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OCTOBER 2006



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TREW FAITH

ASTINtrew's great new
affordable audiophile
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 - WD88VA VALVE AMPLIFIER Part 4



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SUPERPOWER
McIntosh's stunning
MC275 valve power amplifier



ASTINtrew is a new startup company making stylish yet affordable hi-fi separates. Channa Vithanna enjoys its idiosyncratic first system...

Trew Faith

Currently, for obvious economic reasons, it isn't often that a new hi-fi company is formed here in the UK. But ASTINtrew is one such rarity and is an interesting manufacturer because, firstly, they have an entire system from the outset, consisting of preamplifier, power amplifier and CD player, unlike some who can only afford to bring out just the one product, like an amplifier for instance. Indeed, ASTINtrew also have an AT6000 Clean Power Distributor unit for the mains, AT2000 integrated amplifier, plus a loudspeaker and cables out soon. Secondly, the superb design and build opposes the start-up trend by definitely not being 'hair shirt'.

The man behind it all is Michael Osborn, who is experienced in product design and engineering. He started ASTINtrew in 2004 and worked with an audio engineer in the UK to develop the electronics, while he designed the casework. So, why start a hi-fi company now? Michael states, "I felt there was a niche in the 'audiophile' market for a well priced entry-level product range with good sound and good looks. I also believed that the 'iPod generation' need to be brought back to the joys of listening to quality sound in the home; this is why I have offered an MP3 input on the fascia, along with both 6.3 and 3.5mm headphone/(in-ear) sockets."

While designed and engineered in the UK, the manufacturing takes

place in China. Michael says that, "from the outset, it was clear that manufacturing in the UK was a non-starter at the price band I was wishing to manufacture within. Manufacturing in the Far East has cost benefits, but managing potential (or real) problems is of course much harder from over here. (However) having a local engineer on my staff to resolve any production issues is very useful".

The system we have for review consists of the (£495) AT1000 preamplifier, (£645) AT5000 power amplifier and (£599) AT3000 CD player. The AT1000 preamplifier uses a Burr Brown PGA2311 resistor network volume control chip (and flywheel type dial) in favour of the

more traditional motorised Alps Blue volume potentiometer. Internally, for the power supply, the AT1000 uses a screened toroidal transformer with isolated power supplies for better sound. ASTINtrew says they, "chose to develop the valve line level stage using the ECC82 valve (one per channel) for a number of reasons. It is thought to be less microphonic than the alternatives and the Electro-Harmonix valves we use give a good balanced sound, unlike some other brands we tried. We are also fitting mechanical valve dampers on all valves. It does tighten up the sound and add to the imaging and is a good value addition. (Additionally) polypropylene input/ output capacitors (are used) for the best sound at the price."

For the headphone outputs ASTINtrew say, "Rather than use a cheap chip-based amplifier for the headphones, we wanted to offer a better sound. Our simple but neat single-ended Class A design does this well, we think." The AT1000 has a boxed weight of 9.1kg. It has an IEC mains socket at the rear, is fully remote controlled, supplied with a system remote with adjustable display brightness and six line inputs including tape and MP3.

The AT5000 power amplifier is a particularly unusual single-ended dual mono design with valves in the power supply.

"Dual mono design is the best way we know of producing an articulate stereo image. A dual wound single toroidal will always be inferior unless manufactured to a very high and costly specification. The two (overrated) 300VA toroidal transformers we use offer both channel isolation with plentiful dynamic headroom and bass control. The amplifier is a single-ended MOSFET design with some novel features. The signal paths are short and go through a small number of components, with short PCB tracks. The power supply is so important and in amplifiers in this price range, is where savings are often made. Our design does not skimp in this area. We have used Schottky diodes and multiple medium value electrolytic power capacitors along with some smaller values, offering an impressive 44 joule power capacity per channel. The design uses an ECC82 valve (one per channel) on the power supply side, providing a constant current high impedance load, as required in the design, it also acts as isolation from supply line variations and 'noise'. This is, as far as we know, a quite novel approach", adds Michael Osborne.

At the rear panel, the AT5000 features two sets of loudspeaker binding posts, phono socket inputs and an IEC mains input socket. It has a claimed 50W/8ohms or 95W/4ohms power output and a boxed weight of 15.5kg.

The (£599) AT3000 CD player is distinctive in that it uses a Phillips VAM1202 transport (and CD711 servo). This transport is isolated from the main casework by being mounted on a 4mm thick aluminium base plate, with compliant anti-resonance dampers between it and the plate. In operation, the transport itself is quiet and its disc-loading drawer glides in and out smoothly with low noise. The AT3000 uses a Burr Brown PCM1738 DAC. For the power supply, a 'C core' transformer has been used, which ASTINtrew says provides "separate power supplies for each section, (also) high quality electrolytic capacitors (are) used throughout (with) polypropylene input and output capacitors."

