

Denon PMA-30

Denon expands its stylish and compact Design Series of separates with a simpler, more affordable compact amplifier, but is the PMA-30 a bargain buy, or just a cut too far?

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When Denon launched the first of its Design Series models with the PMA-50 amplifier and DCD-50 CD player [*HFN* Nov '15] it was the start of something big for what was then the D+M Group. Stablemate Marantz also revived its MusicLink brand on a series of scaled-down components, starting out with the HD-DAC1 DAC/headphone amp [*HFN* Apr '15], as the two brands attempted to find ways of selling hi-fi to a customer base clearly out of love with conventional separates.

Denon is now reinforcing its range with new arrivals including the DCD-100 CD player/transport in a widened format to match the all-in-one DRA-100 network receiver, plus a brace of new stereo amps. The PMA-50 is replaced with an upgraded PMA-60 model, gaining extended hi-res file handling and some further sound-tuning, while slotting in below it is the amplifier we have here, the £340 PMA-30, undercutting the PMA-60 by some 30%. Clearly this is a product aimed at further boosting the appeal of the Design Series, and making a compact little system at an attractive price but, as we'll see, along the way some corners have necessarily been trimmed.

MACHO SEPARATES

So what's all this 'design' hi-fi thing all about, anyway? Well, there's long been a feeling among hi-fi companies that one of the major deterrents when it came to the purchase of 'proper' hi-fi was the need for a stack of black boxes to achieve music playback. While some of us rather liked the somewhat macho swagger of a complete Linn or Naim stack of matching boxes, none of which had an immediately apparent purpose as they all looked the same, it was clear not everyone shared our taste for a wall of electronics. I long ago remember being in the Virgin Atlantic lounge at Heathrow, where there used

to be a music room with a complete Linn system, and finding a chap in there who looked up at me when I entered and said, somewhat plaintively, 'Have you any idea where the disc goes in?'.

Of such frustrations was born the trend for upmarket mini-systems, of which Denon itself was a pioneer with its 'DM' series of the early 1990s. The idea was to produce matched hi-fi components in miniature, able to sit on a shelf or sideboard rather than a dedicated equipment rack – another off-putter for many potential buyers – and yet deliver a very high standard of performance.

That original Denon concept has been much copied and refined over the years, and the latest iterations, including the current D-M41DAB model, have seemingly

'de-evolved' back down to one-box 'just add speakers' systems, albeit offering a fairly remarkable performance for their size and price. In one compact unit, less than half the width of a conventional hi-fi component, the D-M41DAB delivers CD playback, DAB radio and Bluetooth, and

like past versions of this concept, has earned a reputation as something of a giant-killer.

I recall a conversation with *HFN*'s KK in which we both expressed something between surprise and delight at

the ability of these little Denons to drive even quite serious speakers with both conviction and ease. And the same goes for the company's CEOL systems, which take the same abilities and clad them in some sharper threads, courtesy of sleek gloss

'There's a trick up the range's sleeve too – a rotating display'



RIGHT: Switchmode PSU services Denon's choice of a Texas Instruments amplifier module [see boxout] in addition to its S/PDIF digital input. Idle power consumption is just 11W



LEFT: The bright OLED display flips through 90° to match the orientation of the amp's chassis (see below) and also includes some basic menu functions

Design Series was completely different, with Denon going back to its core hi-fi separates competencies and working out how to make what it describes as 'Real Hi-Fi for Today's Lifestyles'. The result is a separates approach, but with an all-in-one twist. For example, the DCD-50 CD player (and the more recent DCD-100 iteration) may have built-in digital-to-analogue conversion, but it's principally designed to be connected digitally to one of the Design Series amps, making use of the superior conversion therein.

DESIGNER 'FI

Moreover, the Denon Design Series has a contemporary style all of its own while Marantz has gone unashamedly retro with its Music Link components, the use of cues such as the blue LED, porthole display and (unfortunately not real) wood side-cheeks giving them the look of classic models of the past rendered in miniature. The Design Series has a gloss black wrap around the product sandwiched between thick aluminium top and base plates, giving the whole enterprise a feeling of solidity and, to some eyes, a sort of Apple-like feel.

There's a party trick up the range's sleeve too. Thanks to a square

OLED panel, usually to the left of the central volume control on the amp, and detachable and remountable feet, both the PMA-30 and PMA-60 amplifiers and DCD-50 player can be switched from a 'normal' orientation to standing on end. From 'landscape' to 'portrait', if you will, with the display auto-rotating itself to suit. So what might initially look like a gimmick makes perfect sense if you choose to use these units vertically in 'desktop audio' guise.

