

Emotiva XPA HC-1

With remarkable power on tap, and very little lost to heat, Emotiva's XPA HC-1 monoblock promises exceptional performance-per-pound. Is it the bargain it seems?
 Review: **Mark Craven** Lab: **Paul Miller**

American brand Emotiva's mission statement puts affordability front and centre. Claiming that 'the price of sonic nirvana' had begun to slip out of the reach of many audio fans, it launched in the early 2000s with the goal of dragging it back, using founder Dan Kaufman's previous experience as an OEM supplier as its foundation. This XPA HC-1 monoblock amp is a perfect example of the Emotiva ethos, promising serious power without the serious price. Just £799, in fact.

The company first hit the market with the DMC-1 multichannel preamp/processor, but its full product suite now includes loudspeakers and subwoofers, CD players and AV processors, and preamps and amplifiers ranging from mono to 11-channel. The XPA HC-1, despite the budget ticket, is actually one of its 'high-end' models, designed and manufactured at Emotiva's Tennessee plant, and part of the flagship X series. Those wanting to

BELOW: Modular design in action as Emotiva's mono amplifier card [top] is fed from a custom switchmode PSU [bottom]. The amplifier and PSU heatsinks are braced via a couple of links

save even more pennies can investigate Emotiva's BaseX range, which includes the TA-100 integrated [HFN Apr '19].

GENERATION X

At the heart of any XPA amp, whether here or the Differential Reference units [HFN Oct '18], is the company's third-generation amp module. This represents more than just an incremental technology change from one generation to the next. Emotiva's XPA Gen2 amps were Class AB designs, used a linear power supply and offered a user-selectable, enriched 'Class A mode'. For its current Gen3 models, Emotiva has introduced a switchmode power supply and implemented a substantially more efficient Class H design [see PM's boxout, p61]. And this really does seem to be 'a whole new ball game' – to use Emotiva's own words.

Styling largely matches that of the rest of the X series fleet, although the XPA HC-1 adopts a half-width chassis that gives it an almost square front fascia and the look, perhaps, of a NAS drive. This relatively

narrow chassis brings some placement flexibility – Emotiva suggests positioning the amps adjacent to your speakers, which will enable shorter runs of speaker wire – and ventilation is top-mounted, meaning two can be installed side-by-side if desired.

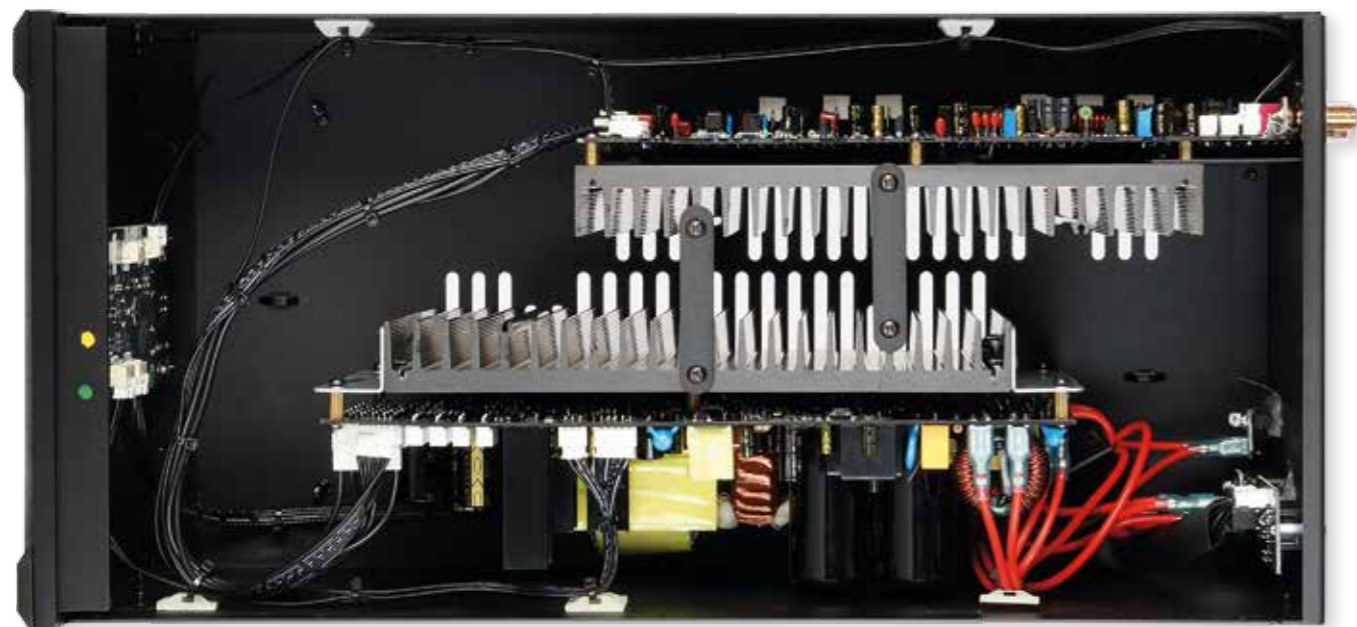
The company also sells an HCRE-1 'Coupler Kit' (£25) to physically secure two XPA HC-1s together, creating a 19in-wide unit ideal for a rack enclosure (rack ears are also available). The depth of 457mm is worth considering if you're planning on placing it on a hi-fi shelf.

