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# Mark Levinson No585

Featuring a built-in DAC with hi-res-capable USB input, the long-awaited integrated amp from Harman's high-end Mark Levinson brand is a powerful all-in-one package

Review: **John Bamford** Lab: **Paul Miller**

**B**ack in the 1980s when CD was new, marketing folks might erroneously have called the Mark Levinson No585 a 'digital amplifier'. A replacement for the old No383 100W integrated amp has been anticipated for many years, and when it was previewed at Munich's High End exhibition last summer it was revealed that it would be an all-encompassing integrated component priced at £10,500, featuring a built-in DAC and a suite of digital as well as analogue inputs.

Parent company Harman International Industries, manufacturers of high-end Revel loudspeakers and Mark Levinson electronics – alongside JBL Synthesis and Lexicon electronics, and JBL's statement 'Project' speaker designs, in the conglomerate's Luxury Audio Group division – has spent the past few years undergoing some major restructuring 'in the background' while maintaining its day-to-day operations.

## A BEEFY REPLACEMENT

As a consequence, fresh-up Mark Levinson products have been relatively few and far between, exceptions during recent years being the awesome No53 flagship monoblock priced at £23,500 [*HFN* Jan '11] and, somewhat later, the No52 'Reference' preamplifier (£28,000) to partner them, an awesome two-box design which can lay claim to being one of the most desirable preamps in the world [*HFN* May '14].

Recently Harman has opened a brand new electronics R&D facility in Connecticut, headed up by Todd Eichenbaum [see interview, p31]. The reorganised design team there is busy on a raft of designs and this new 'entry-level' amplifier is Mark Levinson's first integrated since 2006, when the No383 was discontinued.

Rated at 200W/8ohm, the No585 is considerably more beefy than the No383 and is a fully balanced Class A/B design

employing 12 output devices for each channel in a double mono configuration. At the heart of the amplifier's on-board digital audio processing stage is an ESS Sabre 32-bit D/A converter with proprietary jitter elimination and fully balanced, discrete current-to-voltage circuitry.

The USB interface employs a USB audio processor from C-Media capable of asynchronous data transfer of PCM files at up to 192kHz/32-bit resolution and DSD natively at both 64 and 128fs with supplied ASIO drivers.

The No585 has many separate power supplies, each optimised for its particular function. First, a small switching supply is

used to provide power for 'housekeeping' functions while the unit is in standby. Second, a larger one powers the digital and control circuitry. Finally, eight linear power supplies, four per channel, provide power to all the analogue circuitry.

Separate outputs from a 900VA toroidal transformer feed the left power amp, the right power amp, and the left and right power supplies for the analogue preamp circuitry. Four linear voltage regulators, two per channel, provide 'a quiet, rock-steady power source for critical preamp and DAC analogue circuitry' says the design team. It employs individual signal switching relays for each of its analogue inputs, while



**RIGHT:** A single 900VA transformer (with dual secondaries) feeds independently-regulated supplies for the 12-transistor strong Class A/B power amp(s) and DAC section





volume adjustment is via discrete 15-bit R-2R resistor ladder networks and low-noise analogue switches.

### COVERING ALL BASES

As is typical of all Mark Levinson components, the No585 has been designed with meticulous attention to detail, in order to ensure extremely high sound quality commensurate with its price. It employs a heavy-gauge chassis and card-cage architecture to isolate critical low-level analogue and digital circuitry, and features audiophile-grade internal components and top-quality rear-panel connectors [see pic, p33].

At the same time it features comprehensive functionality to accommodate real-world installations rather than simply appealing to 'purist' knit-your-own-sandals types. It has four analogue and six digital inputs to cover pretty much all possible source requirements and the fascia sports buttons

for governing display brightness, absolute phase polarity, mute, balance (in 0.1dB steps), and for entering the amplifier's configuration menu [see boxout].

All functions, including standby on/off, can also be accessed via the amplifier's IR handset, a compact all-metal affair which is perhaps the product's only let-down. It just doesn't sit in the hand anything like as satisfactorily as the stubbier and more rounded handset that accompanied the old integrated model (still supplied for use with Mark Levinson's current preamplifiers).

Curiously, the new handset adds 'transport' keys – next, previous, pause/play and stop – for controlling computer audio playback via USB. Correct functionality can't possibly be guaranteed with all Mac and PC music playback software, however I can confirm faultless operation with foobar2000 and JR Media Centre running under Windows – although I question its real usefulness.

