

Mini Max

Tony Bolton tries a fascinating hybrid integrated amplifier in the shape of Abingdon Music Research's AM-777...

When a company calls itself Abingdon Music Research, you might reasonably expect them to be based in the area of that Oxfordshire town. In fact the name was chosen as a tribute to free thinking that challenges the status quo, a methodology which enabled the BMC (British Motor Corporation) Competition Department (based in Abingdon) to develop the humble Mini into a world class rally car!

Founded in 2001 by Pat Wayne, Vincent Luke and Thorsten Loesch, the company is based in London, with a wholly owned assembly plant in China. The majority of the manufacturing is done in-house, and the parts that aren't, are contracted out to companies with a background in the aerospace industry. The transformers (of which there are three – one for the digital circuits, one for analogue, and one for the non-audio control functions) are made by an ex-military establishment in China, while the chassis manufacture is outsourced to Taiwan. The feet come from Canada, and use a type of rubber that is normally used to attach wings to an aeroplane...

AMR first came to note with their Reference Class 77 series of electronics. This latest range, the Premier Class 777 series, so far includes this amp, a matching CD player and a HD/Classic Digital Processor. The circuit layouts are somewhat unconventional. Most designers work with either valves or solid state electronics – AMR use both, in the same box.

Now, hybrid components aren't a new idea, but they are a rarity. In the case of the amp, the thermionic section is the preamplifier, with the power amp using transistors.

Both parts are housed in a beautifully machined alloy case, available in either silver or black, which measures a fairly standard 450x120x370mm and weighs 14kg. The Perspex screen which occupies a goodly part of the fascia houses the Vacuum Fluorescent Display, which gives a countdown in seconds after switching on, before the unit is ready for use. Once a couple of clicks have been heard, the display then shows the input selected and the volume setting. These functions are controlled by the buttons beneath the display, their usage indicated by engravings in the casework. At the back are four corresponding phono sockets for the line level inputs, one of which doubles as the only XLR input. Along with these is a USB socket which is connected to the onboard DAC, and a set of substantial speaker binding posts.

As previously mentioned, this is a hybrid design, using a Russian New-Old-Stock double triode valve (a 6H1N) for the preamp section. Each of the different sections of the preamp have carefully chosen capacitors – Sanyo Oscons in the digital section, Panasonics in the PSU and Elnas in the analogue stages. The DAC is a 16bit Philips multibit unit, similar to the one fitted to the company's matching CD player. The power amplifier section is also unusual in featuring a circuit called 'OptiGain' which feeds errors in the audio signal to the ground side of the output as well as the positive, causing the speaker to cancel out the errors. (a diagram showing this is on the 'Features' page of the AM-77 Dual Mono Amplifier section of the AMR website.)

Apart from the circuit topology, there are other little examples of AMR logic. The remote control, a touchscreen device that accesses menu options as well as the usual

control facilities, has a bulge at one end that contains the batteries and also forms a foot, so the unit can be stood upright. It sounds a small thing, but it was one remote that I never lost amongst the detritus on the coffee table!

SOUND QUALITY

I started my listening on the downstairs system, with the AM-777 powering the Charios. Although the amp is solid-state in the power section it effectively runs like a valve amp and has a switch labelled 8R and 4R at the back for matching the impedance of your loudspeakers. The amp is unusual in maintaining the same 60W per channel output regardless of the 'R' setting chosen. There are two other switches there, one for the XLR/ phono sockets and the other adjusts the unit's configuration from stereo amp, to monoblock, or bi-amp option. This allows for other units to be added as required to extend the system. It is also possible to use the AM-777 either as just a preamp or solely a power amp.

Having matched the 4 Ohm requirements of the Ursa Majors, I settled down to a progressive trance album by the Swiss based artist Cafu. This was his first full length album, released in 2007 and features distorted and twisted guitar sounds over a pulsing bass line with bongos,





high hats and synths completing the soundscape. I was immediately taken with the way the rather loping feel to the beat was transmitted. Although not the deepest or most floorshaking bass that I have heard through these speakers, it was alive and writhing on the carpet in front of me. This was reinforced by the speed of attack on the bongos. It had a flow that felt correct, not overly fast and furious, but just as it should be. I was also impressed with the spaces around the sounds. They were impressively black, and caused me to initially misjudge how big the soundstage was. Although not cavernous, it was big enough to house the musical events happening within it, extending a good eighteen inches beyond my speakers.