Front-panel aesthetics are expectedly minimal, with only a single LED status light (which can be switched off via a button on the rear of the amplifier), power button (which is also illuminated, but – irritatingly – can't be dimmed), and 'Emotiva' and 'XPA' branding.

LIGHT ON ITS FEET

Around the back there are single balanced XLR and unbalanced RCA inputs, with a toggle to switch the amp's operation from one to the other, plus trigger input/output

'Beeps and whirrs, then it explodes into life'



LEFT: The no-nonsense and slightly 'industrial' aesthetic of the HC-1 is softened by the blue illumination of the logo/power switch. No frippery here!

XPA HC-1 sits firmly in the entry-level camp – both in the wider market and Emotiva's own stable of products – they do justice to the concept. The sound is both grippy and rhythmic, digging deep into the music and engineering a wide, open soundstage. Value for money? Certainly.

With my pair partnered with Emotiva's XSP-1 preamp [HFN Oct '18], I was eager to hear Led Zeppelin's 'Kashmir' [Physical Graffiti; Swan Song 8122795795], a track with a lumbering, relentless rhythm that I imagined would suit the amps down to the ground. And even with the phaser effect given to John Bonham's drums robbing his snare hits of ultimate attack, his drumming still sounded forthright and metronomic, an ever-present accompaniment to Robert Plant's mystic lyrics and the

connections for system integration and a set of robust speaker cable binding posts.

Robust is also a term that suits aspects of the XPA HC-1 overall. The chassis, raised by four integrated feet, is pressed steel and fronted by a thick aluminium fascia with hairline finish. Yet anyone used to the monster monoblocks of some rivals, or Emotiva's earlier Gen1 and Gen2 designs, will likely be surprised by how relatively lightweight the XPA HC-1 is at just 10kg, a by-product of that switchmode PSU. Of course, Emotiva suggests this all plays a

part in its affordability, as reducing weight by around a third makes it more cost-effective when it comes to shipping.

POUND FOR POUND

The appeal of a monoblock amplifier comes from its singular purpose – its dedicated power supply, isolation from other channels and the chance to locate it hard up against each loudspeaker, maximising that sense of 'power on tap'. And even while the

stop-start instrumentation. The string chords that prelude Plant's 'Oh, I've been flying' were particularly well-handled, being both weighty and incisive.

A genre classic 'Kashmir' may be, but I felt the XPA HC-1s yielded a more impressive performance with music fuller in tone, faster in tempo and more straightforward in production. 'SOS', from Take That's surprisingly dance-centric *Progress* album [Polydor 274 847-4], thundered along with the HC-1s in the driving seat. Quick-fire and bass-rich, there was a real sense

that every last drop was being squeezed out and with none of the various musical elements swallowed up by the pounding – but never flabby – bass.

