DAC Box DS2 ultra

High-End Digital/Analogue Converter with DSD & USB 2.0

- Top grade AK4490 D/A chip (32-bit PCM 768kHz / DSD256)
- 6 Inputs: 1x USB, 3x optical (TOSlink®), 2x coax (S/PDIF)
- Up to 32bit/768kHz asynchronous USB (XMOS technology)
- DSD64, DSD128 & DSD256 (DSD over PCM)
- Audio Class 2 (USB 2.0 High Speed) driver for Windows included
- Up to 24bit/192kHz for optical & coax inputs
- 5 selectable digital filter characteristics
- 3 selectable sound modes
- High-end ultra low phase oscillator with superior noise rejection
- RCA line level solid-state analogue output stage
- Ultra linear & ultra low noise circuitry
- Separate power supplies for every stage with advanced filter technology
- Upgradeable with optional linear power supply Power Box DS2 Sources
- Full metal casing in silver or black
- Optional with wooden side panels (rosenut, walnut, eucalyptus)

Technical data

D/A-converter	AK4490 32-bit PCM 768kHz / DSD256
Sampling rate converter	AK4137EQ upsampling to 768kHz
Sampling rates	32/44,1/48/88,2/96/176,2/192/352,8/384/768 kHz
DSD support	DSD64, DSD128 and DSD256
Filter settings	5 different selectable on front
6 digital inputs	2x coax (S/PDIF), 3x optical (TOSlink®), USB B
Frequency response	20Hz - 50kHz (+0/-1dB)
Analogue out	RCA/Cinch
Output voltage	2,2 Veff (switchable +6dB gain gives 4,4 Veff)
THD	0,00085% solid state out
Crosstalk	-117dB (10kHz@0dB)
Signal to noise ratio	113dB (20 - 20.000 kHz)
Digital out	optical (TOSlink®)
Power consumption	<1 watt standby, 600mA max
Outboard Power supply	18V/1000mA DC (included)
Dimensions W x H x D	206 x 72 x 200 (220mm with sockets)
Weight	1010g without power supply

HI-RES AUDIO BY PRO-JECT AUDIO SYSTEMS

DSD Direct Stream Digital

32 bit

ECO < 1 watt

DAC Box DS2 ultra silver or black SRP 599,00 €

DAC Box DS2 ultra & wooden side panels SRP 699,00 €

DAC Box DS2 ultra - state-of-the-art audio converter!

The advanced *DAC Box DS2 ultra* is a universal and very flexible D/A converter of the highest class. It offers full DSD256 support and upsampling of all input signals to 768kHz from USB, coaxial and optical inputs. This realizes high-resolution sound playback with a rich sound field and bass representation with less distortion.
Due to its class-leading audio performance *DAC Box DS2 ultra* is an ultimate high-end bargain!

See detailed information about *DAC Box DS2 ultra* on the next page!

rosenut

walnut

eucalyptus

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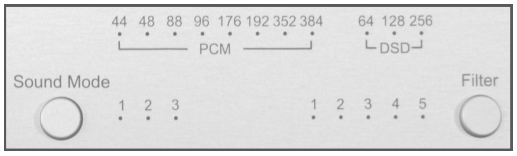
DAC Chip:

The *Asahi Kasei AK4490* is a **new generation 32bit / 768kHz stereo Premium DAC** which adopts the newly developed *VELVET SOUND*™ technology achieving high-resolution sound playback that realizes a rich sound field and bass representation with less distortion. 5 digital filters and 3 sound modes can be selected. The *AK4490 DAC* integrates a capacitor filter that greatly reduces sound degradation from noise shaping, achieving a flat noise floor up to 200kHz.