For the electronic design, ASTINtrew says, "a hybrid valve buffer output circuit for the AT 3000 was developed using the ECC88 double triode valve, selected for

its exceptional linearity. We have selected the Golden Dragon valve as being the most dynamic and cleanest sounding production valve we have listened to in this circuit. Valve buffers, in our experience, make CD players sound more analogue-like and represent a good 'pound for sound' option in a player at this price point."

The AT3000 has a selectable upsampling feature, indicated by an LED, on the front panel which is labelled 24 bit/ 96kHz. The display is adjustable and a full system remote is included. At the rear panel, there is a single coaxial digital output, IEC mains input socket and a set of analogue output phono sockets. The AT 3000 has a boxed weight of 9.1kg.

The casework, featuring flush-mounted hex-head fixings, uses attractively designed and gently angled aluminium panels with finely crafted heatsinks. The design reminds me of a sleeker, more



resolved version of the ones used by Alchemist from the nineties. Each unit measures 430x340x110mm and the finish and build quality is very good for the asking price as the gunmetal/ titanium finish is superb.

SOUND QUALITY

Kicking off with the AT3000 CD player, and I actually preferred it minus upsampling, because the sound had slightly more vitality. The rhythms from the cello, violin and viola of the Balanescu Quartet from their 'Maria T' release were reproduced with a surprisingly high resolution sound for the asking price. The timbre of the violins, for example, was excellent; they sounded well defined

"instrumental resolution was superb - the music was communicative and convincing..."

and extended while the deeper cello parts were agreeably deep, textured and also very nicely defined. Instrumental separation was excellent - the ASTINtrew system produced deep, wide and communicative music via the string music of the Balanescu Quartet.

On 'Yesterday Once More' by the Carpenters, the sound had excellent spatiality, which helped to create a wide and deep presentation. Instrumental separation was also super and thus clearly differentiated the lead vocals from the ostensibly easy-listening compositional style of the music. Instrumental and vocal resolution was accomplished, and combined with the fine spatiality - the music was communicative and convincing.

The simple acoustic arrangements at the beginning of 'Peace At Last' by The Blue Nile produced the perfect canvas for Paul

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Buchanan's longingly melancholic vocals. Both vocals and instruments had excellent definition, texture and resolution - and when the wonderful gospel break arrived, the ASTINtrew system was able to control this extra level of vocal texture and dynamics with ease, without stiffing its communicative ability.

The angular and asymmetrically arranged electronic music of 'Windowlicker' by Aphex Twin was handled with confidence and - impressively for the price - a very revealing quality that extracted and opened out the many layers to this piece. Bass was nicely extended and tuneful, which powered the rhythms for this sophisticated piece of electronica with cohesion.

When I compared the (£1,140) combination of the AT1000 preamplifier and AT5000 power amplifier to my more expensive reference, the (£1,595) Moon i-3 integrated using the AT3000 CD player, I found the Moon had slightly superior instrumental resolution with the Balanescu Quartet. Also the Moon just had the edge on timing, with a finer ability to reveal successive notes as they appeared from the recording. However, this was a rare occasion when the Moon sounded narrower in comparison to the lower-cost ASTINtrew amplification. Usually, whatever amplifier I compare it with, the Moon ends up sounding more free flowing and wider, but the ASTINtrew amplifiers had more spatiality and finer instrumental separation - no mean feat!

With the Carpenters, the Moon resumed its superiority with spatiality, rhythm and bass tunefulness while the ASTINtrew remained more adept at instrumental separation. The Moon was better rhythmically and with the definition of instruments with 'Peace At Last' by the Blue Nile while the ASTINtrew was superior with instrumental separation and Paul Buchanan's vocals were clearer. With 'Windowlicker' by Aphex Twin, the Moon - though rhythmically superior - was less revealing than the ASTINtrew in its ability to unravel those complex electronic layers.

One downside of the ASTINtrew pre-power combo was the power amplifier's behaviour at full output [see MEASURED PERFORMANCE]. In practice, at sensible volumes via my reference Waterfall loudspeakers, the inability of the ASTINtrew to deliver full power uniformly across the full frequency band didn't show itself, and the amplifier actually proved a most beguiling and musical performer - but the same cannot be expected at very high volumes,

or with less efficient speakers. As such, we'd recommend you partner the AT5000 with efficient loudspeakers such as Revolver's R45i.

Comparing the £599 AT3000 CD player to the £1,250 Unico CD at approximately twice the cost showed that the Unico had slightly more resolution and timbral depth to the cello, viola and violins with the Balanescu Quartet, but it was very close. On the Carpenters recording, the Unico had more resolution but was less good at instrumental separation. Conversely, The Blue Nile recording had superior instrumental and vocal resolution via the ASTINtrew while the music sounded more diffuse and less well defined with the more expensive Unico.

