



Xonar Essence STX

Audio Precision Test Report

Version 1.0
2008/10/6

- Disclaimer: The information and contents contained in this test report are for Xonar Essence STX user's reference only and may not be altered in any manner. Test results may vary with different testing environment and equipment.

The story behind the new Essence series of Xonar

Aiming to create a classic master piece, the development of the new Xonar Essence line has triggered us to engage a new quest in search for true high end audio and the essence of sound. We looked for all traces and only to realize that the answer lies in the very root of our own culture, and that it is the process of searching for the purest sound in harmony with man and the environment that defines the highest level of audio.

4000 years ago, our ancestors were also searching for instruments that play the heavenly music, not just to pay homage to the gods, but also to represent the harmony between man and nature. Throughout the time, they crystallized their knowledge of the materials and the spiritual pursuit into that piece of the Chime of Tiger.

Like our ancestors, the Xonar team also searched for only the best components and used only the finest designs in order to reproduce that purest essence of sound. As the Chime of Tiger totem gold-plated on our EMI shield, Xonar Essence STX was born with the mixture of ancient but never changing spirit and nowadays cutting-edge technologies.

This Audio Precision test report was prepared not only to back up the unprecedented performance of Xonar Essence STX, but is also a footnote of our ongoing quest in search for the essence of sound.

Test Platform Information

- Audio Card: ASUS Xonar Essence STX
- Audio Precision Instrument: SYS-2722
- Test Signals: 48KHz, 24bit (192KHz, 24bit for frequency response test)
- M/B: ASUS P5N72-T PREMIUM
- CPU: Core 2 Duo E6750 2.66G
- RAM: Apacer 1G DDR 2
- HD: Segate 40G HD
- DVD Rom: Asus DVD E616A
- VGA: Geforce PCX 5750
- Power supply: Delta 650W power supply(GPS-650AB B)

Audio Precision Test Report

Test Signals: 48KHz, 24bit (192KHz, 24bit for frequency response test)

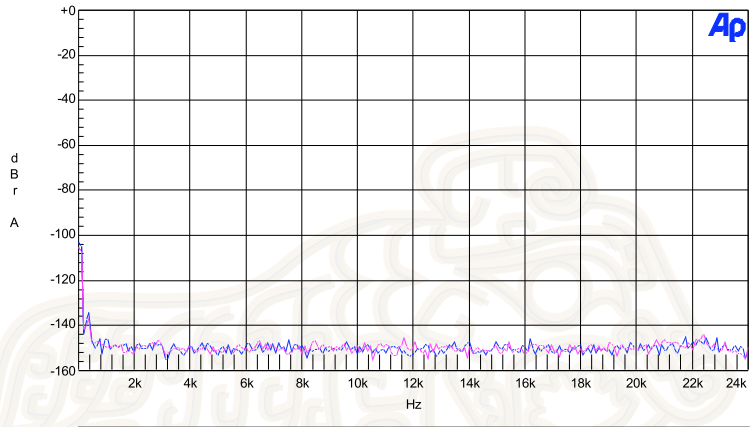
(Line Out)

Noise Level
(SNR~124dB)

Audio Precision

A-A FFT SPECTRUM ANALYSIS

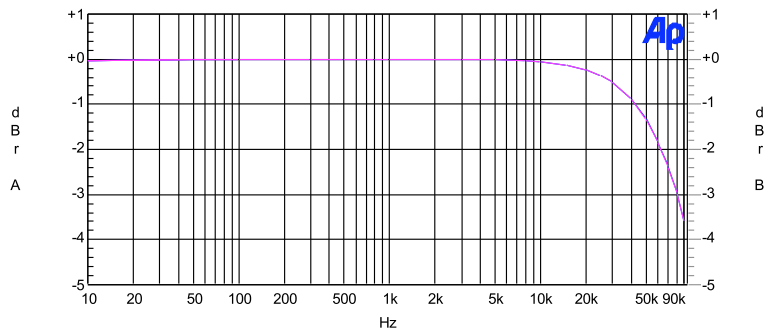
10/01/08 12:16:53



Frequency Response
(<10~90KHz@-3.5dB)