'Clari-Fi is meant to restore "the full listening experience"'

### ON THE MENU

As with the brand's existing preamps – and the long defunct No383 integrated which this No585 replaces – there are myriad settings one can configure via the set-up menu. The analogue and digital input levels can be trimmed to even-out level differences between sources, inputs can be named as well (a most desirable feature never to be overlooked) and minimum/maximum output levels determined – including the muting level. The No585's line outputs can be configured to be fixed level (for recording) or variable (to facilitate a 'preamp output'), and if set to the latter and used to drive powered subwoofers there's the option of switching in a 80Hz high pass filter. And any one of the amp's four analogue inputs can be chosen to act as a pass-thru' for integration with a surround processor if required. The DAC's choice of 'Sharp', 'Slow' and 'Minimum Phase' digital filters for playback of PCM files [see Lab Report, p33] are also selectable, as is a choice of 47, 50, 60 or 70kHz filters for when playing DSD files.

**ABOVE:** Rotary source selector and volume controls are also used to navigate the amplifier's configuration menu, such as naming/trimming inputs. They flank the unit's red display

'Scrubbing' within tracks isn't supported, and if you're pushing into the amp's USB input from a computer and want to avoid using a keyboard and/or mouse, won't you be navigating your music collection using a control app on a phablet? Surely most users will...

A further button on the new handset, placed prominently in centre position, turns the amplifier's 'Clari-Fi' processing on/off. A function of the digital section's on-board DSP, Clari-Fi is a proprietary 'music restoration' algorithm that claims to identify which music sources have been lossily compressed and, in real time, restore playback to the 'full listening experience'.

### FILTERS BURIED IN THE MENU

As with Sony's DSEE or Pioneer's 'Sound Retriever' processing designed to enhance the sound quality of compressed media, it's moderately successful at adding clarity to low-bitrate audio, seemingly boosting the 5-12kHz frequency region to add some pizzazz. Clearly, audiophiles will pay it scant attention as it's more appropriate to in-car audio and portable playback systems than the pursuit of high fidelity *per se* – but I did find it quite effective when streaming YouTube videos and the like.

Most owners surely will find it a lovely amplifier to use thanks to its easy-to-read display and ultra-fine volume adjustment in circa 0.1dB increments. Even the law of the volume control can be configured to taste. Nevertheless, audio enthusiasts keen to experiment with the DAC's filters on the fly will rue the fact that the filter options are buried in the menu and not *directly* ➔



## TODD EICHENBAUM

While Harman's near-legendary design facility in Northridge, CA, continues to focus on speaker design, electronics such as its prestigious Mark Levinson components are now developed in Shelton, CT. Head of the new Shelton development team is Todd Eichenbaum, who joined Harman in Feb '13

after spending a lifetime designing components for Krell Industries. In his youth he studied electronics engineering and after gaining his degrees he worked as a designer at Krell until 1995, leaving to work on a series on upmarket in-car audio components for specialists Precision Power Inc. Three years later he returned to Krell as the company's senior analogue engineer and was promoted to become Krell's VP of product development in 2008.

Says Todd: 'As a student I remember having what I would call a life-changing moment when I compared the amplifier I then owned to a Mark Levinson. It was fantastic in every aspect: detailed, three-dimensional, and just plain huge. It was also completely unaffordable! I went home disappointed, but excited at having heard what was possible from high-end audio.'

'We've ten engineers focused on rejuvenating the Mark Levinson product line. We've just showed our latest No536 mono power amp at CES, one of several ground-up designs scheduled for release in the near future.'



**ABOVE:** Fresh styling is a little 'cleaner' and more modern – while remaining characteristically 'Mark Levinson'. Substantial heatsinks are encased within the chassis frame to avoid sharp edges

switchable via the handset. And when using the on-board DAC the amplifier's display only indicates incoming sampling rate for a brief moment – if and when the sampling frequency *changes*. Mind you, this is adequate to determine that your computer source has been correctly configured in the first place.

### **SUPERB TRANSPARENCY**

Feed any good quality source into the No585 and its sophisticated sound is instantly apparent.

It appears as more powerful, 'faster' and more immediate than the No383 of old – a tad more crisp and vivid. It just seems 'cleaner', and it delivers more explicit low frequencies, with

no soporific softening of leading edges through the midband and HF.

Revisiting the 96kHz/24-bit recording of the jazz/rock combo Vantage Point (featuring drummer Simon Phillips and pianist Jeff Babko) made for the DVD-Audio album *Resolution* produced by Mark Waldrep [AIX Records AIX 80040] revealed just how vigorous a performer the amplifier is, and confirmed its first-rate transparency to fine detail.

