

Press release

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Above Topping DX5 II desktop DAC/headphone amp in white finish

Topping DX5 II

With remarkable specifications, engineering of the highest order and a price of just £299, Topping's DX5 II is the new budget benchmark for desktop DACs

Buckinghamshire, England -- DAC specialist Topping – distributed in the UK by Electromod – has earned a global reputation for exemplary design and class-leading performance at accessible prices. With a range of DACs (Digital-to-Analogue Converters) and amplifiers stretching from less than £200 to over £1000, the company's products deliver exceptional value for money for both hi-fi systems and head-fi applications.

Topping's latest device, the DX5 II, is a compact powerhouse – an ultra-hi-res DAC, preamplifier and headphone amplifier with fully balanced architecture and remarkable specifications given its RRP of just £299. Measuring 19x4.4x15.5cm (WxHxD), it forms a versatile 'digital hub' with an impressive connectivity array, equally at home in a multi-component hi-fi system or nestling next to a computer on a desk.

Its purpose is to deliver exceptional sound quality with any digital source – smartphones and tablets, PCs and Macs, media players and games consoles... any entertainment device with a digital audio output or Bluetooth. It's terrific for headphone users, with a built-in amp producing class-leading power and engaging clarity thanks to proprietary technology. And its versatile design makes it ideal for a range of system configurations, with a fixed analogue output mode to pair with an integrated amp and passive speakers, and a preamp mode with volume control for connection to a power amp or powered speakers.

The DX5 II sports an impressive array of inputs and outputs for such an affordable device. There are three hi-res digital inputs – USB, coaxial and optical – as well as high-definition Bluetooth with state-of-

the-art codec support. Line/preamp outputs come in balanced XLR and single-ended RCA flavours, while a trio of headphone outputs encompass balanced XLR, balanced 4.4mm and single-ended 6.35mm. A 12V trigger input and output is also provided for system synchronisation.

The DX5 II's crisp, compact design is complimented by a neat control scheme and impressive two-inch colour screen. But it's what lies beneath the surface that makes this such an impressive DAC/headphone amp at its modest price – top-quality components and clever circuit design deliver a sound that is spacious and brimming with detail, engaging the listener with bold dynamics and an expressive, full-bandwidth performance.



Left Smart, compact and eminently versatile, the DX5 II delivers a remarkable specification for such a modestly priced DAC/headphone amp

DAC's entertainment: two to tango

The DX5 II's DAC stage is built around the ES9039Q2M – a high-spec chip from ESS Technology's 32-bit Sabre range, featuring new-generation Hyperstream IV architecture to deliver ultra-low-noise and exceptional dynamic range. This would be impressive enough at the DX II's price, but Topping hasn't settled for just one of these chips; instead, two are used – one dedicated to the left channel of the stereo signal, the other to the right.

The ES9039Q2M is a two-channel DAC chip. Incorporating two of these chips to decode the left and right channels independently enables a pair of differential signals per channel, further lowering the noise floor, improving channel separation and enhancing the DAC's ability to resolve fine musical detail and micro-dynamics.

Every format at the highest quality

The DX5 II's hi-res audio credentials are state-of-the-art, handling PCM data to 32-bit/768kHz over USB (24-bit/192kHz via the coaxial and optical inputs). Fully native DSD to 22.5792MHz (DSD512) is supported, as well as DoP (DSD over PCM).

A new 32-bit, 16-core XMOS chip, the XU316, is used to receive and process data over USB, in tandem with the high-performance audio-grade Thesycon driver for Windows PCs. (Other operating systems such as Mac OS, Linux, iOS and Android do not require a driver.) This ensures maximum quality, reliability and convenience when using the USB input.

Brilliant Bluetooth

The DX5 II includes an advanced implementation of Bluetooth, for convenient device-to-device wireless streaming. A comprehensive suite of high-definition codecs is supported including LDAC and aptX Adaptive up to their 24-bit/96kHz specifications, as well as aptX HD (24-bit/48kHz).