Audio Precision

10/01/08 12:37:58

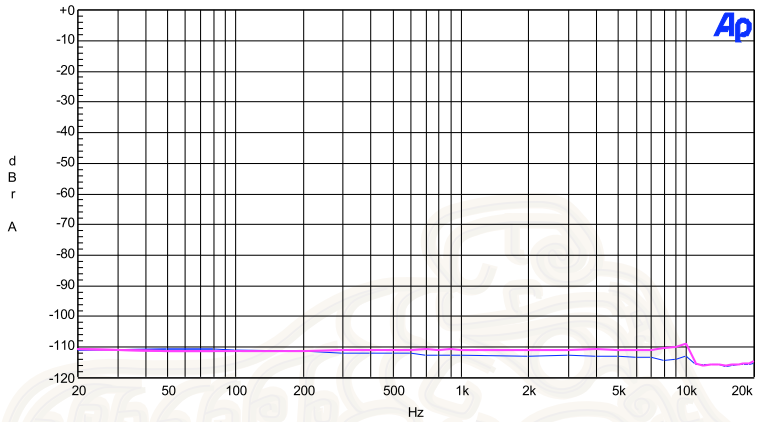


(Line Out)

THD+N Full Band
(-116~-110dB for
20~20KHz)

Audio Precision

10/01/08 12:25:42

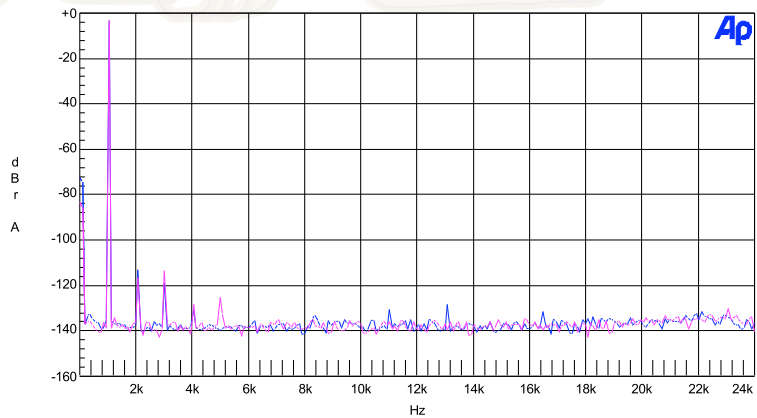


THD+N 1KHz
0.0003%
(-110dB) @997Hz

Audio Precision

A-A FFT SPECTRUM ANALYSIS

10/01/08 12:20:18



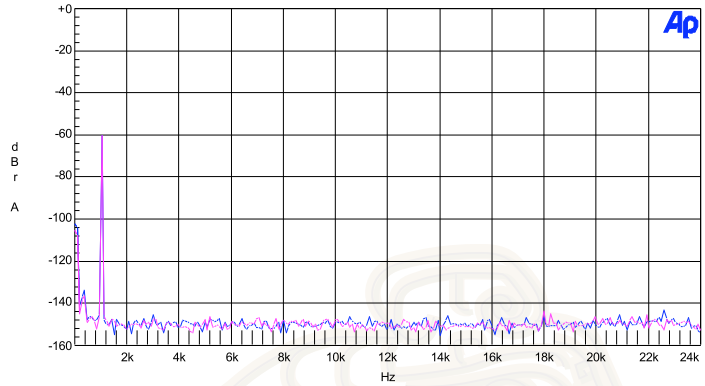
(Line Out)

Dynamic Range
(~124dB)

