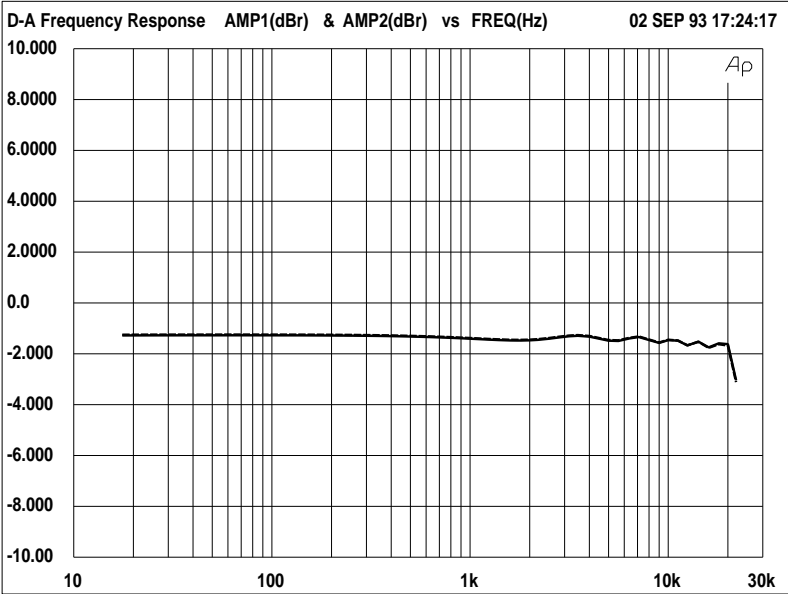
Connector:
Single-ended 3.5mm stereo
phone

Impedance:
600 Ohms nominal

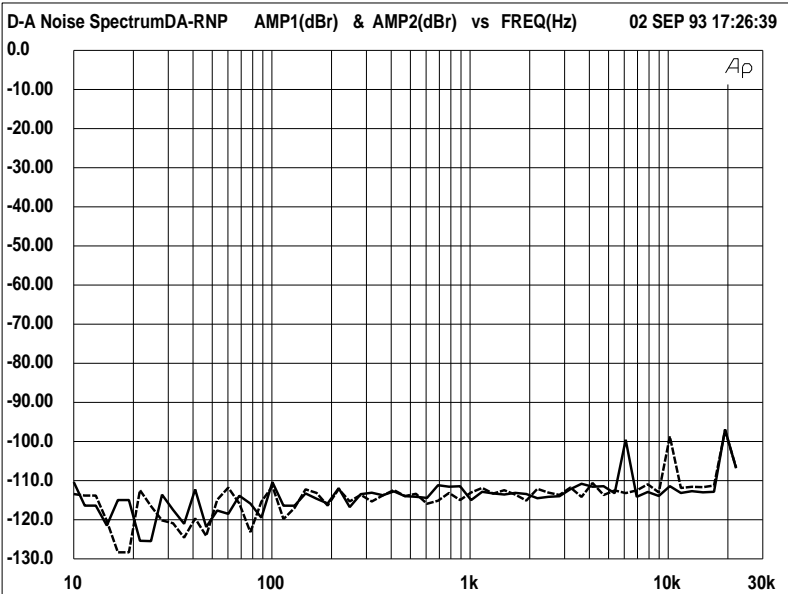
Amplitude at Full Scale:
4.7Vpp

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

**INDY AUDIO
PERFORMANCE**



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

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

PHYSICAL SPECIFICATIONS

Connector:

Single-ended 3.5mm stereo
phone

Impedance:

2kOhm

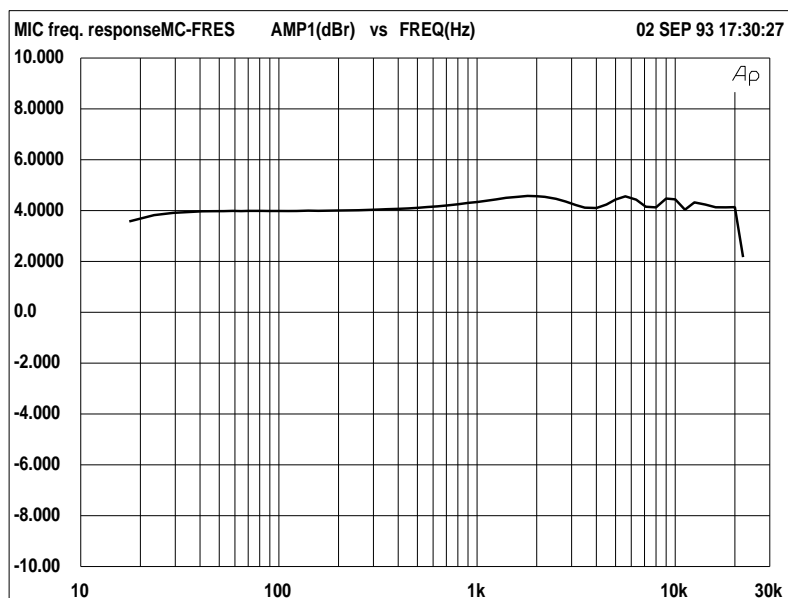
Amplitude at Full Scale:

