

STEREO / DIGITAL INTEGRATED AMPLIFIERS

NAD M2

The dawn of a new age?

VITAL STATISTICS

Power output	>250 watts/channel (20 Hz -- 20 kHz, 8 ohm)
Sampling rates	32 -- 192 kHz
Frequency response	20 Hz to 20 kHz (\pm 0,3 dB, single-ended)
Signal-to-noise ratio	95 dB (A-weighted, ref 1 watt)
Analogue inputs	1x stereo RCA single-ended, 1x stereo XLR balanced
Digital inputs	2x coaxial digital, 2x Toslink optical, 1x AES/EBU
Outputs	1x coaxial digital, 1x Toslink optical (tape loop)
Dimensions (WxHxD)	435x133x454 mm
Weight	20,2 kg

VERDICT

Trend-setting digital amplification technology meets sonic nirvana in this landmark product. A glimpse of the audio future, perhaps. Beautifully built, too.

PRICE R 66600

SUPPLIED BY AV Specialists 021-946-1441

WEBSITE www.avspecialists.co.za

Digital amplification may be nothing new in the broader consumer electronics context, but it's still something of a dirty word -- or at least a controversial one -- in upper-end audio circles.

However, it turns out that not all digital amplifiers are created equal. While Class D designs are not uncommon (B&O is one high-profile marque that has successfully subscribed to this amplification type with great success for some time now), they are sometimes plagued by distortion and digital noise issues.

No wonder that NAD is at pains to explain that its M2 Direct Digital integrated stereo amplifier is not a typical Class D design. Instead, the M2 employs an innovative technology NAD has dubbed Direct Digital.

In simplified terms, Direct Digital refers to a truly digital amplifier that, by definition, is a D/A converter with the ability to drive a loudspeaker directly via a PWM output stage. NAD claims that its technology, developed together with the UK-based Diodes Zetex Semiconductor, retains the precision performance associated with top-class, dedicated DACs.

At the core of the M2's design is Direct Digital Feedback -- a process similar in concept to the negative feedback design of many conventional, analogue amplifiers. However, in this case, the digital output signal of the NAD is compared to a reference signal to define and create an error factor. The resultant error signal is digitised and fed back to the PWM output stage, where it is used for accurate error correction.

Direct Digital Feedback means that PWM output amplification can be applied directly after digital conversion, without any need for a primary, conventional analogue amplification stage -- often a feature of more conventional, so-called digital amplifier, designs.

As a result, one should consider the M2 as a high-end DAC with a novel and effective output stage, rather than as a conventional amplifier.

The M2 is equipped with a choice of coaxial RCA, Toslink optical and AES/EBU digital inputs. In addition, it does accept analogue signals via either a stereo pair of single-ended analogue inputs, or a set of XLR balanced inputs.

The analogue data is converted into a 24-bit digital signal via an internal analogue-to-digital converter, with a user-selectable sampling rate of 48, 96 or 192 kHz.

The M2 has a 35-bit data path, while the digitally processed volume control operated at 24 bits. The 11-bit difference allows ample attenuation scope without any resolution loss. In practice, the rotary volume control allows accurate adjustment in 0,5 dB steps.

Of course, one of the primary benefits of digital amplification is high efficiency, which means that the M2 does not require huge power supplies or massive heatsinking. Still, the M2 uses three switch-type power supplies: one for each channel, and a third for the control and switching stages.

The M2 can be used in a power amp/DAC role only, in partnership with a conventional pre-amp, and also offers a digital processing loop.

Besides being able to define the ADC's digital sampling rate for incoming analogue signals, the M2 also allows output impedance adjustment in seven steps to match the amplifier's top-octave output to the speakers connected.

The gain offset of the analogue inputs can be adjusted, as can the M2's absolute polarity. For convenience, each of the inputs can also be renamed to reflect their source.

As we've come to expect of NAD's Master Series components, build quality is excellent, with superbly executed casework, and close attention to detail, while steering clear of aesthetic ostentation.

