

Eastern promise

Martin Pipe is impressed with Questyle's CMA600i, and its headphone amplifier technology.

China's Questyle, a relatively new entrant into the world of high-quality audio – in this country – has been attracting interest of late. Much of this is down to its QP1 personal music player, which is intended to challenge the likes of Astell and Kern. What's next? A natural move is to embody all of the groundwork in a DAC/headphone amplifier that enables you to enjoy its benefits at home. Questyle introduced the CMA800i for this purpose but now offer the less expensive CMA600i, reviewed here.

The new CMA600i misses out on the choice of digital-filter characteristic (the website claims you can do this, but no switching is provided – and it's not mentioned in the manual!) but adds a balanced headphone socket in the form of a 4-pin XLR socket. Pretty good for a 'budget' product! That said, you still get the two 6.3mm jacks of the dearer model.

Another change is the DAC chip: instead of the CMA800i's Wolfson WM8741, Questyle has specified the AKM AK4490EQ (described by its maker as a 'premium 32-bit 2-channel DAC') for its new baby.

The AK4490EQ in the CMA600i processes DSD natively, unlike the Wolfson. Both chips offer differential outputs, a property that has been harnessed by Questyle's engineers, so the most is made of the 'full balanced output design' highlighted in the CM600i spec-sheet. This states that four sets of amplifier circuits are involved in the driving of balanced headphones.

Which brings me neatly to Questyle's proprietary amplifier technology – the culmination of a 2004 university project undertaken by company founder (and die-hard audiophile) Jason Wang. CMA first saw the light of day in Questyle's CM800 headphone amplifier, back in 2007. Claimed benefits include a significant reduction of distortion

– especially transient intermodulation distortion, which can yield harshness and listening fatigue. A low-impedance output helps the amplifier drive difficult loads, and you also get an extended frequency response. Such benefits can be seen in the test reports that accompany every CMA600i – quite unique for gear in this price range!

Internal construction is neat, but a few 'bodges' could be seen in our sample – presumably a pre-production unit. High-quality components are much in evidence and the mains power supply is a 'linear' type fed by a toroidal transformer. A row of audio-grade electrolytic capacitors help to minimise ripple and hum.

And it's all easy to use. There's even a remote control, but all it does is mute the output and adjust volume. The handset's input-selection buttons don't work; you can only do this with toggle switches. Annoyingly, a two-stage operation is involved



here, as you must switch between the optical and coaxial input using a rear-panel switch!

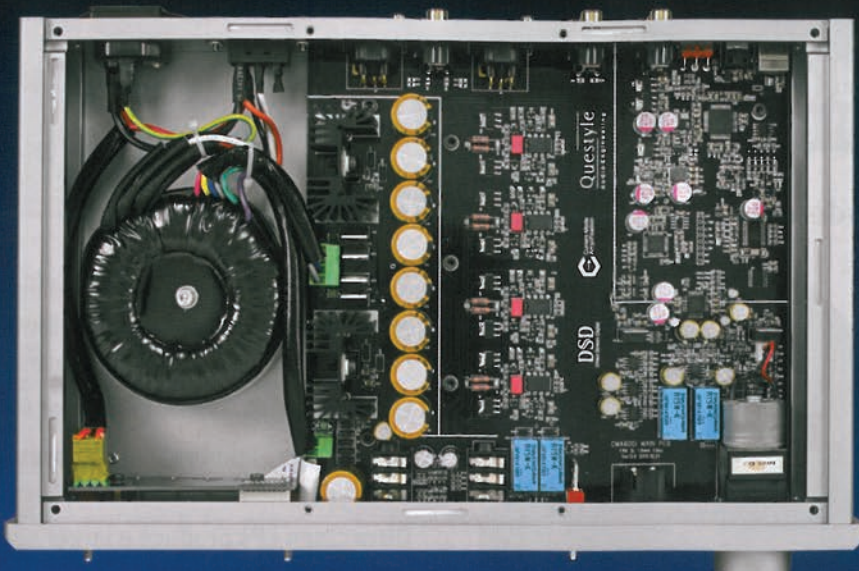
More positively, a pair of phono sockets enable the CMA600i to be used with line-level analogue sources. The instructions suggest that they only work with the headphone amp – however, the volume-controlled signals are available on the line outputs too – a feature that certainly increases the flexibility of the unit! Indicators confirm that you're listening to a PCM or DSD source – a great setup aid for those using PCs as USB sources.

On which subject, Questyle has – like the Italian valve-lovers Unison Research – gone to the trouble of explaining how to set up your computer and player software (in my case, Foobar2000). I was able to quickly configure my Windows 7 PC and get listening to DSD files natively.

SOUND QUALITY

With the CMA600i I used Oppo PM3 headphones, a Windows 7 PC (interfaced via USB) and a Cambridge CXN streamer (connected via coaxial digital). Non-headphone listening involved an Arcam A49 integrated amplifier and a pair of Quadral Aurum Wotan VIII loudspeakers.

First up – and in the spirit of this summer's Olympics – was the 2000 Continental CD of Estudando O Samba, a mid-seventies album by



A busy but well laid-out interior, with the (linear) power supply selection on the left. The middle section is occupied by the CMA output amplifiers, while the DAC circuitry can be seen on the right. High-quality components are in evidence, but on close inspection some circuit-board bodes are evident.

Brazilian artist Tom Zé – who was later to prove such an influence on David Byrne. The rhythms and lush instrumental textures of this quirky-yet-accessible samba-influenced album came across well, as did the frequently-simple stereo placement (guitars, percussion and vocals locked to left, centre and right!).