Other neat touches include its casework which extends rearward to shroud the connections and a restyled remote handset [picture, p67] that manages to be both compact and substantial-feeling, with small but clear buttons and a wraparound silver plastic moulding echoing the style of the PMA-30 itself. However, this amplifier is a cut-price version of the PMA-60, and it shows not just in the choice of simpler technology under the lid [see PM's boxout, below], but in reduced flexibility.

So this new budget amp loses Denon's Advanced AL32 Processing Plus and, most significantly, the USB-B 'computer audio input' along with its ability to handle ultra-high-resolution audio. The PMA-60 will run to 384kHz/24-bit and DSD128/5.6MHz when connected to a computer while the PMA-30 is limited to 192kHz/24-bit via its digital inputs, of which there are three (one coaxial and two optical) alongside a single set of analogue RCA inputs.

SAY 'NO' TO BLUETOOTH

Whether or not that's a deal-breaker is really up to how you view hi-res audio, and what you're planning to use with the amplifier. For many people 192kHz/24-bit

is more than enough, and anyway they won't be wanting to do much more than connect a CD player to the amplifier, or perhaps Bluetooth over some music from their phone which, of course, the PMA-30 will readily do.

For all that, the PMA-30 remains quite a looker, and while it won't tread

on the toes of its pricier siblings, it's still an impressive performer for its size and price. By way of context, I tried it with both digital and analogue connections from the DCD-50 player Denon provided for the review period [see inset picture, above]. I also fed it from my Mac mini running Roon, connecting from USB to coaxial via the

black or white casework and some added networking facilities, including local and Internet music playback.

However, while the DM models have been good and the CEOs have attracted plenty of attention, they're still essentially all-in-one systems. The thinking for the

POWER GAMES

While the new PMA-30 looks just like the original PMA-50 model [HFN Nov '15] it does not employ the same cool-running DDFA (Direct Digital Feedback Amplifier) module from CSR (Cambridge Silicon Radio Ltd, a subsidiary of Qualcomm Technologies International Ltd). Instead, it uses a Texas Instruments TAS5558 module that accepts digital inputs up to 192kHz and supplies a PWM output for its Class D power stage. And here's the good news – despite being rated at a reduced 40W/4ohm, the PMA-30 is actually *more* powerful than the older '50W/4ohm' PMA-50. Our lab tests [see p67] indicate that the PMA-30 will deliver closer to 45W/75W into 8/4ohm, out-pacing the 27W/55W offered by Denon's PMA-50 under the same real world conditions. It's possible that this change in technology is what prompted Denon to release a beefier replacement – this is the PMA-60, using the same DDFA technology as the PMA-50. PM



AMPLIFIER/DAC

LAB REPORT

DENON PMA-30

While the PMA-30's S/PDIF inputs handle hi-res files without downsampling, its analogue input ADC samples at 48kHz only, reducing the amplifier's response to 20Hz-20kHz $\pm 1\text{dB}$ (+0.9dB/20kHz). With 96kHz/24-bit digital inputs this extends to $-1.95\text{dB}/45\text{kHz}$ after peaking at $+0.4\text{dB}/40\text{kHz}$ into 8ohm. This is a function of many Class D amps where the treble response typically rolls off with falling load impedance, reflecting the increasing source impedance of the amplifier itself – from 0.5ohm/1kHz to 1.7ohm/20kHz and 17ohm/45kHz. In this case the amp's top-end frequency response dips from $+0.35\text{dB}/20\text{kHz}$ into 8ohm to $-0.9\text{dB}/20\text{kHz}/4\text{ohm}$, $-2.8\text{dB}/20\text{kHz}/2\text{ohm}$ and $-5.3\text{dB}/20\text{kHz}/1\text{ohm}$ (all with 48kHz inputs). So the tougher the speaker load, the more 'muted' the PMA-30 will sound. Nor will the massive 4150psec of mainly data-induced jitter prove a boon to clarity (by comparison, Denon's PMA-50 incurred a mere 200psec with 48kHz/24-bit files).

Maximum power output is limited by digital governance that prevents more than 45W being developed into 8ohm, this increasing to 79W, 55W and 31W (5.6A) into 4, 2 and 1ohm loads under dynamic conditions [see Graph 1, below]. Distortion increases with load, output and frequency from 0.005%/1kHz to 0.2%/20kHz at 1W/8ohm and 0.05%/1kHz to 0.5%/20kHz at 10W/8ohm [see Graph 2] while the A-wtd S/N is slightly compromised by a 600Hz drone to the tune of 80dB (re. 0dBW). The partnering DCD-50 player offers a 'standard' 2.1V peak output from a high-ish 885ohm impedance, enjoys a healthy 106.5dB A-wtd S/N ratio, incurs a low 120psec jitter and moderate 0.003-0.04% distortion. Finally, linearity is good to $\pm 0.3\text{dB}$ over a 100dB range. PM



ABOVE: No USB for Denon's entry-level PMA-30 but it does offer two optical and one coaxial S/PDIF digital in, analogue line in, subwoofer out and 4mm speaker terminals

excellent Gustard U12 digital audio interface as well as using the Mac's own optical output straight into one of the PMA-30's Toslink ports.

