Tech Note

xCAN

KILLER BLUETOOTH + BALANCED COMBO

INTRODUCTION.

The xCAN is the next generation in mobile headphone amplifiers – it replaces the micro iCAN SE and the nano iCAN.

- With high-end Bluetooth connectivity, just about every modern device is able to stream audio to it without the need for cumbersome cables.
- The xCAN delivers high-end audio quality from both Balanced and S-Balanced outputs, using a balanced dual-mono circuit topology that draws from the flagship Pro iCAN in an extremely portable package.
- The 3D+® Matrix for Headphones and the new XBass Ⅱ® system enhance your enjoyment of music by correcting common flaws even in very expensive headphones, offering the most musical enjoyment from the widest range of headphones.

BLUETOOTH BUT NOT AS YOU KNOW IT.

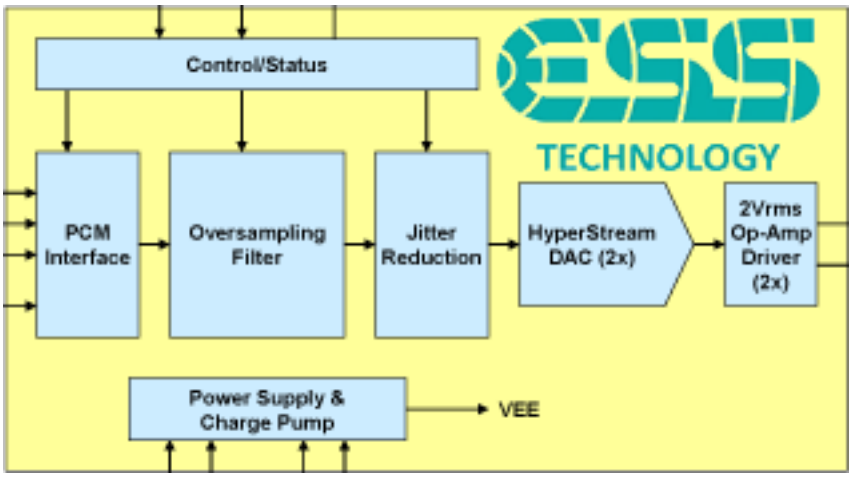
Bluetooth functionality in a device is one thing. To make it sound really great is another.

The cookie cutter route - get a do-it-all SOC[1] module, implement according to the datasheet and you are done. Like this:

These SOCs are mainly specified for 'voice' calling. Is it any wonder that audio on Bluetooth is distinctly 'average'?

This is not the iFi way. So, for the xCAN (and the xDSD) we developed a ground-up solution where the SOC is used *only* for reception (ie: no conversion/amplification) and includes aptX and AAC codecs for best audio quality from both iDevices (AAC) and Android devices, laptops etc (aptX).

The signal from SOC has a huge amount of jitter so it is then sent to an ESS Sabre Hyperstream DAC chipset with Time Domain Jitter Elimination and discrete oscillator, to eliminate jitter for conversion to analogue, before being sent to the amplifier.



The result? Quite an amazing performance from Bluetooth that is a positive surprise. And for all wishing to enjoy cordless audio/movies, the xCAN (like the xDSD) has 'cut the cable'.

[1] SoC ('System on Chip') is a module with several functions embedded. Various SoCs are inside smartphones, tablets etc. Great for miniaturization, not so great for sound quality

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BALANCED ON THE GO.

The xCAN offers balanced in/out to take full advantage of the growing availability of balanced sources and headphones. The xCAN uses the W990VST analogue volume control with digital CyberDrive control. For amplification, the OV4627 amplifier chip (4 channel) is used to deliver exceptional sonic performance on-the-go.

ALL NEW 3D+ AND XBASSII.

XBass Ⅱ ® (On/Adj/Off) has been implemented in the xCAN for the first time.

In recent times, new research into headphone frequency response showed that a purely 'flat' response is not 'ideal' for enjoyable listening. Our long present XBass® fits the profile of the low-frequency correction required. However, it was also shown that a certain amount of lower midrange boost is needed to give many headphones a more 'natural' sound. As this lower midrange region is usually also called the 'presence' region we have used this term to indicate the lower midrange correction. In the xCAN, XBass Ⅱ ®(or perhaps better HP-EQ) can be selected to have either Bass + Presence correction, only Bass or Presence correction only. Select according to listening preference.

Tip: DSP with its unavoidable loss of resolution and sound quality is NOT used for XBass Ⅱ ® nor 3D+® Matrix systems. They operate purely in the analogue domain and use the highest-quality discrete components. Hence all the clarity and resolution of the original music is retained.

CYBERDRIVE. FLY-BY-WIRE.

As seen in the recently launched xDSD, the xCAN has the same CyberDrive platform whereby a central rotary and one other button replaces the need for many buttons. The volume control system despite being 'digital control' in function remains 'analogue' in operation. This means that the full dynamic range and every 'Bit' of resolution is preserved to deliver the best sonic performance.

FEATURES

Front panel

- 2.5mm TRRS Balanced output
- 3.5mm TRS S-Balanced output
- Stepped attenuator volume control (-95dB...+18dB gain)
- Analogue Domain 3D Matrix/ XBass Ⅱ® (on/off)

Rear panel

- 2.5mm TRRS Balanced input (Balanced TRRS wiring ONLY)
- 3.5mm TRS input (compatible with TRS Headphones/IEM)
- Analogue Domain XBass Ⅱ® iQ correction (on/off with 3 presets*)
- USB C charging input port (charging only)

*based on the Olive/Welti target response for correct natural sound with Headphones and IEM's

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SPECIFICATIONS

Max Output	S-Balanced:	> 3.8V / 45 mW (@ 300 Ohm)
		> 3.5V / 380 mW (@ 32 Ohm)
		> 3.1V / 600 mW (@ 16 Ohm
	Balanced:	> 7.6V / 90 mW (@ 600 Ohm)
		> 7.2V / 800 mW (@ 64 Ohm)
		> 5.7V / 1,000 mW (@ 32 Ohm)
THD & N	S-Balanced:	< 0.005% (@ 100 mW/1.26V 16 Ohm)
	Balanced:	< 0.006% (@ 360 mW/2.4V 16 Ohm)
SNR	S-Balanced:	> 121dBA (@ 3.8V)
	Balanced:	>120dBA (@ 7.6V)
Recommended HP Impedance:		16~600 Ohm
Max. Input	S-Balanced:	3V RMS
	Balanced:	6V RMS
Gain:		-95dB to +18dB adjustable in 114 1dB steps (using volume control)
Frequency Response:		< 2Hz - > 200kHz (-3dB)
Playback Time:		> Up to 8 hours

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