

Power Chord!

Chord's awesome Hugo TT now has a matching power amp. Martin Pipe tries out the TToby.

A couple of years back, we reviewed the Hugo TT (Table Top) DAC/headphone amplifier. The TT can be connected to any amplifier on the market because it has a volume control. Few power amps match its distinctive styling so Chord have introduced the complementary TToby. Like its DAC partner, it has both phono and XLR inputs – you can't use both at the same time. I'd also advise disconnecting headphones from the Hugo TT, if listening via the TToby and speakers. Left plugged in, my Focal Utopias acted as a rather muffled and insensitive stereo microphone whenever the Hugo TT was switched off – odd. Another annoyance is that although the power switch of the Hugo TT is conveniently on its front panel, the TToby's is inconveniently on the back! But apart from that, the two units go very well together.

The substantial loudspeaker output terminals accept bare wire, spaded or terminated in banana plugs. Inside, the TToby is constructed to the impeccable standard we've come to expect from Chord. Despite what you might expect from such a compact package, the power amplifiers – 100 watts per channel

into 4 ohms, with less than 0.02% distortion – are not Class D. Instead, Chord has specified a Class AB design, based on paralleled pairs of latest-generation power MOSFETs. These transistors are heatsinked by the unit's generous metalwork. The power supply is a compact switch-mode design, eliminating the big transformer needed by a linear supply. This explains TToby's compact dimensions, along with use of the casework as a heatsink.

SOUND QUALITY

To assess the subjective performance of the TToby, I used Quadral Aurum Wotan VIII speakers and the Hugo TT as a source. This was fed by a Cambridge CXN streamer, accessing CD rips and HD audio from USB drives or folders on a NAS.

Radio 3's 320kbps AAC stream, as received via the CXN, revealed just how good the Beeb can sound over the 'net. Lunchtime and evening concerts featuring material from – amongst others, Stravinsky, Beethoven and Dvorak – made for a compelling listen. The natural organic musical flow of the Hugo TT is complemented by the speed of the TToby, leading to excellent reproduction of percussion and

transient detail. It's salutary lesson for those who still believe that FM (admittedly better than DAB) is the final word when it comes to listening to Radio 3 at home.

The Hugo TT and TToby are musical to an almost-analogue degree, but this partnership is no slouch in the analytical stakes either. Their resolving power means that if the BBC was ever to do the right thing and revive the summer's worthwhile 'Concert Sound' lossless stream, you'd be able to tell it apart from AAC. The two also fared well with recorded classical music, like a mid-80s digital recording (CD rip) of Sibelius' Symphony No. 2 in D major, Op. 43 (Vienna Philharmonic/Leonard Bernstein). It was clean, open and natural; the strings and brass, in particular, leaped out at me.

Pizzicato strings and delicate drum-rolls emerged from the soundstage. And when the music started speeding up in the scherzo of the third movement, as the symphony progressed towards its dramatic finale, clarity was maintained. There was not a trace of congestion!

The system's resolving power was also evident after switching to a completely-different musical style – Depeche Mode's early albums (24bit



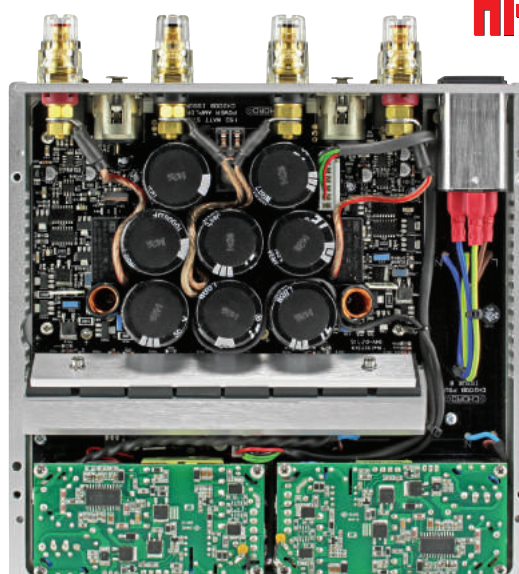
downloads). I could follow details (for example, the bright sequenced melody bubbling under the Speak and Spell track Photographic) as I never could with my original LPs. The band's experimentation with sound manipulation on Construction Time Again were experienced in a new light.