DOUBLE BASS

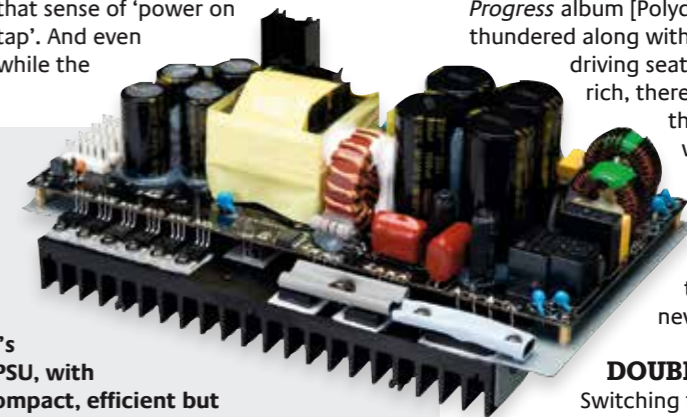
Switching to the sheer energy of Moving Fusion's drum and bass epic 'Turbulence' [Drum And Bass Arena; Warner Dance WSMCD160], the result was the same. While the track starts calmly enough, a swirling tapestry of electronic beeps and whirrs above crisply delivered percussion, it then explodes into life when the thick, roiling bassline enters the fray. Here the XPA HC-1s snapped into action, gripping tightly on to the fluid low-end and following it through its peaks and troughs. My speakers seemed to double in size... ↪

CLASS H... OR G

By blending a Class AB output stage with a Class H stepped-rail PSU architecture, Emotiva has engineered a cooler-running amplifier with an electrical efficiency only 10-15% behind that of a modern Class D design [see NAD M33, HFN Aug '20].

Also key to its 'green' equation is Emotiva's decision to eschew a conventional linear PSU, with heavyweight transformer, in favour of a compact, efficient but very high capacity switch-mode PSU, rated at a very substantial 3kW [see inset picture]. With an idle power consumption of just 18W and a (measured) efficiency of 75% at 200W/8ohm output, the XPA HC-1 is able to use relatively modest heatsinking to keep its mere 10kg chassis cool under pressure.

Class H boosts efficiency by switching up to a higher voltage PSU rail only when signal conditions demand it, but the earliest designs would often betray a 'step' in distortion as the PSU switched between rails. Fortunately the XPA HC-1 is entirely free of this side-effect and so, like many amps of any 'Class', its distortion changes progressively and smoothly with level [see Lab Report, p63]. In practice, Emotiva's Class H is not dissimilar to the Class G regime recently employed by Arcam in its amplifiers, including the latest SA30 [HFN Jul '20]. PM



LAB REPORT

EMOTIVA XPA HC-1



ABOVE: Single-ended (RCA) and balanced (XLR) inputs are switched via a toggle while outputs are limited to a single set of 4mm speaker terminals. The blue illumination can be defeated here while trigger ports assist with home/system automation

The XPA HC-1s steer clear of excessive warmth or brightness, but might be considered a little dry in their pursuit of sonic neutrality. So, those seeking a warming hug from their stereo set-up may want to seek out speakers with a more full-bodied approach. Nor does the sound have the assured smoothness and power of some pricier amplifiers.

TIDAL WAVE

Still, it's the ability to impart bass weight and slam that marks the XPA HC1 out from less powerful amplification, and this encouraged me to frequently step upwards on the XSP-1's volume ladder. There's tangible power here [see PM's Lab Report, opposite] and you'll want to use it, because at lower listening levels the XPA HC-1s' star attractions

– their dynamism and scale – are dimmed. 'Too Young To Know' by UFO [Phenomenon; Chrysalis 50999 5 04440 2 1] bounced along

LEFT: Supplied with Emotiva's partnering XSP-1 preamp, the IR handset governs input and processor/ tape loop selection, volume, LF/HF trims and direct mode



amiably enough at a family-friendly volume, but gained a fizzing energy and midrange crunch when the amps were given a push.