Waldrep's hi-res productions are uncompromisingly explicit, and this new amplifier was excellent at showcasing the recording's lifelike dynamics, and it delivered images of the musicians performing in a natural space in a most convincing manner. All the while the sound remained endearingly luscious and

'relaxed', with a smooth midrange and sweet treble but without ever appearing too creamy and mellow.


Light-footed while simultaneously meaty and powerful, it's every bit a high-end performer, despite its 'entry-level status' in the Mark Levinson product portfolio. It proved perfectly competent at exposing the dexterous plucking by guest bassist Alphonso Johnson and revealing his subtle phrasing, where too often the clarity of the bass can be masked by the wallops of

Simon Phillips' kick drum in this 'live take' AIX recording.

It's also wonderful at carrying music's inflections and accents. Whether it was with hi-res demo tracks or any regular recordings

in my current playlists, this new amplifier threw a most musical, accurate and detailed soundstage in front of me.

On *New Moon Daughter* [Blue Note Japan TOCJ-5996] Cassandra Wilson's opening 'Strange Fruit' had all the sumptuousness and atmosphere I'm accustomed to hearing from this track, with the cornet solo at the beginning occupying a perfect space at the rear of the soundstage. The reverberation tails sounded convincingly natural. I was entranced by the manner in which the amplifier portrayed the atmosphere in her psychedelic jazz re-working of Tommy Boyce and Bobby Hart's classic 'Last Train To Clarksville'.

And on Keith Richard's under-appreciated solo album *Main Offender* 

*'It is wonderful at carrying musical inflections and accents'*

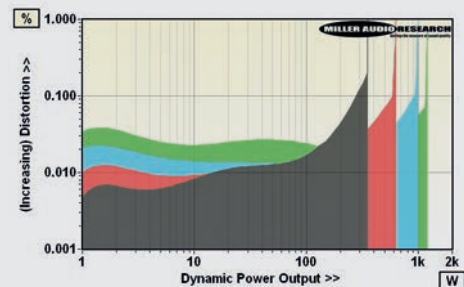


## LAB REPORT

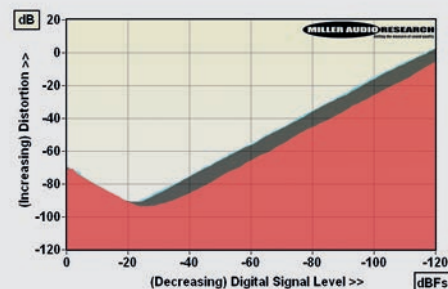
### MARK LEVINSON NO585

Levinson's 0-80 volume control (scaled in steps of 0.1 but not precisely  $\pm 0.1$ dB) is accurate to  $\pm 0.5$ dB over the top 60dB of its dynamic range. The No585 is also very powerful, obliterating its 200W specification with a 2x285W/8ohm and 2x455W/4ohm performance, increasing to 355W, 635W, 988W and 1211W ( $\sim 35$ A at  $<1\%$  THD) into 8, 4, 2 and 1ohm loads under dynamic conditions [see Graph 1, below]. Distortion increases gently from 0.007%/1W to 0.02%/100W and 0.03% at the rated 200W (all at 1kHz) but also at very low frequencies – 0.05% at 20Hz and 2.5%/5Hz (10W/8ohm). The response is somewhat load-sensitive, extending down to  $-0.04$ dB/20Hz but varying at 20kHz from  $-0.1$ dB,  $-0.25$ dB,  $-0.5$ dB and  $-1$ dB into 8, 4, 2 and 1ohm. The S/N ratio is healthy at 89.4dB (re. 0dBV).

Tested via the pre-outs (power amp disabled) THD via the S/PDIF and USB inputs rises quite quickly beyond 2.5V so a 'standard' 2V/0dBfs level was established at Vol = 61.4. THD is moderate but consistent at 0.04% (100Hz-20kHz, but 0.12% at 20Hz) and reaches a minimum of 0.001-0.0012% at  $-25$ dBfs [see Graph 2] while the A-wtd S/N ratio is a respectable 108dB via S/PDIF and only slightly poorer at 105dB via USB. Low-level resolution is good to  $\pm 0.2$ dB over a 100dB range. The three digital filters influence response, stopband rejection and time domain ripple – 'Sharp' ( $-6.3$ dB/90kHz) is a conventional brickwall type, 'Slow' ( $-9.6$ dB/90kHz) has the least pre/post ripple but the poorest stopband rejection while 'Minimum Phase' ( $-6.0$ dB/90kHz) offers an acceptable stopband rejection (75dB), no pre-event ripple but the most post-event echo. 'Slow' would be my choice for 96/192kHz music files. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Maximum current is 34.8A