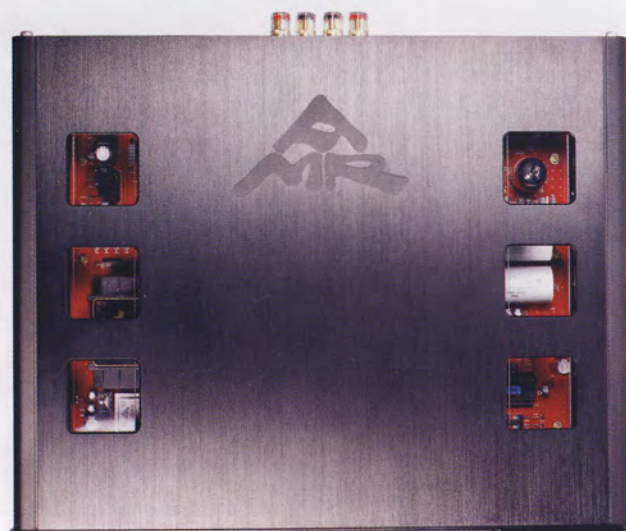
Having played this disc through the Antilla CD player, I then loaded it into my MacBook and played it again, but this time using the USB connection from my hard-drive to the AMR's DAC. Although not as well staged as the sound from the optical disc, the results were very creditable, retaining the tightness of the beat

and most of the detail in the imaging.

Later on I was still playing dance music but had moved back a few decades. The Temperance Seven were an anachronism when they first formed in the mid 1950s, playing very faithful versions of twenties and thirties hits. Their most successful era happened just pre-Beatles, taking 'You're Driving Me Crazy' to number 1 in 1961 and following that up with another three top 30 hits in a matter of months. The '... Ballspond Road Cocoa Rooms' LP was a 'best of' released some four years later and presented the sounds of the twenties in beautifully recorded stereo. Each band member had his spot, with elbow room around, the vocals of 'Whispering' Paul Macdowell a little to the front and dead central. Given the AMR's seeming love of all things rhythmic, as you can imagine, I thoroughly enjoyed myself.

The following day the AM-777 moved upstairs to drive my Kelly KT3s. These are a nominal 6 Ohm load, so I tried the 'R' switch

in both positions. I soon settled on the 4R setting again, since the other produced a sound through these speakers that was very bass-light. Rated at 95dB efficiency the Kellys were also far less demanding of the available power than the Charios (60W is the manufacturer's recommended minimum for these



speakers). So I settled down to a fairly loud rendition of Janis Joplin's second LP 'Cheap Thrills'. The wail at the start of 'Summertime' which initially sounds almost random, but comes in perfectly on the note as the guitars join in, was intense and almost a tangible entity, and led into a very absorbing performance. The rawness of the vocals and the drive of the guitars was well displayed.

The following day I played mostly classical music before wandering through a bit of opera. The Trio ('Soave sia il vent') from Mozart's 'Cosi Fan Tutte' was a delight. Measured in pace, precise in placement, a showcase for the mixed harmonies of two sopranos and a baritone, with strings and woodwind providing complimentary harmonies – it showcased the AMR to perfection.

CONCLUSION

AMR designer Vincent Luke told me that part of their design specification was to provide the smoothness and delicacy of the single ended triode sound, with enough power to make it usable with a wider range of speakers than the normally low output power of such amps allows. In this respect I feel they have largely succeeded. The sound is highly focused, and given any sort of beat, meticulously timed. There is emotion portrayed, be it the earthiness of Joplin, or the wishes for safe travel of two loving girlfriends in 1790s Naples. I did feel that there was a certain reticence in the sound that initially was a little disconcerting, but actually felt correct. I liked the manners of this amp. – it didn't try to force the listener to take notice, but laid the music out on display, then seemed to step back and let the tunes speak for themselves.

