

A variety of expansion cards can be added to the unit, including:

- 8 channel TDIF (double wire/speed - 1 slot).
- 8 channel ADAT (1 slot)
- 8 channel ProTools compatible digital interface (single wire - 1 slot).
- Separate stereo AES/EBU, stereo S/PDIF electrical and optical interface in/out (single wire - 2 slots).

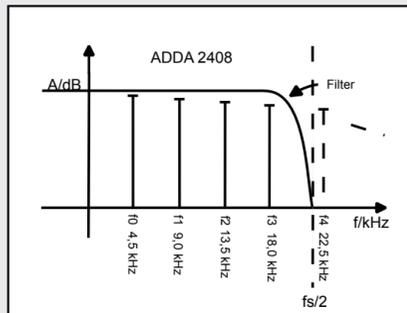
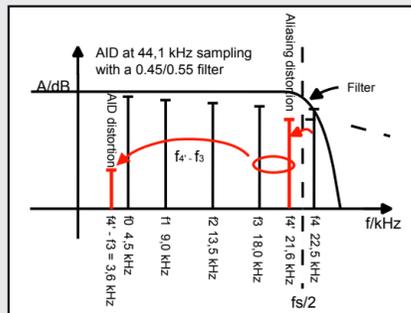
Interfaces to come:

- 4 channel DAC interface (2 slots) with cross-field functionality. (Very useful together with the monitor L/R output if the ADDA 2408 is used for monitoring 5.1).
- 8 channel DAC interface. (1 slot - the digital input channels are assigned 1:1 to the analog outputs).
- 8 channel AES/EBU input interface (2 slots).
- 8 channel AES/EBU output interface (2 slots).



Avoid Aliasing Intermodulation Distortion (AID). The invisible distortion in digital audio.

- If an ADC (the components used for the analog to digital conversion) receives frequencies at more than half the sample-rate, it will mirror the frequencies around half the sampling frequency, and create new a-harmonic frequencies.
- In order to achieve as wide a frequency response as possibly most high-end AD converters use a 0.45/0.55 filter. This "Brick Wall" filter starts at 45 % and has full attenuation at 55 % of the sample frequency. At 44.1 kHz sampling the filter starts at 19.85 kHz and has full attenuation at 24.26 kHz.
- This means that with 44.1 kHz sampling the frequencies between 22.05 kHz (half the sampling frequency) and 24.26 kHz will be mirrored in the area between 19.84 and 22.05 kHz. By themselves, these frequencies are inaudible.
- However, the mirrored a-harmonic frequencies, when reproduced in a loudspeaker, will intermodulate with the audible signal and create new audible frequencies, typically in the interval between 1 and 5 kHz. This kind of distortion is called aliasing intermodulation distortion (AID). The invisible distortion in digital audio.
- The only solution is to have full attenuation at half of sampling frequency.
- The ADDA 2408 has full attenuation at half of the sampling frequency and therefore no AID



ADDA2408 - TECHNICAL SPECIFICATIONS:

A/D CONVERSION, LINE INPUT

Resolution	24 bit
Sample-rates	44.1, 48, 88.2, 96 kHz
Dither	Psycho acoustic, 16, 18, 20 bit
Dynamic range (A)	> 117 dB
THD+N (A)	< -104 dB
Cross talk	< -110 dB
Input impedance	> 15 k Ω
Max. input level	+12 to 27 dBu, adjustable
Connectors	XLR (pin 2 hot)
Processing delay	< 1.0 ms

A/D CONVERSION, MIC. INPUT

Resolution	24 bit
Sample-rates	44.1, 48, 88.2, 96 KHz
Dither	Psycho acoustic, 16, 18, 20 bit
Dynamic range (A)	> 117 dB
THD+N(A), 35dB gain, -6dBFS	< -105 dB
Noise(A), 60dB gain (grounded input)	< -131 dB
Noise(A), 60dB gain (150 Ω)	< -126 dB
Cross talk	< -110 dB
Input Impedance	> 6 k Ω
Gain	0 to 99 dB
Freq. response deviation	< 0,05 dB
Connectors	XLR (pin 2 hot)

D/A CONVERSION, LINE OUTPUT

Resolution	24 bit
Sample-rates	44.1 to 96 kHz
Dynamic range (A)	> 117 dB
THD+N (A)	< -91 dB
Cross talk	< -100 dB
Output impedance	< 40 Ω
Max. output level	+12 to 27 dBu, adjustable
Connectors	XLR (pin 2 hot)
Processing delay	< 0.85 ms

D/D CONVERSION

Resolution	24 bit
Sample-rate ratio	1:3/3:1
Sample-rates	32 to 96 kHz
Dynamic range (A)	> 125 dB
THD+N (A)	< -115 dB
Processing delay	< 1.80 ms

Frequency response A/D and D/A.

Stop-band attenuation 117 dB at half of the sampling freq. for A/D.	
Fs 44.1kHz, 20-18.5 kHz:	± 0.1 dB
Fs 48kHz, 20-20 kHz:	± 0.1 dB
Fs 88.2kHz, 20-35 kHz:	± 0.1 dB
Fs 96kHz, 20-38 kHz:	± 0.1 dB

DIGITAL AUDIO INPUTS AND OUTPUTS

Expansion cards	8 slots for expansion cards
AES/EBU out:	XLR connector, for monitor

HEADPHONE AMPLIFIER

RMS output power (600 Ω)	50 mW
Connectors	1/4 " stereo phone jack

SYNCHRONISATION

AES11	XLR, 44.1 to 96 kHz
Word clock sync in/out	BNC, 44.1 to 48kHz
Super clock sync in/out	BNC, 11.2896 to 12.288 Mhz
Selection for double speed	44.1 to 48kHz/88.2 to 96kHz
Video sync in	PAL, NTSC, SECAM

GENERAL

EMC, complies with:	EN 50082, and EN 50022
Operating temperature:	+5 to 45 $^{\circ}$ C
Dimensions (w,h,d):	19", 2U, 285 mm
Weight:	5,8 kg
Mains voltage:	95 - 240 VAC
Power consumption:	Max. 20 Watts

Due to our policy of continuously improving our products, Digital Audio Denmark reserves the right to make feature and specification changes without notice.

ADDA 2408

8 channels 24 bit 96 kHz A/D, D/A, D/D, sample-rate and format converter



- An accurate tool for all multi-channel conversion applications
- Clean audio conversion eliminating AID
- Flexible interface structure matching most digital systems
- Prepared for future digital interfaces
- A match in both portable and stationary recording set-ups
- Remote controllable via advanced PC or Mac program

Digital Audio Denmark

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