

THE HOME OF REAL HI-FI

hi-fi news

& Record Review

Exclusive

VINYL'S FLAGSHIP

Technics 'Reference Class' SL-1000R turntable

AKG N5005

The ultimate earphones?

Bel Canto

e.One Phono preamp

Mark Levinson

N°523/N°534 amplifiers

Budget Esoterica

ELAC's entry-level

Miracord 70 LP spinner

INVESTIGATION

Stream Squeeze

The battle for hi-res audio on demand

Horns of plenty

Klipsch goes back to the future with the Forte III

Micromega M-150

The new slimline 'digital ready' amp from France



• PLUS 18 pages of music reviews & features • VINYL RE-RELEASE Magazine's *Real Life* on 180g vinyl
• OPINION 12 pages of letters & comment • VINTAGE REVIEW Amcron 'prosumer' D-75 amplifier
• SHOW BLOG We report from Stockholm High End • READERS' CLASSIFIEDS Hi-Fi bargains galore

UK £5.25 US \$13.00 Aus \$13.50



Micromega M-150

This slimline amplifier from an established French brand may suggest another product from the same country, but it's a very different prospect with some unique features

Review: **Andrew Everard** Lab: **Paul Miller**

So, it's a slimline amplifier, and it's French – already thinking of the 'D' word? But while it might seem that the M-One amplifiers from Micromega could be 'inspired' by the success of Devialet's range, in fact they have little in common beyond their country of origin and a passing resemblance in dimensions: under the skin they're very different animals.

There are two models in the range, of which the £5390 M-150 here is the more powerful, advanced – and, of course, expensive. Its companion model, the M-100, is priced at £3490. Both share the same low-slung styling, and are also resolutely based around conventional amplifier design thinking, rather than the analogue/digital hybrid technology of their compatriots in Paris.

FAN-TASTIC BOXFULL

How has Micromega managed to cram standard Class A/B power stages, rated at 150W/8ohm – and, as PM's lab results show [p55], delivering a bit more than that – into an enclosure standing less than 6cm tall complete with its spiked feet? Well, a lot of it is down to clever heat-management, with a central heatpipe for convection cooling aided by a small, silent fan under thermostatic control, the only outlets being visible on the two side-panels.

But while the 'engine room' may be all-analogue, what goes before manages to combine directness and flexibility, making this one of the most versatile amplifiers to have passed through the *HFN* listening room in a good while. Hidden away under the rear overhang of the casework, which tidies all the messy wiring away from sight, are not just simple analogue and digital inputs, but an extended range of both.

The M-150 has both RCA and balanced XLR connections, not to mention an

RIGHT: Micromega's 'Resonant Power Supply' (top) offers the efficiency of a switch mode type but with lower EMI. ADC/DAC and Sharc processor (bottom/middle) handle inputs and volume with Class A/B amp cooled by heatpipe

MM/MC phono stage and balanced/RCA preouts and a mono subwoofer output, while the digital provision starts with coax and optical S/PDIF and AES/EBU plus USBs – Type A ports for storage media and asynchronous Type B for a computer connection. There's also a pair of HDMI sockets wired to accommodate the I²S format. The LAN port, meanwhile, facilitates control of the amplifier via a dedicated app and supports UPnP/DLNA streaming while its wireless connection handles Bluetooth 4.0 with aptX.