ABOVE: THD vs digital level over a 120dB range via line out (S/PDIF 1kHz, red & 20kHz, black; USB 20kHz, blue)

### HI-FI NEWS SPECIFICATIONS

Power output ( $<1\%$ THD, 8/4ohm)	285W / 455W
Dynamic power ( $<1\%$ THD, 8/4/2/1ohm)	355W / 635W / 988W / 1211W
Output impedance (20Hz-20kHz)	0.025-0.130ohm
Frequency response (20Hz-100kHz)	$-0.03$ dB to $-1.28$ dB
Input sensitivity (for 0dBW/200W)	25mV / 365mV (balanced)
A-wtd S/N ratio (Analogue/Digital)	89.4dB (0dBW) / 107.7dB (0dBfs)
Distortion (20Hz-20kHz, A/Dig)	0.05-0.0045% / 0.12-0.040%
Power consumption (Idle/Rated o/p)	88W / 845W (1W standby)
Dimensions (WHD) / Weight	434x193x506mm / 34kg



ABOVE: Two coaxial and optical S/PDIF digital ins plus USB and AES/EBU are joined by three RCA analogue line ins (one pre out), one balanced XLR in and 'Hurricane' 4mm speaker terminals. System controls include Ethernet, RS232, IR and 12V triggers

[Virgin CDVUS 59] the amplifier delivered the infectious verve of the musicians' performances with aplomb. Tracks such as 'Wicked As It Seems' fizzed with pent-up energy, while on 'Will But You Won't' I could actually hear when the second guitar mic feed opened up, prior to hitting the loud pedal and letting rip.

### REVEALING DEPTHS

All the while I'd been listening to the amplifier's built-in DAC. So turning attention to the performance of the No585's DAC section I set up some straightforward comparisons, listening in turn to a T+A DAC 8 [HFN Oct '12] and Antelope Audio Zodiac Platinum [HFN Feb '15] hooked up to the amp's balanced inputs.

Differences in sonic presentation were fascinating – largely in terms of subjective tonality and 'character'. The T+A sounded characteristically vivid and razor-sharp, a tad more squeaky-clean, while Antelope's Zodiac (which costs almost as much as the No585 when partnered with its Rubidium clock) appeared more robust, 'organic' and free-flowing.

I never felt the least bit short-changed listening to the No585's built-in D-to-A converter – possibly because any qualitative variations in using a more costly separate DAC can become masked by the necessity for interconnecting cables. There's much to be said for having everything integrated – though future upgrading becomes less straightforward, of course.

Due to the No585's crisp immediacy I sometimes thought it a little 'lean' in bass weight, only to be caught off guard by recordings containing true low-bass content.

One such moment came when listening to 'Comes Love' from Joni Mitchell's exquisite *Both Sides Now* album (recorded in London's Air

Studios) in 96kHz/24-bit resolution [DVD-Audio, Reprise 47620-9], when the bass trombone doubled by the string bass suddenly go very deep indeed. So not only is the No585's midrange extraordinarily transparent and clean, it is also very revealing of low frequency detail.

And Vince Mendoza's sumptuous orchestral arrangement in 'At Last' was served up with a tremendous sense of space thanks to the amp's subjectively super-quiet background – fine detail such as the quiet piano notes balanced low in the mix hovering like a halo above Mitchell's cigarette-scarred contralto.

In the world of high-end audio an integrated amplifier might be considered something of a 'compromise', especially one with an on-board DAC. But not here, the Mark Levinson No585 delivering a powerful sound with superb dynamic-range capability, smooth and grain-free high frequencies, an uncoloured, natural-sounding midrange, and possessing the ability to throw a wide, deep and stable soundstage. I could live happily ever after with it, it's that good. ☺

### HI-FI NEWS VERDICT

Proof positive that you don't have to have a rack-full of separate boxes in your living room to enjoy fabulous high-end music replay, the No585 integrated unit sounds simply sublime – and delivers adequate power to drive even pretty demanding loudspeakers. Its built-in hi-res PCM and DSD-capable USB DAC makes it even more desirable for those wanting a no-compromise set-up while remaining resolutely clutter-free.

Sound Quality: 89%

