

# Denon PMA-2500NE

Grander and more flexible than its earlier 2000 series, Denon's new flagship integrated combines the design inspiration of 'talented newcomers' and veteran engineers alike  
 Review: **Ken Kessler** Lab: **Paul Miller**

**A**fter reacquainting myself with Denon last month with the review of the superb DCD-2500NE SACD player, I've been enjoying the matching amplifier. Like the SACD player, the PMA-2500NE (or 'New Era') integrated falls into the category of 'entry level to the high-end', because £1899 is still a lot of dosh for an integrated, when there are plenty to be had for under £300. But this is no ordinary integrated.

Denon has never forsaken two-channel, despite offering multichannel 'universal' players and AV receivers, and it has always demonstrated outstanding commitment to proprietary digital processing and power supply technology. Here the R&D has paid off with a deceptively conventional-looking stereo integrated amp that is anything but. So, aside from the lack of some trick advanced digital connection to exploit its sister SACD player beyond the shared AL32 processing, this is a high-res-ready product to serve the modern enthusiast.

It seems to address everything bar one lone legacy source, as this has a tape loop and an MM/MC-selectable phono stage (with screw terminal for the earthing), but there is no mention of FM radio. Of course, its inclusion would make this a receiver, and you can add any tuner you like, but one suspects that this will be used to access radio-via-Internet thanks to the plethora of digital inputs, which tally two coaxial, two optical and USB-B.

Interestingly, one of the line inputs is labelled 'network', alongside 'aux' and 'recorder'. All are addressed sequentially when using the input selector, with the display situated between the source rotary and the absurdly huge motorised volume control, showing the input source name, type of digital audio signal and sampling frequency. Everything is duplicated on the supplied remote. For convenience's sake, the PMA-2500NE uses exactly the same

remote as the SACD player, and there is a remote IR switch-on connection at the back for powering it up at the same time.

## 'ANALOG MODE' NICETIES

The unit has a fine headphone amplifier with ¼in socket on the front, there are pre-out sockets (in addition to the tape loop) and there are bare-wire/spade lug – but not 4mm banana plug-friendly – terminals for two sets of speakers, or for bi-wiring.

As for the traditionalists among you, aside from the aforementioned phono stage with 47kohm MM input and 100ohm MC settings, there are two other niceties to ensure a philo-analogue stance. The 'analog mode' button turns off the display and switches off power to the digital input, or you can toggle to keep the display on, while 'source direct' bypasses the balance,

bass and treble controls, all in aid of good, purist housekeeping.

Having accepted that Denon does, indeed, care about the unsullied purity of the analogue feeds, the digital section is just as impressive. The PMA-2500NE handles files up to 384kHz/32-bit and DSD up to 11.2MHz from a computer; the D/A converter is the same 384kHz/32-bit PCM1795 DAC used in the DCD-2500NE, so those who buy the pair can have hours of fun comparing the SACD player-via-line out vs a digital feed into the amp's DAC.

As the unit runs warm, and there are heatsinks flanking the two transformers, one should not stack anything on top of it. Unfortunately, the matching SACD player isn't as deep, so that precludes positioning it *under* the amp. Hammering it with the Wilson Alexias [*HFN* Mar '13] caused it no



**RIGHT:** Denon employs two PSU transformers mounted to cancel 'mutual influences of magnetic flux' while the output stage utilises just a single pair of MOSFETs [see boxout, p51]



grief. Power – an unbelievably conservative factory rating of 2x80W/8ohm – comes from a section with ultra-high current MOSFETs, and, man, does this amplifier have some grunt [see PM's boxout, below, and Lab Report, p53].

### SHINING WITH SACD

Besides the matching SACD player, I also employed the SME 30/12 [HFN Mar '09] with Clearaudio Goldfinger MC [HFN Jan '15], my MacBook Air, the Astell & Kern Jr player, KEF LS50 loudspeakers [HFN Jul '12] – a sublime match, on IF Stands – and Crystal Cables throughout.

I connected the DCD-2500NE with both digital and line outputs, and flipped between the two, but I won't spoil your fun by telling you which I prefer. I also used the Marantz DV8300 in both modes, too, to remind myself of what a bargain I found at the Audiojumble [see p18].

As you'd expect, the two Denon components loved each other like Cersei

and Jaime, and I admit to being charmed by the single remote, and general freedom from hassle. But to offer some sort of context, I concentrated on the two with the KEFs, for a total price of under £5000 including cables. This is not a budget system, so please don't let my casual manner upset you. Suffice it to say, in today's terms, that's 'upper-mid-price'. But wow! What a thrill for the money!

As I wanted to concentrate on

SACD, having spent so much time with the DCD-2500NE before approaching the amplifier, I dispatched the phono stage and USB input in swift order. As for LP playback, using the superb 45rpm cut of Big

Brother & the Holding Company's *Cheap Thrills* [Mobile Fidelity MFSL2-453], I was enchanted for all the wrong reasons.