Audio Precision

A-A FFT SPECTRUM ANALYSIS

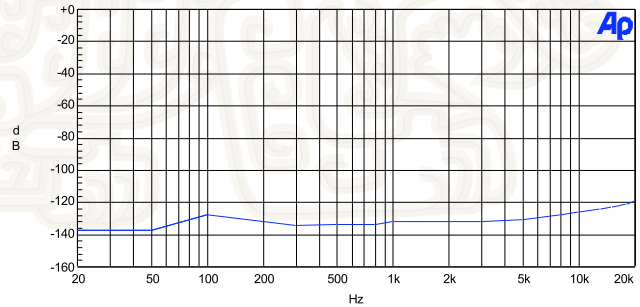
10/01/08 12:18:21



Audio Precision

10/01/08 12:29:13

Left

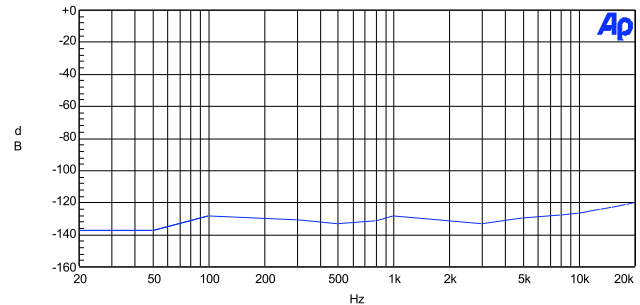


Crosstalk
-132dB @ 1KHz
-140~-120dB for
20~20KHz

Audio Precision

10/01/08 12:23:51

Right

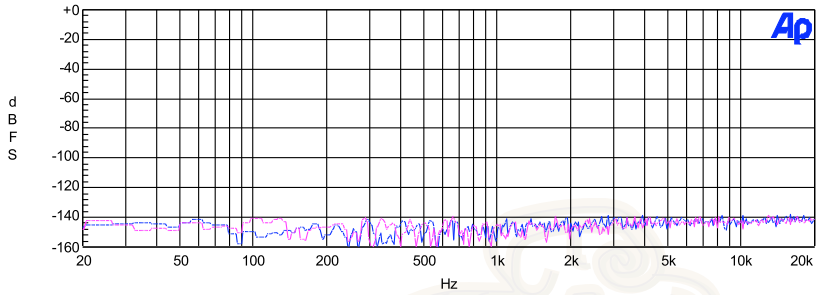


(Line In)

Noise Level
(SNR~118dB)

Audio Precision

10/01/08 16:09:48

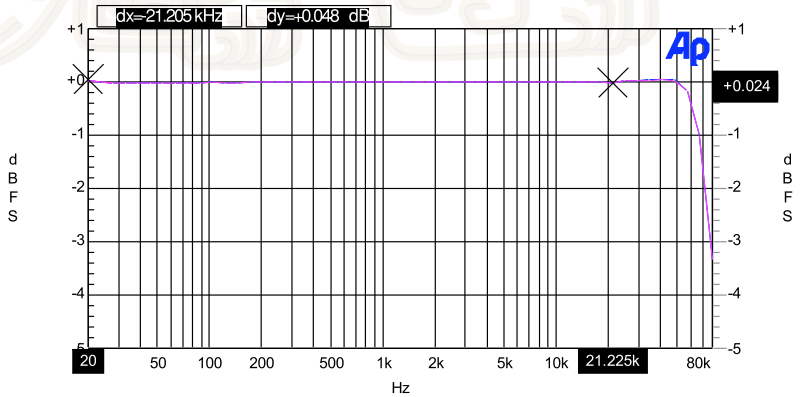


Frequency Response
(<10~90KHz@-3.5dB)

Audio Precision

A-D FREQUENCY RESPONSE

10/01/08 16:21:31



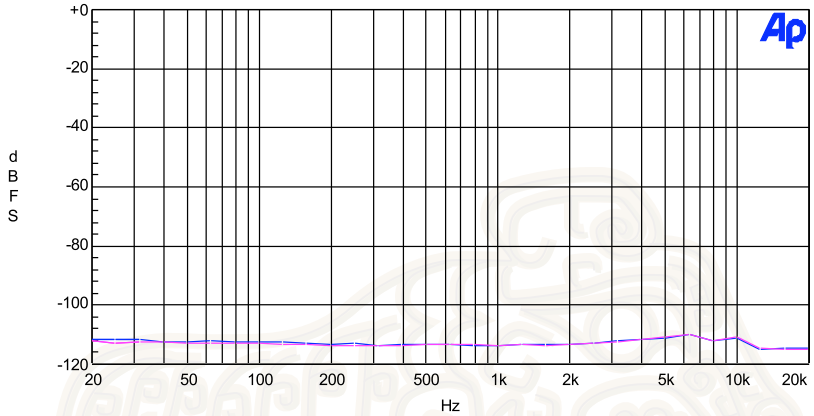
(Line In)

THD+N Full Band
(-110~-115dB for
20~20KHz)