A later electronic album – the quirkily-vocoded glitchcore reinterpretations of classic songs, ranging from James Brown's Superbad to Lennon's Imagine, that make up Lassigue Bendthaus' Pop Artificielle – showed commendable control of the speaker's larger drive units when reproducing bass. Bendthaus' (another alter-ego of Senor Coconut Uwe Schmidt) cover of ABC's Be Near Me was a particular treat; its low-end was tuneful and satisfyingly-deep, when it needed to be. The

electronic percussion and synthetic atmosphere were endowed with an engaging vitality. No matter what was thrown at the Hugo TT and TToby – a wide range of other material, ranging from Radio 4 to ELO – they never let me down.

CONCLUSION

It's hard not to like this maverick combination. It's flexible – if you're prepared to overlook Hugo's lack of support for analogue sources – and proves that a musically-satisfying performance and an analytical nature need not be mutually-



The upper section of the internally-busy TToby is dominated by the amplifiers and a collection of smoothing capacitors. Beneath is a heat sink for the output devices. At the bottom are two fan-cooled (quiet!) switched-mode power supplies.

"Pizzicato strings and delicate drum-rolls emerged from the soundstage."



The TToby's power supply is built in, an IEC mains socket and adjacent but inconveniently located mains switch show. Robust quality 'speaker terminals and unbalanced (phono) and balanced (XLR) inputs are fitted. Only one can be connected though.

exclusive. My only serious criticism?

It's a shame that the amp's power switch is stuck away on the rear panel. For its part, Chord recommends leaving it switched on "when not in use" as "TToby consumes very little power when idle". When Chord gets around to designing their successors – WTA filters with even more 'taps', and Class D amps that do indeed exude 'raw power' – I hope some kind of triggering will be included, so that when you turn the DAC on or off the amp follows suit.

MEASURED PERFORMANCE

The Chord Electronics TToby power amplifier uses a switch-mode power supply and Chord Electronics Class A/B Mosfet output stage for compact case dimensions. It became very warm at idle; the case acts as a heat sink. Power measured 50 Watts into 8 Ohms and 90 Watts into 4 Ohms – enough to drive any modern loudspeaker to high volume, but a tad below the 100W claimed.

TToby managed low distortion, 0.01% at 1kHz and 0.07% at 10kHz, 1W, our analysis showing the latter. Whilst the harmonics are extended, their level is low and did not change in amplitude pattern with level – a good sign that suggests they will have little aural impact.

Frequency response analysis shows response into 4 Ohms, where it extends flat to 60kHz (-1dB). Into 8 Ohms this

figure was 80kHz (-1dB).

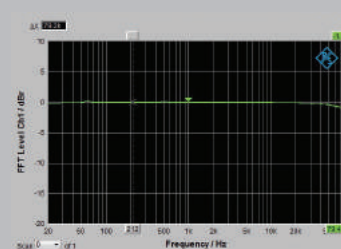
Input sensitivity of both Line (phono socket) and Balanced (XLR socket) inputs was identical at 0.7V, where 1V is common for power amps – so the TToby is sensitive. Noise was low at -95dB.

The output damping factor of 60 was negative, voltage rising slightly into a low load: Cambridge amplifiers have exhibited this in the past. Output impedance is very low so the aural impact likely minimal.

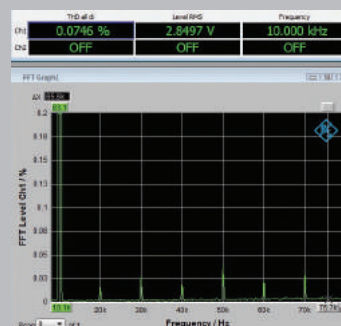
TToby measured well in all areas, if shy of Chord Electronics own figures in power and bandwidth. **NK**

Power (8 Ohms)	50W
Frequency response	4Hz-60kHz
Distortion (10k, 1W, 4 Ohms)	0.07%
Sensitivity	700mV
Noise	-95dB
Damping factor	60

FREQUENCY RESPONSE



DISTORTION



CHORD TTOBY



OUTSTANDING - amongst the best.

VERDICT

Enjoyable, revealing and gutsy.

FOR

- beautifully-made
- visually matches the Hugo TT
- insightful and powerful

AGAINST

- rear mains switch
- no power triggering

Chord Electronics
+44 (0)1622 721444
www.chordelectronics.co.uk