0.063Vpp to 0.84Vpp

Microphone Power Supply:

+3V DC, 1mA max

INDY AUDIO PERFORMANCE



FREQUENCY RESPONSE

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

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

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

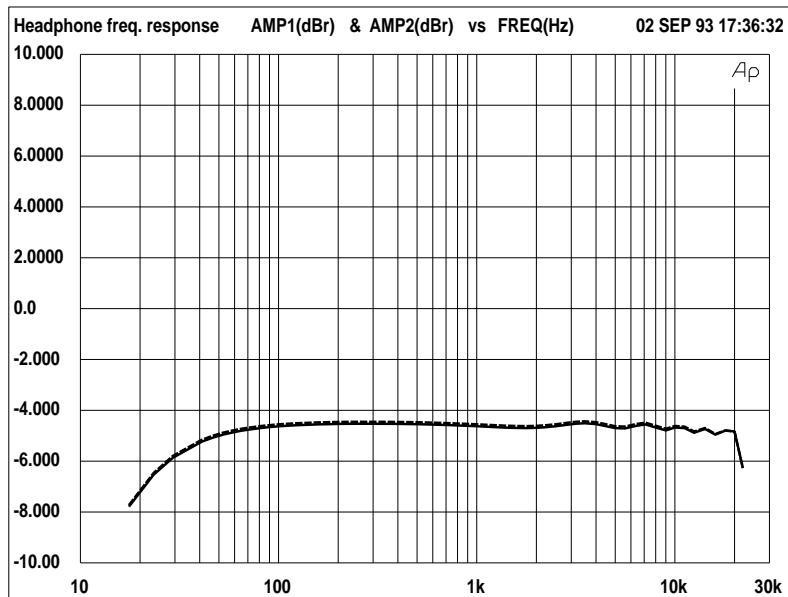
Speaker

70mm x 40mm

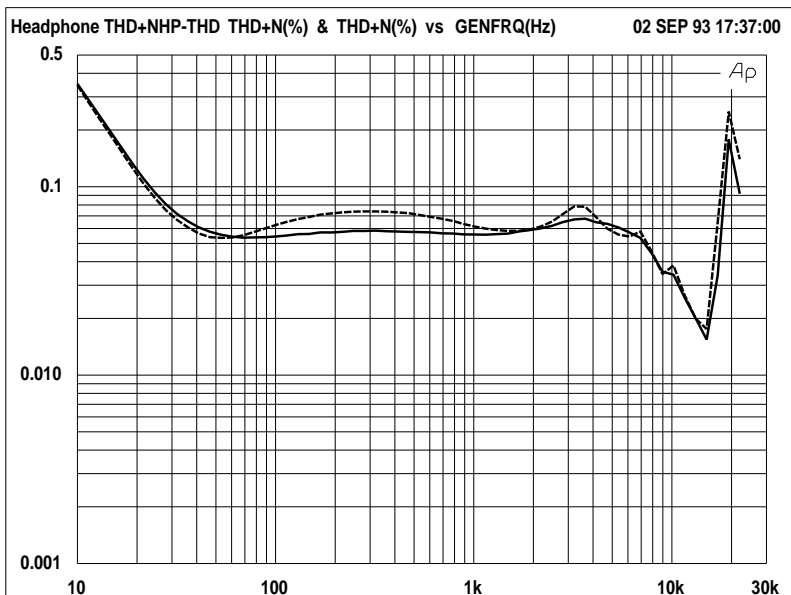
Speaker Sound Pressure Level:

80dB @ 1W, 1 meter

INDY AUDIO PERFORMANCE



FREQUENCY RESPONSE



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