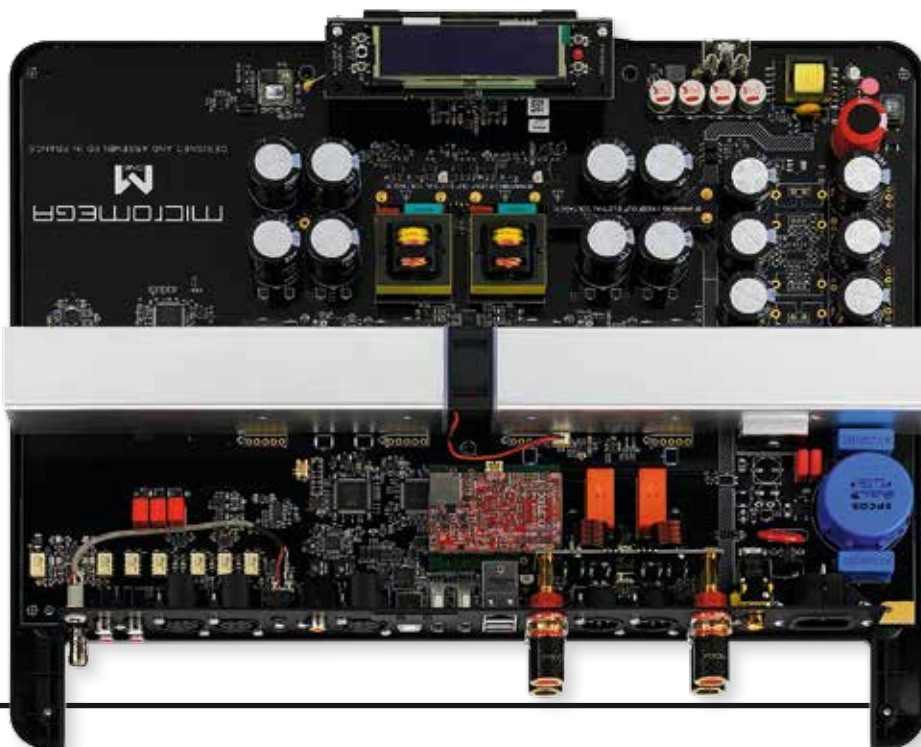
The electrical S/PDIF digital inputs are all transformer isolated to keep noise at bay, while the USB Type-B is galvanically isolated from the rest of the amplifier using optocouplers. Depending on the digital inputs chosen, the M-150 can handle file formats up to 768kHz/32-bit and DSD all the way to DSD256/11.2MHz [but see PM's boxout, p53]. Micromega's choice of converter is the celebrated 'Velvet Sound' AK4490 DAC from Asahi Kasei, last seen in these pages in the ATC CDA2 Mk2 player/DAC/preamp [*HFN* April '18].

In addition the USB-A ports can be used to update the product when required or activate extra features as and when these might become available, while the HDMI I²S sockets are also designed 'to handle future extensions such as wireless point-to-point or network connections', according to Micromega.

Incidentally, all the labelling for the inputs is on the base of the amplifier, and given that the rear is pretty tightly packed with sockets, I'd suggest hooking it all up with the amp standing (suitably protected) on its front panel, or with reference to the chart in the manual [see illustration, p55]. The M-150 weighs around 10kg, and you really don't want to try wiring it up holding it over your head!

MARS IN FOCUS

OK, so this amp has a pretty comprehensive specification, but it isn't quite done yet, for it also has a novel headphone output complete with processing to create a binaural effect (which I must say I could take or leave) from conventional music





sources, and built-in room-correction/equalisation, for which a plug-in measuring microphone is provided. This MARS (Micromega Acoustic Room System) technology, along with the binaural headphone system, is standard on the M-150 but is a £890 option on the less expensive M-100.

It's unusually simple to use, with no need for computers or any ancillary equipment – everything you need comes in the box with the amplifier, including a substantial tablet-shaped remote handset [see p55]. With the microphone plugged into a dedicated port on the rear panel, it's just a matter of initiating measurements using the front-panel buttons and menu system, then moving the mic a couple of times as it takes readings at the main listening position and some 20cm to the left and right.

Micromega explains that the system 'detects the sound irregularities of your room, and attenuates them for a balanced and accurate response', and it goes on to make it clear that the system is still being refined and developed. It says, 'Over time, the dedicated application will provide

'It's as fast as it is clean, and as weighty as it is agile'

this scalable system with a variety of additional features'.

GOING UP THE WALL

And there's one more twist in the tale of the M-One series: although available in standard with its aluminium casework anodised in either silver-grey or black, via the Micromega Custom Finish Program you can have it in a range of alternative hues should you wish. A colour palette to match Focal's loudspeakers includes Carrara White, Black Lacquer, Imperial Red, Electric Orange, and Nogaro Blue. These are all available for a £600 premium, while for £800 extra you can choose any one of the 180+ shades on the industry-standard RAL colour chart.

The final option is a £89 wall-bracket to mount the amplifier flat on a wall – just as you can the models from that other French company! For that purpose the M-150 has

ABOVE: Available in a huge variety of colours (and textures), courtesy of Micromega's Custom Finish Program, the M-150 is driven via the few buttons on its top, and via remote and/or app

two displays, one conventionally placed on the slimline front panel, the other on the top-plate just above it.

Connected up using those deeply recessed sockets, the amplifier fires up with minimal fuss, pausing only to stabilise before the company logo gives way to an indicator of the selected input.