Let's face it: this was one sloppy band. The guitar playing was often out of key, and even Janis could sound scrappy... but that was the charm. MoFi has made the

'The Belafonte SACD was almost terrifying in its authenticity'

**ABOVE:** Minimalism disguises what this offers, with only 'analog mode' and 'source direct', beyond the self-explanatory volume and input controls, driving you to the owner's manual

best of a raw performance with more warts than a classic of this level should possess, but you could say the same for any blues 78s recorded in hotel rooms in 1935. The PMA-2500NE – with its unbridled power, wide dynamic contrasts and super-quiet behaviour – allowed me to hear stuff that I didn't know lurked in the grooves, and I must have played the old LP 100 times.

Of course, I was so stoned in 1968 that even a Dansette would have sounded like high-end, but this was particularly rewarding. Joplin's main virtue was not the tonal quality of her voice – she was no Bonnie Raitt, no Linda Ronstadt – but anguish that was of a calibre associated with Aretha or Etta, which, after all, is what audio scribes, audiophiles and audio manufacturers have been banging on about for 40 years: emotion.

Feeding a moving-coil cartridge costing more than the two Denon units combined sounds silly, but the PMA-2500NE's phono stage appears joyously noiseless, detailed and precise. A burst of the vintage 1960s LA sessions sound of Dino, Desi & Billy's *I'm A Fool* [Reprise RS-6176] allowed me to confirm what I'd heard when PMC's founder Peter Thomas dropped by: Reprise's studios had a sound not far off the much-praised Capitol sound of a decade earlier, and the PMA-2500NE certainly allowed you to hear its 'character'.

But where this amplifier shone was with SACD/DSD, whether via its onboard DAC or that of the DCD-2500NE. Almost terrifying in its authenticity and sense of space was the near-mythical *Belafonte At Carnegie Hall* [Analogue Productions CAPT 6006SA]. It's enough that every aspect from voice to percussion to audience was recorded →

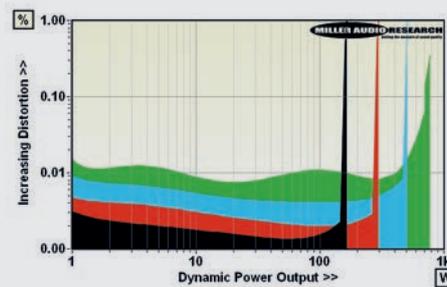
## WHEN LESS IS MORE

While the majority of amplifiers are still designed to share the burden of output current across multiple pairs of power transistors, particularly in big power amplifiers such as those from Krell [HFN Oct '14], Bryston [HFN Jun '16] and D'Agostino [HFN Feb '16], the availability of 'UHC' (Ultra High Current) output devices is now encouraging the design of hefty amps based on just a single pair of power transistors. Danish brand GamuT has long promoted the idea that a single pair of very capacious NPN/PNP power transistors – MOSFETs in this case – can form the heart of a far simpler, more elegant and more linear amplifier than one comprising paralleled pairs of loosely-matched devices [HFN May '15]. Sony has also used a single pair of devices, per channel, in its TA-A1ES amplifier [HFN Mar '14] which, coincidentally, shares the same 80W/8ohm rating as Denon's PMA-2500NE. Both amplifiers readily exceed this specification, the Sony at 110W/180W and the Denon at 125W/200W into 8/4ohm although the latter offers far greater output into lower speaker impedances than Sony's less physically intimidating amplifier [see Lab Report, p53]. PM

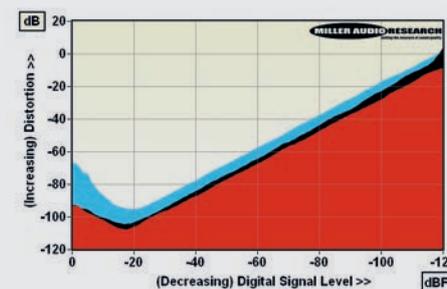
## DENON PMA-2500NE

There's little significant difference in measured performance with the PMA-2500NE's 'Source Direct' engaged as distortion remains very low indeed at <0.001% from 20Hz-1kHz over its rated 80W range, increasing quite steeply beyond 5kHz to reach 0.035%/20kHz and 0.12%/40kHz. The response holds to  $\pm 0.2$ dB (20Hz-20kHz) although the overall gain is excessively high at +46.6dB, yielding a 13mV sensitivity for 1W/8ohm and depressing the overall A-wtd S/N ratio to a slightly below-average 81dB (re. 0dBV). This also means its massive volume knob will rarely be employed over the ideal stretch of its track. Power output is hugely impressive however and, at 2x125W/8ohm and 2x200W/4ohm, well in excess of its 80W/160W 8/4ohm rating. Under dynamic conditions it offers considerable headroom – 165W, 300W, 510W and 777W (27.9A) into 8, 4, 2 and 1ohm loads [see Graph 1, below].