CONCLUSION

Surprises all round, then, at what this very individual and characterful 'clean sheet' designed ASTINtrew system managed to achieve. The (£495) AT1000 preamplifier, (£645) AT5000 power amplifier and (£599) AT3000 CD player offered a generally clear and open window into all the music. Correctly matched with sensitive speakers, the AT1000 preamplifier/ AT5000 power amplifier combination proved more than capable of scrutinised comparison with my more expensive Moon Audio i-3 integrated. It bettered it with some music, as did the AT3000 CD player when compared to the more expensive Unico CD. The ASTINtrew components work best as a complete system, serving up a wide and deep spatiality with the added discipline of superb instrumental separation.

Considering their performance as separates or as a system, ASTINtrew provides much needed competition for the

REFERENCE SYSTEM

Unison Research Unico CD player (£1,250)
Moon Audio i-3 integrated amplifier (£1,595)
Waterfall Victoria loudspeakers (£2,000)

MUSIC

Balanescu Quartet, 'Maria T' (2005)
Carpenters, 'Singles 1969-1981' (2004)
The Blue Nile, 'Peace At Last' (1996)
Aphex Twin, 'Windowlicker' (1999)

likes of Arcam, Marantz and Roksan et al, due to their individualistic visual identity, distinct design values, fine sound and excellent build. Instead of doing another 'me too' range of generic looking and sounding separates, they've come up with something really different.

MEASURED PERFORMANCE

The chunky At 5000 power amplifier produces a modest 45W into 8ohms, rising to 72W into 4ohms, less than expected considering size and weight. Distortion levels and spectra looked good in the midband but deteriorated significantly at high frequencies. The AT5000 had a problem here, as it would not swing full output at 10kHz on either channel. It managed around 9V maximum (10W) into 8ohms before severe waveform distortion (greater than 3%) set in. At 1W output the amplifier's output distorted badly above about 25kHz too, a performance easily bettered these days. If it isn't run hard the AT5000 power amplifier gives good results, but not when pushed. It will give a rough or coarse sound at high volume, as the distortion spectrum was extended and severe. The circuit uses J162/ K1058 complementary MOSFETs in push-pull, used by Elektor back in 1984 in their Crescendo amplifier.

The preamplifier provides a useful x 3.8 gain at 1kHz, giving an effective input sensitivity in conjunction with the power amplifier of 260mV. Bandwidth was wide and noise low, like the power amp.

This combo is best used with sensitive floorstanding loudspeakers to best appreciate its strengths, whilst avoiding its weaknesses.

Although a budget player, the At 3000 frequency response extends smoothly from 2Hz up to 21.1kHz and there's no deviation from flatness at high frequencies so the player should sound evenly balanced, without either warmth or sharpness.

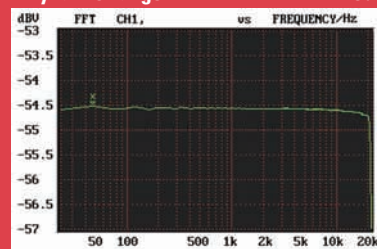
Distortion was low at 0dB, measuring 0.006%. At -30dB - a typical average music level, the result was no different, which is good. At a low music level of -60dB distortion remained low at 0.23%, helping toward a good EIAJ dynamic range figure of 111dB, on par with the best players available. The only wrinkle with this player appeared in the amount of jitter on the digital output; it measured a high 400pS around 400Hz. If this is not eradicated by re-clocking before the internal convertor then there

will be some wiriness in the sound. This player would not make a good transport for an external convertor.

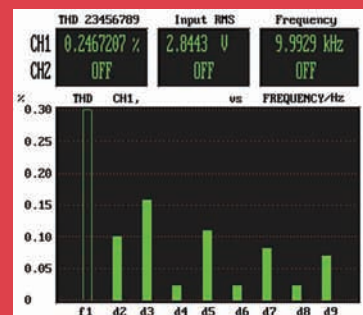
In spite of the above, considering its budget status the At 3000 measured well. NK

AT1000 & AT5000 pre & power	
Power	45watts
CD/tuner/aux.	
Frequency response	2Hz-130kHz
Separation	82dB
Noise	-91dB
Distortion	0.14%
Sensitivity	260mV

AT3000 CD	
Frequency response (-1dB)	2Hz-21.1kHz
Distortion	
0dB	0.006%
-6dB	0.004%
-60dB	0.23%
-80dB	2.8%
Separation (1kHz)	-122dB
Noise (IEC A)	-113dB
Dynamic range	113dB



CD player frequency response



Power amplifier distortion spectrum of 0.25% at 10kHz, 1W,

VERDICT

This unusual combo sounds great at the price if matched with efficient speakers - with a musical and explicit sound - but won't work in everyone's system.

ASTINTREW AT3000	£599
ASTINTREW AT1000	£495
ASTINTREW AT5000	£645
ASTINtrew	
+44 (0)1491 414 494	
www.astintrew.co.uk	

FOR

- clear, enveloping sound
- fine instrumental separation
- design, build and value

AGAINST

- power amp matching issues