Happily, these amplifiers are just as adept with music that seeks to stir emotions through orchestral swells and charismatic crescendos. John Williams' 'Theme From Jurassic Park' [Tidal Hi-Fi] may have no driving rhythm behind it, but its melody hit like a tidal wave made from string, brass and wind instruments, while the soaring violins and diving cello of Max Richter's 'On The Nature Of Daylight' [The Blue Notebooks; 130701, CD13-04] had me breaking out in goosebumps. Value these amplifiers for their muscularity, but don't discount their musicality too. ☺

HI-FI NEWS VERDICT

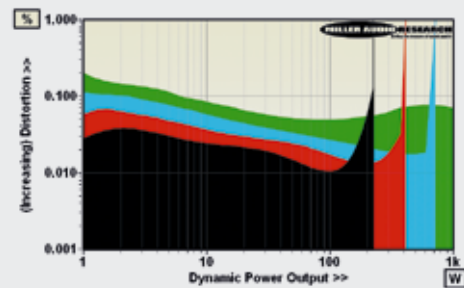
Emotiva's simple-to-install Class H monoblock amplifier proves consistently entertaining and easily outshines its budget price tag. An impressive performer combining a lust for the low-end with dynamic ability, it will tempt audiophiles looking to take their 'separates' adventure to another level without breaking the bank. There's not much about the XPA HC-1's aesthetics to charm you, but its sound surely will.

Sound Quality: 85%

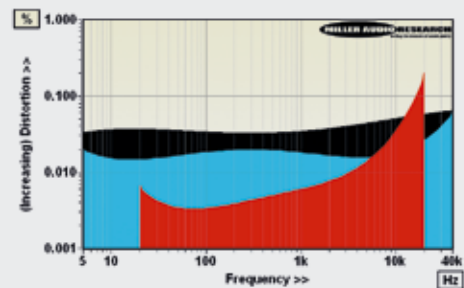


Our first exposure to Emotiva's exceptional watt-per-pound value amplifiers came with the XPA DR2 [HFN Oct '18] which is rated at 550W/8ohm and 800W/4ohm but, on test, delivered 650W/8ohm and 1.02kW/4ohm. The XPA DR2 uses two of Emotiva's amplifier modules in bridged mode with a derivative of the switchmode PSU that we see in the XPA HC-1 tested here. However, the HC-1 uses one amplifier module per channel in single-ended fashion and so, without the voltage headroom of bridging, it supports a lower 220W/415W output into 8/4ohm but exactly the same 32A current before its electronic protection kicks-in. So the DR2 offers 2060W/2ohm and the HC-1 an 'equivalent' 1035W/1ohm [see Graph 1]. Few other £800 amps will support 1kW/1ohm, so this is a very load-tolerant monoblock.

Graph 1 also illustrates a more fundamental difference in the behaviour of the HC-1's single module where distortion is highest at low power output (and typically 3rd, 5th, 7th odd harmonics) before decreasing as power increases, from 0.045%/1W to 0.015%/10W down to the rated 0.005% from 100-200W (all at 1kHz/8ohm). This trend, plus the general uniformity of distortion vs. frequency at moderate power is also clearly illustrated in Graph 2, below. Overall gain matches that of the DR2 at +29.3dB (balanced in) but noise is slightly higher and the A-wtd S/N lower at 86.5dB (re. 0dBW). The response is also unchanged over the DR2, rolling gently away at HF to -0.45dB/20kHz and -5.4dB/100kHz, just as the output impedance holds to a steady 0.04ohm from 20Hz-5kHz, increasing gently to 0.065ohm/20kHz and 0.34ohm/100kHz. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 32.2A



ABOVE: Distortion versus frequency from 5Hz-40kHz (black, 1W/8ohm; cyan, 10W/8ohm) and 20Hz-20kHz (red, 200W/8ohm). Note THD falls at higher power

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	220W / 415W
Dynamic power (<1% THD, 8/4/2/1ohm)	225W / 415W / 720W / 1035W
Output impedance (20Hz-20kHz)	0.037-0.065ohm
Freq. response (20Hz-20kHz/100kHz)	+0.0dB to -0.45dB / -5.4dB
Input sensitivity (for 0dBW/200W)	98mV / 1393mV
A-wtd S/N ratio (re. 0dBW/200W)	86.5dB / 109.5dB
Distortion (20Hz-20kHz, 10W)	0.015-0.025%
Power consumption (idle/rated o/p)	18W / 40W (2W standby)
Dimensions (WHD) / Weight	213x194x483mm / 9.8kg