That done, the MARS process is simple and self-explanatory, requiring nothing more than the amp, the microphone and the provided remote control, even if the five second pause at each step to allow you to clear the area requires you to be a bit quick on your toes.

DRIVING ON AUTO

Once the measurements have been made and the M-150 has done its sums, you can turn the process on and off, and select between 'Auto', which is the system's best guess while retaining the characteristics of your speakers, or 'Flat', which aims to do just what it suggests, especially in the bass region. (If Micromega's engineers are reading

this and planning an extension of MARS into their very nicely done control app,

I'd be fascinated if some feedback could be given on the phone/tablet screen to show just what changes the system is making to the sound.)

For what it's worth, I felt the 'Flat' setting made the music just a little too uninteresting and maybe even a bit thin, while the 'Auto' setting did a much better job of tightening up the bass without robbing it of extension, and in the process revealed more of the midband and treble, and their contribution to the focus and three-dimensionality of the soundstage. But then the initial – and lasting – impression ➞



NOVEL DESIGN

All inputs – digital or analogue – are processed at some point via an Analog Devices SHARC processor in the M-100 and M-150, programmed by Micromega to execute the volume and its 'MARS' room-correction regime. The base sample rate is 96kHz, so whether you feed the amplifier via its analogue XLRs or push in a 192kHz, 384kHz, etc, digital file via USB or S/PDIF, the final analogue response of the amplifier is limited to ~45kHz. Meanwhile, the 'Resonant Power Supply' (RPS) is an interesting twist on the more common switchmode PSU, used where efficiency or a compact form factor are key priorities. However, their fast switching transients (and conducted and radiated emissions) require EMC suppression filters and EMI reduction techniques in the core of the SMPS controller if 'audiophile' quality is to be maintained. The RPS switches at a lower ~100kHz and at near-zero voltage and current, minimising switching losses. Thus it delivers high efficiency – 95% is claimed here – while suffering minimal EMI. PM

LAB REPORT

MICROMEGA M-150



ABOVE: From left to right – room EQ mic socket; phono, RCA and XLR line inputs; trigger plus coax/optical S/PDIF, AES/EBU, USB, I²S (two on HDMI) and LAN inputs; 4mm speaker cable binding posts with balanced preamp outs and a sub out on RCA

the M-150 creates is of an amplifier that carries all its considerable flexibility and complexity very lightly, doing that thing of providing a very direct communication of what's being played.

Whether with vinyl or sources connected via analogue or the battery of digital inputs, the M-150 demonstrates both generous detail and a solid grip on the speakers, making a wide range of music spring to life in a highly impressive manner. Playing the recent Channel Classics release of Vivaldi's 'Four Seasons' in DSD [CCS SA 40318; from NativeDSD.com], the M-150 relishes a recording as sparkling as the performances, its tight and beautifully integrated presentation delivering a sound as fast as it is clean, and as weighty as it is agile and dynamic.

DETAIL IN ABUNDANCE

This is an amplifier to please those who seek to hear every detail in a recording, but just as relevant to listeners wanting no more than to immerse themselves in a performance and relish the artistry. Play a set with plenty of taut bass and superbly recorded instruments, such as Béla Fleck and The Flecktones' *Live Art* [Warner Bros 9 46247-2], and the M-150 is as convincing in the way it conjures up the live atmosphere as it is when delineating the snap and slap of Victor Wooten's bass strings on his extraordinary solo improvisation segueing into 'Amazing Grace'. And with Fleck's masterly medley of 'Early Reflection', a little Bach and 'The Ballad Of Jed Clampett' (yes, really!)



the Micromega amp is able to show just how nimbly it can handle lightning picking and deliver it to fine effect.

So this is an amplifier with real all-round ability: load up ZZ Top's 4CD *Chrome, Smoke & B-B-Q* [Warner Bros 8122-78176-2] and it's as adept with the stripped-down blues of some of the earlier tracks as it is chugging out the Texas boogie of 'Cheap Sunglasses' or 'I'm Bad, I'm Nationwide'. What's more, this slimline amp will play as hard as you want without losing its composure – if it sounds hard and dirty, it's probably because that's how it's meant to be. And if y'all got a problem with that, boy, etc, etc...