Measured via its 'rec out' RCAs (2.3V at 0dBfs), the performance of the PMA-2500NE's digital section is broadly in line with that described for the partnering DCD-2500NE [HFN Jul '16], specifically its behaviour with impulsive versus steady state signals where the response falls to -6.6dB/20kHz versus -1.7dB/20kHz with 44.1kHz inputs, respectively). Here the S/PDIF input bests USB with a 109.7dB A-wtd S/N vs. 104.1dB, although the latter has the lowest jitter of 20psec versus 170psec. Distortion climbs quite rapidly with frequency from 0.003%/1kHz to 0.04%/20kHz and 0.1%/40kHz at 0dBfs with a minimum of 0.0004-0.0018% achieved at -20dBfs [see Graph 2, below]. Similarly, the response with high-res 192kHz inputs, which rolls away to -14.4dB/90kHz, dictates the response of the amp as a whole (-3.7dB/100kHz in analogue mode). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) loads. Maximum current is 27.9A



ABOVE: THD vs. digital signal level over a 120dB range at 1kHz (S/PDIF, red; USB, black) and 20kHz (USB, blue)

## HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	125W / 198W
Dynamic power (<1% THD, 8/4/2/1ohm)	165W / 300W / 510W / 777W
Output impedance (20Hz-20kHz)	0.011-0.013ohm (580ohm, rec)
Frequency response (20Hz-100kHz)	+0.0 to -3.7dB (Analogue)
Digital jitter (S/PDIF / USB at 48kHz)	170psec / 20psec
A-wtd S/N ratio (re. 0dBW/0dBfs)	81.2dB (Analogue) / 109.7dB (Dig)
Distortion (20Hz-20kHz; 0dBW/0dBfs)	0.0008-0.033%/0.0025-0.042%
Power consumption (idle/80W)	56W / 368W
Dimensions (WHD) / Weight	434x182x431mm / 25kg



ABOVE: Three line, one tape in/out and MM/MC phono ins are joined by a preamp input and digital ins across S/PDIF (two optical, two coax) and asynchronous USB. Wired control is included and pairs of chunky 4mm speaker sockets assist bi-wiring

to perfection, with a naturalness that establishes a benchmark for persuasive sound reproduction. But – and I hate to keep returning to a non-sonic aspect of playback – the ‘feel’ of the hall’s space was chilling.

### FINDING THE GROOVE

It was the illusion of a massive venue recreated in the confines of a 4x6m room. The walls disappeared – although I don’t discount the role of the remarkable little KEFs in this equation. Again and again, I was staggered by the way a £5000 system came so close to what anyone would be grateful for from something costing double that.

It was certainly the amplifier that was contributing more than its share, because – wedded as I am to the belief that SACD is superior to CD – the use of red book discs was no let-down. The equally acoustic *If You Leave...* from Eleanor McEvoy [Moscodisc MOSCD40120] shares its ‘unpluggedness’ with the Belafonte disc, if not the sheer scale of NY’s Carnegie Hall.

Instead, it was revealing for its intimacy. Rather than the grandeur of a massive stage, the McEvoy experience was ‘in the room’, and not a nuance escaped the amplifier. Moving to the sheer kick of the Detroit Emeralds’ ‘Feel The Need’ [Greatest Hits, Westbound CDSEWD 119] on a conventional CD, it was clear that the PMA-2500NE could treat strings, brass, vocals and chunky, rollicking bass, crisp drumming and slithery guitar all with aplomb.

‘Rock The Boat’ by The Hues Corporation [The Very Best Of The Hues Corporation, Camden 74321 603422 CD] pushed the envelope with whucka-whucka guitar, massed

harmonies and strings that can sound dire on cheap systems.

Underlying it is a rhythmic bass pattern countered by percussion breaks that interweave transient expressions with flowing notes. Denon’s PMA-2500NE found the groove, locked on and made me reach for that bad-ass volume control that really needs to be calibrated to ‘11’ – you just want to see what it’ll do, like a muscle car that can take corners.

I signed off with Love’s *Da Capo* [Mobile Fidelity UDSACD 2130], which I’m starting to prefer to my original vinyl pressing – draw-and-quarter me, but the detail is remarkable. The all-Denon chain found greater striation between the layers in the more complex tracks, allowing the listener – er, me – to concentrate on the subtleties that made Love such a remarkable band.

All it took for me to give the nod to the PMA-2500NE was the way it dealt with the delicacy of ‘Orange Skies’, with convincing flute that I could check just by listening to my wife practicing, followed by the proto-thrash insanity of ‘Seven And Seven Is’. The Denon truly is a righteous master of all trades. ☺

## HI-FI NEWS VERDICT

If this is typical of the ‘compleat amplifier’ circa 2016, then I’m dazzled. For under £2k, it covers most contingencies, with sound to charm, admirable build quality and enough power to allow you to ignore any feelings of inadequacy. It even made a reasonable fist of the Wilson Alexias, and the phono section was a total surprise. But this shines because it can be most things to most people in the age of convergence.

Sound Quality: 86%