Selectable sound modes and filter characteristics on the front

Sound Type	Impulse Response	Filter name	Remarks	Sound Source Positioning	Edge
Natural Tone		Super Slow Roll-off	No echo reproduces natural sound	Close	Ultra-Sharp
Acoustic Tone		Short Delay Slow Roll-off	Minimal echo reproduces original sound		Sharp
Traditional Tone		Slow Roll-off	Minimal echo reproduces original sound		Middle
Acoustic Sound		Short Delay Sharp Roll-off	Post echo enhances bass sound		Sharp
Traditional Sound		Sharp Roll-off	Pre and post echoes make powerful sound	Far	Slow

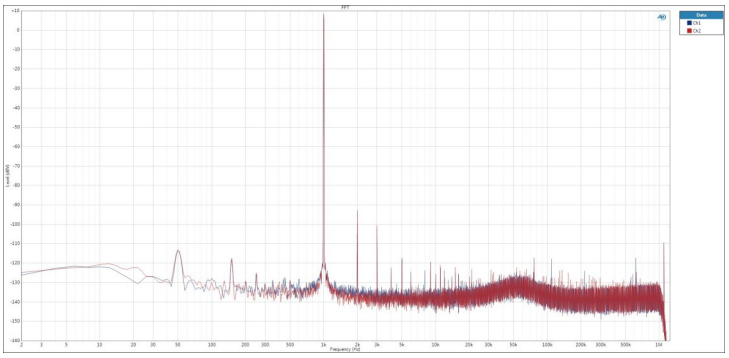
DSD capability:

Engaged audiophiles will love full DSD capability (**up to DSD256**) over PCM. USB input allows conversion of hi-res audio data up to 32-bit and 768kHz, all other inputs fully support 24/192kHz HD music data in fully asynchronous mode. **Up to 768kHz PCM and 11.2MHz in DSD** are fully supported for premium digital playback. In particular, our DAC uses a **"DSD Direct Path"** allowing the audio signal to bypass the ΔΣ modulator, to reproduce the original sound from DSD audio source.

DSD
Direct Stream Digital

Upsampling to 768kHz:

The *AK4137EQ* is a new flagship premium 32-bit SRC (Sampling Rate Converter), based on AKM's **VELVET SOUND architecture** but never used in such low price range. Main reason: DAC requires low pass filter which is used to filter the carrier frequency generated from the oscillator. If the sampling (carrier) frequency is 44,1kHz, low pass filter is e.g. 22kHz and such filter affects audible frequencies in range about 10kHz. Amplitude decrease and phase shift affect space and timbre of the sound. 768kHz sampling frequency allows to use low pass filter on much higher frequencies and then affected frequencies are **above 200kHz which is far above any audible frequencies.**



Asynchronous USB input is based on XMOS technology:

It allows transfer of data in asynchronous mode **up to 32bits and 768kHz**. Windows based computers require for higher resolution than 24/96 a driver, which is attached to DAC Box DS2 ultra. Mac or Linux computers doesn´t require it. USB Audio 2.0 solution provides high quality digital audio connectivity for pro-audio and consumer applications. The design provides this certified **USB 2.0 High Speed** device and Audio Class 2.0 device class implementations.

XMOS

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Product information

05. 2016

4-layer PCB:

For the first time in Pro-Ject Audio Systems history, here is used a four layers PCB which allows to use the shortest and symmetrical paths between the crucial components.

Output stage:

A solid state Class A circuitry offers limitless details and dynamics. The whole audio circuitry design is ultra low noise and ultra linear with very low output impedance to avoid any negative interference with cables or pre-amps.

Rear:
- RCA
- TOSlink® output
- Digital inputs (TOSlink®, S/PDIF coax, USB B)
- Power

The casing:

In order to avoid penetration of electrical and mechanical interferences in *DAC Box DS2 ultra* is mounted in a massive aluminium / steel case. Internal chassis is made from a steel sheet.

Optional wooden side panels

DAC Box DS2 ultra is also available with *rosenut, eucalyptus walnut* wooden side panels
(with wooden side panels SRP € 699.00)

Power Supply:

DAC *Box DS2 ultra* is using an external adaptor which further eliminates possible influences of mains interference. Every stage of *DAC Box DS2 ultra* has a separate power supply with very advanced filtration technology.

Upgradeability:

Optional linear power supply *Power Box DS2 Sources* adds even more depth and lets you hear all microscopic fine detail.

symbol photo

Sound Characteristic and comparison to RS DACs:

The aim of the new DAC was to produce the best digital sound with very high resolution and lowest distortion for very remarkable price. It should be offering a different sound character as the tube designs ultra warm smoothly sounding DACs out of the RS line.

Why Ultra?

Later this year we will additionally offer a simple version of the DAC Box DS2 with the same fantastic DAC but without SRC (Sampling Rate Converter).

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