Switch swiftly to Martin Helmchen's masterly reading of Beethoven's *Diabelli Variations* [Alpha 386; 96kHz/24-bit], and the wonderfully light touch of the performer on his Steinway is all too apparent, as is the sense of the pianoforte standing in a real space. True, some may wish for a sound with a little more smoothness than the M-150 can muster, but to these ears the abundance of detail on offer here contributes to the appreciation of a performance, rather than detracting from it. ☺

HI-FI NEWS VERDICT

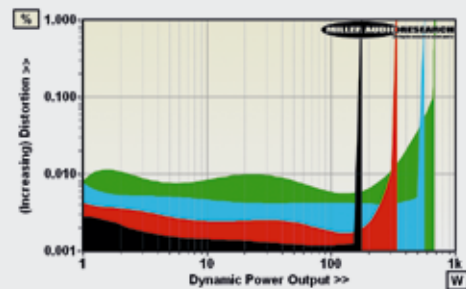
Its styling and provenance may suggest comparisons with that other French amplifier range, but the M-150 is very much *une autre paire de manches*, thanks to its distinct technology and facilities. It's remarkably capable, flexible and well-sorted, the MARS room correction is convincing, and the performance is similarly impressive: able to sound at turns lusty and supremely delicate, and above all consistently in control.

Sound Quality: 83%

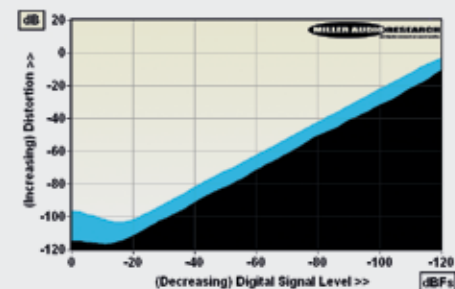


The beefier of Micromega's two M-One amplifiers is reinforced by a PFC (Power Factor Correction) version of its RPS power supply [see boxout, p53]. Rated at 150W/8ohm, the M-150 delivers 2x167W/8ohm and 2x315W/4ohm with 175W, 335W, 565W and 690W available under dynamic conditions into 8, 4, 2 and 1ohm loads [see Graph 1, below]. These are impressive, load-tolerant figures for such a slimline amplifier with a Class A/B, rather than Class D, output stage. Distortion is very well controlled too, holding true to a mere 0.0009-0.0014% across its rated 150W power bandwidth from 20Hz-1kHz. Distortion increases at HF, but not excessively – reaching 0.01%/10kHz, 0.017%/20kHz and 0.035%/40kHz. The response of the amplifier is limited by internal sample rate conversion to -0.55dB/20kHz, -2.0dB/40kHz (-35dB/48kHz) via the analogue inputs and -0.4dB/20kHz to -2.6dB/45kHz via its digital inputs but the output impedance is low and 'flat' at 0.04-0.05ohm from 20Hz-10kHz so there's little variation in response between 8, 4 and 2ohm loads. The A-wtd S/N ratio is 'average' at 83dB (re. 0dBW).

The digital board, based on AKM's AK4490 'Velvet Sound' DAC, is configured with its linear phase/steep roll-off filter and offers 94dB of stopband rejection, delivers a resolution good to ±0.3dB over a full 110dB dynamic range and offers a 107dB A-wtd S/N ratio (balanced line output). Distortion is 0.0002-0.002% (20Hz-20kHz, 0dBfs) and falls to a minimum of 0.0001-0.0005% between -10dBfs and -30dBfs over the same frequency range [see Graph 2]. Jitter is impressively low at <40psec for all sample rates, though any files at 176.4kHz and higher are downsampled to 96kHz/32-bit. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 26.3A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	167W / 315W
Dynamic power (<1% THD, 8/4/2/1ohm)	175W / 335W / 565W / 690W
Output impedance (20Hz-20kHz)	0.043-0.095ohm (315ohm, pre)
Freq. resp. (20Hz-20kHz/40kHz)	+0.0 to -0.55dB/-2.0dB (Analogue)
Distortion (20Hz-20kHz, 0dBfs/0dBW)	0.0002-0.002%/0.0006-0.017%
A-wtd S/N ratio (re. 0dBfs/0dBW)	107.1dB (Dig) / 83.1dB (Analogue)
Digital Jitter (48kHz/96kHz)	40psec / 25psec
Power consumption (idle/rated o/p)	40W / 480W (3W, standby)
Dimensions (WHD / Weight)	430x56x350mm / 9.3kg