Yes, the sound here is marginally grittier and thicker than I recall from the PMA-50 I listened to again not so long ago, but by the standards of £350 amplifiers in general the PMA-30 is powerful, coherent and essentially very musical – and that's without any allowances being made for its compact size. Mind you, it's certainly worth switching off the Bluetooth facility if not in use, as it can make things slightly cloudier when activated.

REALISTIC LIMITS

There's good slam with the 'Mixes' set from The Pet Shop Boys' three-disc *PopArt* package [Parlophone 07243 595678 2 2] – these period pieces, all of 14 years old, being driven via the PMA-30 and a pair of Neat Iota Alpha speakers [HFN Oct '16] with both attack and control. And yes, the little Denon amp will go loud, too – within reason – without showing overt signs of distress.

When it reaches its limits, which will probably be way beyond those of your ears, especially in the modestly-sized rooms for which the amp is designed, there's a gentle thickening up of the sound to warn you things are being pushed too far and that you should back down a bit. There's also a slight tendency to treble softness here, so that the live recording of U2's *The Joshua Tree*

on the recent 30th anniversary set [Island Records 0060255752741] lacks some of its explosive power and atmosphere. On the other hand, there's no denying that this cute Denon amp punches out the bass-lines and drums like a good 'un, doing its best 'little engine that could' impersonation, while offering a persuasive view of both Bono's vocals and The Edge's jangly guitar.

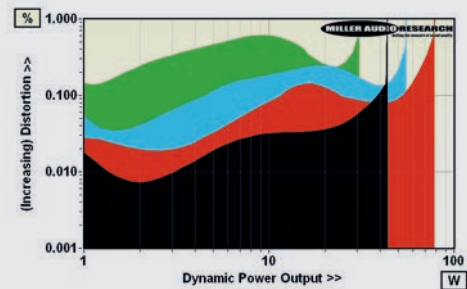
CLASSICAL COLOUR

Similarly large-scale orchestral works are delivered in just a slightly dry manner, but with their scale and timbral colours largely intact, as is apparent when playing Daniel Barenboim's complete set of Bruckner symphonies with the Staatskapelle Berlin [Peral 481 2407]. The great sweep of the music is impressive enough, but if one listens in closely for the finest nuances of the recording, one has to work a little harder than would be the case with a more open, detailed and, most probably, slightly costlier integrated amplifier. ⚡

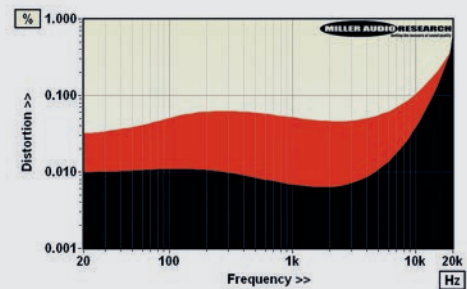
HI-FI NEWS VERDICT

Unlike the PMA-50 that preceded it, the PMA-30 is no giant-killer. Some will be put off by its simplified range of inputs, but this affordable amp has a job to do in Denon's Design Series, and its slightly restrained sound, while getting to the heart of the music, won't aggravate the kind of speakers with which it's likely to be used. This is a well-judged, highly commercial product – and it's none the worse for that.

Sound Quality: 75%



ABOVE: Dynamic output vs. THD into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) loads



ABOVE: Distortion vs. frequency from 20Hz-20kHz at 1W/8ohm (black) and 10W/8ohm (red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	44W / 78W
Dynamic power (<1% THD, 8/4/2/1ohm)	45W / 79W / 55W / 31W
Output impedance (20Hz-20kHz)	0.505-1.7ohm
Freq. resp. (20Hz-20kHz, 8/4ohm)	-0.0 to +0.33dB / +0.0 to -0.9dB
A-wtd S/N ratio (re. 0dBW / re. 30W)	79.5dB / 94.3dB
Distortion (20Hz-20kHz, 0dBW)	0.0050-0.22%
Digital jitter (48kHz, 0dBW)	4150psec
Power consumption (idle / 30W)	11W / 87W (2W standby)
Dimensions (WHD) / Weight	200x90x238mm / 2.5kg