The drawback is its ultimately limited power. In real terms 60W per side should be enough for most people, but fairly efficient speakers are recommended, and if you are into playing heavy rock music loudly, then you *might* be better served elsewhere. It worked quite well with the Charios but was a lot happier wired into the Kellys. Having said that, I did have to play pretty loudly before the amp started to sound as though it was working a bit hard. Overall then, a very enjoyable and innately musical amplifier, well made and thoughtfully designed.



MUSIC USED

Mozart, 'Cosi Fan Tutte', Schwarzkopf, Ludwig, Kraus, Taddei, Steffek, Berry, Karl Bohm conducting Philharmonia Orchestra and Chorus, His Master's Voice Records SLS 5028

The Temperance Seven, 'Direct From The Ballspod Road Cocoa Rooms', Music For Pleasure Records MFP 1322

Big Brother and the Holding Company, 'Cheap Thrills', Columbia Records PC 9700

Cafu, 'Wake Up', Plusquam Records PLU1CD114

REFERENCE SYSTEM

Clearaudio Master Solution turntable
Clearaudio Carbon Satisfy tonearm
Benz Micro Ace cartridge.
Ortofon Vivo Blue cartridge
Audio Technica AT-F7 cartridge
Leema Acoustics Tucana II integrated amp
Chario Ursa Major loudspeakers

MEASURED PERFORMANCE

Power output was a modest but useful 60 Watts into 8 Ohms from this large amplifier, rising to 72 Watts into 4 Ohms, with the rear panel slide switch set for 8 Ohm loudspeakers. With the switch at 4 Ohm both figures fell, to 40 Watts and 64 Watts respectively, but regulation improved slightly suggesting bass might sound a bit firmer. The amplifier has an unusually low damping factor of 11 whether set for 8 or 4 Ohm loudspeakers, so there appears to be series output inductor a bit bigger than the usual Zobel network, unless that is the designers have done this to better mimic a valve amplifier.

During power tests the AM-777 ran absolutely cool; there were no hot areas and little heat from the top vents. This suggests Class D working, as did the presence of a steady 28mV tone on the output at 84kHz, unaffected by volume. However, the AMR-777 was neither bandwidth limited nor did it produce unusual patterns of distortion and it has in fact a normal bi-polar output stage. Current limiting cut in after 20 seconds or so running into 4 Ohms so there is overload protection and this will limit heat production too.

At all output levels and frequencies distortion comprised just second harmonic, as our analysis shows, and this is subjectively innocuous, a very good result. Level measured just 0.06% at 1 Watt output at 10kHz into 4 Ohms.

Input sensitivity was low at 460mV via the phono line inputs and XLR set to Pro. Setting XLR to hi-fi dropped input sensitivity to a very low 1.3V, so Pro gives the normal result and 'hi-fi' likely cuts out a gain stage, perhaps the valve.

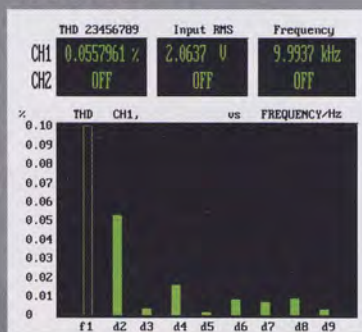
Frequency response via USB measured flat to 16kHz with a 44.1kHz sample rate digital signal, before rolling down. Full volume from a 0dB digital signal came up at -11 on the volume

control so there is analogue gain to spare.

The AM-777 measures well and should certainly sound easy and full bodied like a valve amplifier. It has enough power to go very loud with largish modern loudspeakers. The valve preamp will add a sense of depth too, so all in all it looks strong as a flexible hybrid. NK

Power	60 Watts
CD/tuner/aux.	
Frequency response	5Hz-32kHz
Separation	72dB
Noise	-89dB
Distortion	0.03%
Sensitivity	460mV

DISTORTION



USB FREQUENCY RESPONSE



VERDICT
Interestingly designed, beautifully built integrated with a charmingly lyrical sound.

AMR AM-777 £3,295
Select Audio
+44 (0)1900 863064
www.selectaudio.co.uk

FOR
- excellent rhythmically
- smooth, musical sound
- USB input.

AGAINST
- needs efficient speakers
- bass extension