Other Bluetooth formats include aptX Low Latency, 'regular' aptX, AAC and SBC, ensuring that whatever type of device you're streaming from – Android, iOS, Windows PC or Mac – you're assured the best possible sound quality. The range and reliability of wireless reception is optimised by compliance with the Bluetooth 5.1 standard.

Danger! High (quality) voltage!

I/V (Current-to-Voltage) conversion is a necessary part of any DAC – it converts the initial current output from the digital-to-analogue conversion process into the voltage signal required by an amplifier, so the amp in turn can drive a pair or headphones or speakers. For sound quality, the I/V implementation is as important as the choice of DAC chip.

Topping has created its own I/V conversion module to unlock the full potential of the DAC chip, delivering lower noise and distortion whilst optimising the use of space within the DX5 II's chassis.



Left Topping's new X-Hybrid headphone amp performs superbly with everything from super-sensitive IEMs to currenthungry planar headphones

Heavenly hybrid headphone amp

Topping's newly developed X-Hybrid headphone amplification technology allows for a fully balanced four-channel amplifier design within a compact chassis. An evolution of NFCA (Nested Feeback Composite Amplifier) architecture, it utilises an all-new hybrid design with three stages – a discrete input stage, an op-amp based gain stage and a discrete output stage. The resulting fully optimised circuit topology retains the ultra-low distortion and high dynamic range of NFCA amplification while enhancing efficiency, reducing heat generation and lowering static power consumption.

Able to drive all manner of headphones with consummate ease, up to and including the most current-hungry planar designs, the DX5 II's amp stage delivers prodigious power and engaging dynamics, coupled with excellent detail resolution and the ability to remain firmly in control at all volume levels.

Its performance is remarkable for such a modestly priced DAC/headphone amp, delivering 2x 7,600mW into 16 ohms, 2x 6,400mW into 32 ohms and 2x 990mW into 300 ohms through its balanced outputs, with a signal-to-noise ratio of 133dB @ 1kHz and dynamic range also reaching 133dB @ 1kHz. Even owners of super-sensitive IEMs (In-Ear Monitors) are treated to an inky-black background without a hint of noise, thanks to a low noise floor of just 1.8 uVrms.

Comprehensive sonic tailoring

Topping has developed a new PEQ (Parametric Equaliser) algorithm allowing precise control of frequency, gain and Q (bandwidth) across ten customisable bands. Operated via corresponding software for Windows and Mac OS, users can create and save multiple profiles and upload them to the DX5 II; these can then be selected via the menu system without the software running in the background.

The PEQ software allows target curves to be imported, and different profiles can be applied to different outputs. This enables the sound from each pair of headphones and speakers the DX5 II is used with to be fine-tuned individually, in accordance with their technical and sonic characteristics, the acoustic environment and personal taste.



Left Users can create parametric EQ profiles and upload them to the DX5 II to precisely tailor sound with different headphones and speakers

A fine display

Another unusual feature for such a modestly priced DAC/headphone amp is its two-inch colour screen with multiple display options thanks to Topping's new Aurora UI. Users can choose to show data such as incoming file format, sample rate and volume level, or select a 'spectrum analyser' (FFT) display to represent the audio signal's frequency components in real time. A third option is a classic VU-style meter, showing signal levels as the music plays and adding vintage appeal to this most modern of devices.

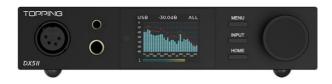
The display is highly configurable, with nine different colour schemes, adjustable brightness and more. All functions are accessed via a combination of three buttons and a multifunctional, 'pressable' rotary control on the DX5 II's front panel; the rotary control is user-configurable to allow easy, intuitive access to the functions its owner uses most often. A remote control is also supplied.

Price and availability

The DX5 II DAC/headphone amp is available in the UK from mid-July, brought to these shores by Topping's official distributor Electromod. It comes in a choice of black, white or silver at an RRP of £299.