Audio Precision

A-D THD+N vs FREQUENCY

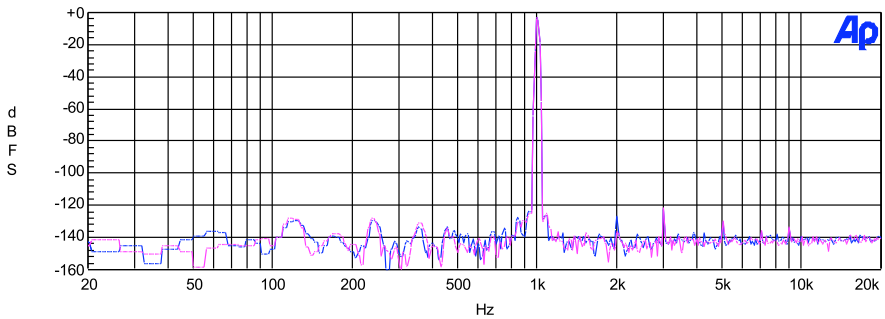
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THD+N 1KHz 0.0002%
(-113dB) @997Hz

Audio Precision

10/01/08 16:12:23



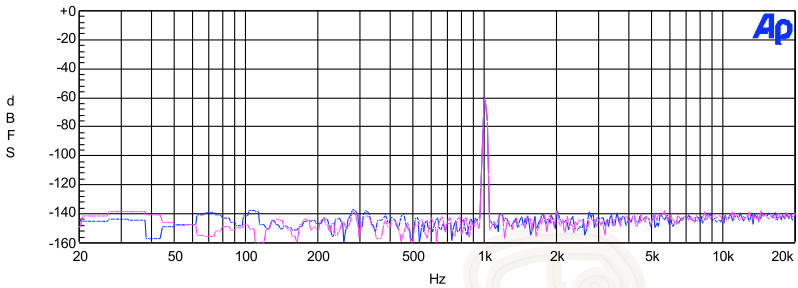
(Line In)

Dynamic Range

(~118dB)

Audio Precision

10/01/08 16:11:30

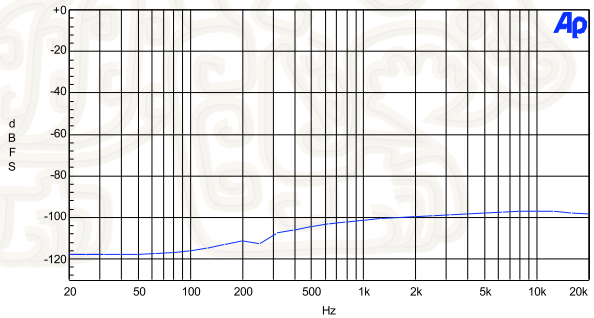


Audio Precision

A-D THD+N vs FREQUENCY

10/01/08 16:17:16

Left



Crosstalk

-102dB @ 1KHz

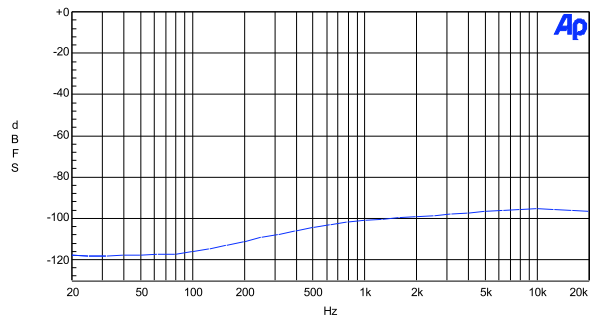
-117~-94dB for 20~20KHz

Audio Precision

A-D THD+N vs FREQUENCY

10/01/08 16:17:58

Right



Appendix 1: Glossary

- **Noise Level**

The level of any undesired system noise signals over the audio spectrum, including AC mains hum, white noises, stray magnetic field, etc.
- **SNR**

Signal-to-Noise Ratio, the ratio of the maximum amplitude signal to the sum of the noise energy. The higher, the better.
- **THD+N**

Total Harmonic Distortion plus Noise, measured by attenuating the fundamental signal with a narrow band notch filter, then measuring the remaining signal which consists of harmonics of various order. This implies the linearity of the audio converter and the lower, the better.
- **Frequency Response**

A measure of a device's ability to respond to a fixed input voltage, at different input frequencies, and the difference in amplitude reproduced for each frequency. The flatter curve at wider frequency range is better.
- **Dynamic Range**

The difference, usually expressed in dB, between the highest and lowest amplitude portions of a signal which a device can linearly handle. Ideally it should be very close to SNR value and the higher, the better.
- **Crosstalk**

Unwanted signal coupling from another channel of stereo or multi-channel transmission. The lower value is better.

Appendix 2: Credits

Team Director

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Eric Cheng

Team Staff

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Jason Liang

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Teddy Lee

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Arthur Tsai

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