As one might expect, a good sense of rhythm is needed to complement this sort of music – and the CMA600i didn't disappoint, as it drives the music along with natural pace and purpose. It also sounded

very clean and detailed, providing insight into the subtleties of how the album was put together – yet not at the expense of musical enjoyment.

Such analytical qualities were also put to good use with Radiohead's latest offering (A Moon Shaped Pool, CD, lossless rip). With lesser systems, this album – and, come to think of it, some previous albums by this iconic band – can sound rather murky and indistinct, in part due to the electronic treatment and other studio trickery they employ. Yet here, what they're getting at was revealed





Beautifully-machined casework gives the CMA600i a distinctly luxury feel. It's a pity that you have to switch between coaxial and optical inputs with that rear-panel switch – a more convenient switch on the front of the unit switches between the selected digital source and USB. 'Soft' switching would be more convenient – and make remote control of source selection a possibility.

clearly – especially with my Oppo PM3 headphones.

There was a natural tonal balance that didn't colour frequency extremes. Bass and kick-drum within The Numbers was tight and correctly-proportioned, while the

percussive elements at the higher-end of the spectrum had just the right amount of 'bite'.

These attributes proved useful when listening to a selection of classic house-music and techno cuts (careful 24/48 vinyl rips); the excitement and flow were well conveyed, with no tiresome over-exaggeration. Similarly, the rhythms of Steve Reich's Music for a Large Ensemble (ECM CD, lossless rip) pulsed

Mammina and John R. Burr's When I'm Called Home – a beautiful piano/vocal duet. It was evident through listening that the recording was a simple 'one-take' affair, the resulting delicacy and emotion of the performance laid bare. That said, I found that – although excellent – it didn't quite have the same organic 'flow' that I'm used to with the Chord Hugo TT.

Great though the Chord is the headphone amp built into the CMA600i is arguably more capable. The effortless drive and dynamics

it can deliver are little short of incredible. With appropriate cabling, I even had it getting useful sound levels out of a pair of small speakers (B&W LM7s). I wouldn't recommend doing this for long periods, but this trick certainly shows off the potential of Questyle's

CONCLUSION

An excellent DAC and an even better headphone amp are combined in a single package of relative affordability. If you take headphone listening seriously, treat yourself to a demo!

MEASURED PERFORMANCE

The headphone outputs delivered 8.2V maximum, far above the 1V-2V necessary for headphones, and the rear balanced XLR audio output delivered this too, the Phono socket (unbalanced) outputs swinging 4.1V maximum before overload. They are easily able to drive external power amplifiers, which typically need 1V.

Dynamic range measured a very high 120dB via all digital inputs, S/PDIF

and USB, due to very low levels of noise and distortion. Our distortion analysis shows just 0.03% at -60dB with 24bit, rising to 0.21% with CD (16bit), both good results with CD being self-limited as always by 16bit quantisation noise.

The USB input offered the same results all round as S/PDIF, the main difference being ability to accept up to 768kHz sample rate PCM.

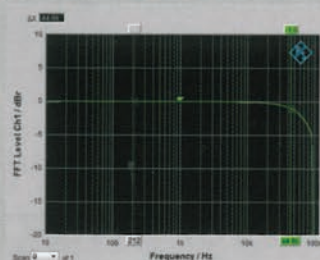
With 192kHz sample rate PCM, frequency response extended to 45kHz before rolling away gently to a 96kHz upper limit. However, the optical input has a 96kHz sample rate limit so extends no further than 45kHz and falls silent with 176.4kHz or 192kHz sample rate inputs.

The balanced 4-pin XLR headphone output delivered 14V out maximum and had a gain of x8 from the rear mounted analogue input sockets – both high values.

The CMA600i measured very well in all areas. It has a particularly good digital convertor with wide dynamic range and this alone puts it ahead of most rivals.

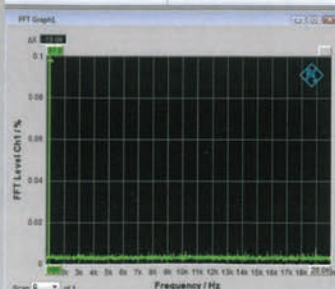
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FREQUENCY RESPONSE



DISTORTION

THD at 10%	Level (dB)	Frequency
0.0273%	8.1912 mV	99290 Hz
OFF	OFF	OFF



Output (Phono/XLR)	4.1/8.2V
Frequency response	4Hz-44.8kHz
Separation	92dB
Noise	-118dB
Distortion (24bit)	0.03%
Gain	x8

This little handset serves several different Questyle products, and some of its functions aren't relevant to the CMA600i. You can mute the output or raise/lower volume (the CMA600i's level control is motorised), but remote selection of input isn't possible.

along nicely, with firm delineation of the instrumental strands and the tonal colours they impart.

On which subject, the solo instrument of Mozart's Clarinet Concerto (Deutsche Kammerphilharmonie Bremen/Martin Frost, BIS SACD – lossless rip of CD layer) was beautifully-defined. Every nuance could be heard, and Frost's clarinet was in perfect balance with the orchestral backing.

Finally, I tried a DSD64 (Blue Coast DSF download) of Jenna

QUESTYLE
CMA600i £1000



OUTSTANDING - amongst the best.

VALUE - keenly priced.

VERDICT

A little operational inflexibility does not detract from what is a fine-sounding product, capable of driving practically any pair of headphones on the market.

FOR

- superb headphone drive
- tonally-balanced, rhythmic and detailed
- easy setup

AGAINST

- input switching could be improved
- can get rather warm in use
- some circuit-board bodes (performance unaffected)

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