The front fascia features a central alphanumeric display, a standby button, a large rotary volume control, source selection buttons, and a menu button that allows access to the set-up features of the unit.

The rear panel has a main power switch, kettle-type power cable socket, and dual sets of gold-plated binding posts to aid dual cable runs for bi-wireable speakers. The input and output sockets are top-grade and everything is tidily presented and clearly labelled.

I reviewed the NAD with my Vivid Audio V1.5 speakers, and utilised the stalwart Esoteric UX-3 universal player as my primary digital source. However, I also used the digital signal from a Wadia 170 transport and iPod Classic with lossless WAV files, and the digital output from a Marantz KI Pearl Lite SACD/CD player as sources.

For comparison, I ran the Esoteric's balanced analogue outputs into the XLR analogue inputs of the NAD, and even tried the RCA inputs by feeding it from my Electrocompaniet ECP-1 phono stage, in turn linked to a Linn LP12/Ittok/Ortofon Cadenza Black record deck.

A varied music choice included Jeff Beck's 'Emotion and Commotion' on CD and vinyl (still one of my favourites, as well as a real blast from the past: Rickie Lee Jones' eponymous first album, including the landmark 'Chuck E's In Love' -- still one of the snappiest, best recorded pieces of music around.

Also on the list were SACD recordings of Haydn and Mozart chamber music by The Fry Street Quartet, from the excellent Isotek series from Kimber Kable, and music by Steely Dan ('Aja'), Supertramp ('Crime Of The Century'), Norah Jones ('... Featuring Norah Jones') and John Pizzarelli ('With A Song In My Heart').

Sonically, the M2 impressed from the outset. There was more than ample output scope, and plenty of headroom: the amplifier showed off a propensity for authority, control and grip -- but never to the extent of strangling the music's energy or *joie de vivre*.

The tonal range was as broad as the original recordings would allow: a deep, incisive bass response with real presence and punch, linked to a meaty but fluid midrange and clean, open treble. The tonal progression was smooth and largely linear, with a slight bloom at the bottom end and no sign of any digital glare at the upper level.

I particularly enjoyed the M2's ability to create a majestic soundstage with sweeping sonic panoramas. The music was presented with its dimensionality and substance intact, creating that sense of presence and placement so vital to the realism of a listening experience.

In that sense, the M2 was not only able to render individual instruments and voices, but also to place them in the context of their acoustic environment and the ambience of that locale.

This was especially noticeable in the case of the Fry Street Quartet recordings, where the music was able to soar unfettered, while also allowing the listener to experience the intimacy and closeness of the recording.

By contrast, the bright, energetic performance and wide staging of Robben Ford and the Blue Line on their eponymous CD was perfectly presented. This recording can sound a little aggressive in the trebles, but the NAD seemed to make the most of the detail and clarity, without any sign of brittleness.

The M2 treated all digital sources used with equal respect: lossless WAV files from my iPod, delivered via the Wadia 170i transport sounded superb in every respect, as did music sourced from the digital outputs of the Marantz KI-CD Pearl Lite.

In short, in the digital domain, the M2 is a sonic star on all counts, with all the pace, dynamics, presentation scope and musical flair one could hope for.

Comparing the Esoteric's analogue XLR output fed into the M2's analogue input to the digital signal path, the former sounded slightly coarser, with more grain to the upper midrange and the treble, and a somewhat more constrained soundstage.

I experimented with the input gain settings, but while a higher gain could lead to input overload and distortion, this was not the cause of the differences. Of course, we're talking small distinctions here: in real terms, the analogue source sounded open, believable and enjoyable, but in my system, I preferred the digital path.

The NAD M2 is a pioneering product, and a sign of things to come. It's one of the very few high-end components to operate almost solely in the digital domain, and its flexibility in accepting digital signals, and making the most of the material, is quite astonishing.

It suffers none of the (sometimes overstated) vagaries of digital amplification, offers tremendous operational versatility, and delivers its sonic wares with musical integrity and precision. Given the increasing propensity of server-based, high-quality digital material, the NAD M2 points the way to an exciting digital future.

Deon Schoeman