Left With three finish options and a variety of display settings, the DX5 II is as attractive as it is versatile





Left The DX5 II sports an impressive connectivity array – headphone outputs at the front, digital inputs and line/preamp outputs at the rear

DX5 II DAC parameters (LineOut/USB In@96kHz)		
	RCA	XLR
THD+N @1kHz (A-wt)	<0.00008%	<0.0006%
THD @20-20kHz 90kBw	<0.0005%	<0.00015%
SNR @1kHz (A-wt)	128dB	132dB
Dynamic Range @1kHz (A-wt)	128dB	132dB
Frequency Response	20Hz-20kHz (±0.3dB)	20Hz-20kHz (±0.3dB
	20Hz-40kHz (±1.0dB)	20Hz-40kHz (±1.0dB
Output Level	2.5Vrms @0dBFS	5.0Vrms @0dBFS
Noise @A-wt	<1.1uVrms	<1.3uVrms
Channel Crosstalk	-135dB @1kHz	-147dB @1kHz
Channel Balance	0.3 dB	0.3 dB
Output Impedance	50Ω	100Ω

	DX5 II Headphone Amplifier specifications (USB Inc	(J30K112)
	6.35mm headphone jack	4.4mm/4-pin-XLR headphone jack
THD+N @1kHz (A-wt)	<0.00008% @Output=200mW (32Ω)	<0.00008% @Output=850mW (32Ω)
	<0.00007% @Output=22mW (300Ω)	<0.00007% @Output=90mW (300Ω)
THD @20-20kHz (45kBW)	<0.00060% @Output=200mW (32Ω)	<0.00050% @Output=850mW (32Ω)
	<0.00050% @Output=22mW (300Ω)	<0.00050% @Output=90mW (300Ω)
SNR @MAX OUT 1kHz (A-wt)	131dB @1kHz	133dB @1kHz
Oynamic Range @1kHz(A-wt)	131dB @1kHz	133dB @1kHz
Frequency Response	20Hz-20kHz (±0.3dB)	20Hz-20kHz (±0.3dB)
	20Hz-40kHz (±1.0dB)	20Hz-40kHz (±1.0dB)
Output Level	7.2Vpp @G=L	15.0Vpp @G=L
	24.2Vpp @G=H	48.0Vpp @G=H
Noise (A-wt)	<1.1uVrms @G=L	<1.6uVrms @G=L
	<2.5uVrms @G=H	<4.3uVrms @G=H
Channel Crosstalk	-127dB @1kHz	-143dB @1kHz
Gain	G=L 8.6dB (Vrms/FS)	G=L 14.6dB(Vrms/FS)
	G=H 18.7dB (Vrms/FS)	G=H 24.7dB(Vrms/FS)
Channel Balance	0.3 dB	0.3 dB
Output Impedance	<0.1Ω	<0.1Ω
Output Power	3300mW x 2 @16Ω THD+N<1%	7600mW x 2 @16Ω THD+N<1%
	2200mW x 2 @32Ω THD+N<1%	6400mW x 2 @32Ω THD+N<1%
	1160mW x 2 @64Ω THD+N<1%	4300mW x 2 @64Ω THD+N<1%
	250mW x 2 @300Ω THD+N<1%	990mW x 2 @300Ω THD+N<1%
	120mW x 2 @600Ω THD+N<1%	490mW x 2 @600Ω THD+N<1%
Load impedance	>8Ω	>8Ω

TOPPING

Formed in 2008, Topping has forged a formidable reputation for first-rate audio design and engineering that puts its competitors in the shade. The company's range includes class-leading DACs of various 'flavours', some using ESS Technology or AKM chips, others incorporating R2R and proprietary discrete DAC technologies, to cater for a wide variety of tastes and preferences. Amplifiers are another speciality, from analogue headphone amps to match the various DACs, to stereo and mono amps for loudspeakers. All punch well above their price points.

toppingaudio.com



Founded by Mark Dolbear, Electromod is a leading UK distributor specialising in head-fi gear, from DACs to amps to headphones and associated accessories. The company focuses on product excellence and a personal style of customer support, operating as the official distributor for class-leading brands such as Dan Clark Audio, Dekoni, Topping and Violectric. Mark has an engineering background and has worked in the audio industry since 1995, servicing products from the likes of Mark Levinson, Goldmund, Ayre Acoustic and Stax before forming Electromod.

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