

ELAC Element EA101EQ-G

ELAC's new product development continues apace with this sophisticated, app-driven integrated that features a suite of digital inputs and novel BASH amplifier

Review: **Nick Tate** Lab: **Paul Miller**

Meet the future, ladies and gentlemen! According to the company's UK spokesman Max Lowe, this is the very first of ELAC's new Elements range, which offers modern audio solutions for people either starting out in two-channel hi-fi, or coming back to it after their kids have flown the nest. 'It's designed to wean people off soundbars', he told *HFN*, 'to show them that hi-fi separates can be better, but without losing the convenience.'

It's also something of a departure for this well known and highly regarded German hi-fi brand, which has made its name purveying high quality speakers for a good few decades. In truth, the new electronics are designed and developed by ELAC and produced by the brand's manufacturing partner in China.

FEATURE-PACKED

As you would expect, it offers a wide range of digital inputs and sophisticated processing – despite its modest £625 price tag and compact 213x54x295mm dimensions. It's a complex bit of kit that follows the move towards fairly high-powered, fully featured, small footprint designs epitomised by the new Cyrus ONE at £699. But where Cyrus goes the Class D route to deliver plenty of power from the ONE's diminutive dimensions, ELAC uses a Bridged Amplifier Switching Hybrid (BASH) topology to get the job done from a similarly lightweight enclosure [see PM's boxout, p2].

In practice, most buyers will be less interested in ELAC's clever fusion of power amplifier technologies and more in the connectivity and configurability on offer. The Element EA101EQ-G's asynchronous USB interface forms the very epicentre of its appeal, handling hi-res audio at up to 192kHz/24-bit while offering

RIGHT: Modulated switchmode power supply [lower left] feeds the amplifier's output stage [top] according to signal demand. Input board [right] features Cirrus CS47024 32-bit DSP with built-in ADC/DAC

compatibility with (multichannel) Dolby Digital. There's no DSD functionality but, again, the target customer will likely be more enthused by ELAC's Bluetooth input, which works via an antenna sandwiched under the rubber-coated top plate.

Every good digiphile knows that Bluetooth aptX coding is unlikely to match full-fat uncompressed CD (or higher), but it's still perfectly good for casual listening. The same audiophiles might question the absence of a phono stage – which Cyrus's ONE has as standard by the way – and also the fact that its line inputs are all digitised at 96kHz/24-bit, as revealed by PM's lab investigation [see p3]. By contrast, the Cyrus amp maintains its audio in the analogue domain throughout.

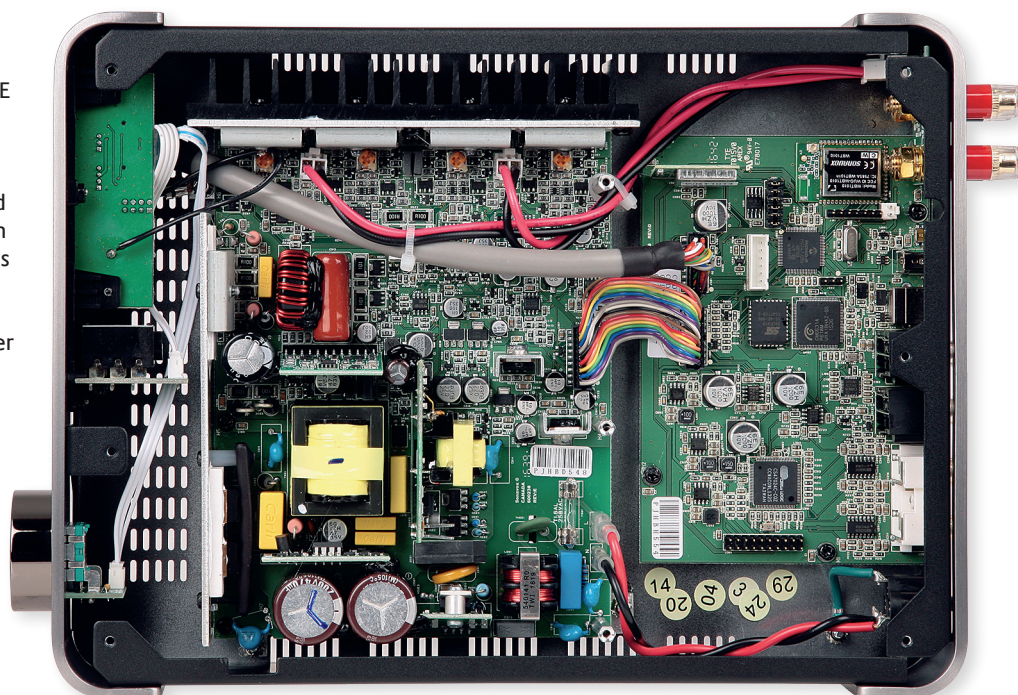
ELAC's amp does include a full-size 6.35mm headphone socket, fitted into the black detail of its metal front panel, and also sports source, power and volume controls, plus a small and very hard-to-read OLED volume/source display. Its minimalist fascia is reminiscent of the 1980s when most self-respecting integrated amps had

virtually no controls and even fewer frills inside (exemplified by the original Naim Nait). But while ELAC's Element is spartan outside, its 'cup overfloweth', so to speak, under the hood.

APP CONTROL

A powerful DSP is this amplifier's workhorse, managing the A-to-D and D-to-A for the line and single USB, coaxial and twin optical inputs. Then there's the subwoofer output, which is optimised via the amplifier's built-in DSP 'room-correction' system, accessible via the sophisticated smartphone app. The app comes in both Android and iOS flavours [see inset pictures, p2]. Five years ago this sort of configurability was only possible on high-end products from the likes of Devialet, which shows how far we've come in such a short space of time.

The amplifier's Auto Blend and Calibrate function (ABC) optimises the interaction of the subwoofer and main loudspeakers by determining the ideal crossover frequency and phase relationship. The 'Calibrate'





feature then configures the speakers to the room. This ELAC app also has a handy remote learning feature, so you can also control your television or set-top box remotely, too. A small moulded plastic IR handset is supplied as standard, but this is a pain to use not least because the volume control either alters the sound level very slowly, or with alarming speed.

PACKING A PUNCH

Whatever ELAC's power rating [see PM's Lab Report, p3] the EA101EQ-G certainly packs a bigger punch than you'd expect from something of this size. Auditioned in the editor's music room, and driven via USB from a Melco HA-N1ZS10 server [HFN Feb '15], this new ELAC model showed that while it's no muscle amp there's still a subtle warmth to its upper bass that lends extra weight to its performance.

This ensured the old-school house music classic, 808 State's 'Ancodia' [from

90, WEA Music WMC5-50; CD rip] was a pleasing listen. Despite being a pretty murky recording, the ELAC amp pushed things along in a generally very engaging and enjoyable way. Tonally fairly smooth, it allowed this listener to peer into the mix reasonably easily, and enjoy a decent amount of midband detail.

The treble offered a nicely finessed feel to the hi-hats, although there was an obvious lack of extension, stripping out the shimmering metallic quality just a touch.

Overall though, the ELAC amp made a fair stab of things, considering its modest price.

Moving to a far cleaner recording in the shape of the Blondie classic 'Hanging On The Telephone' [from *Parallel*

Lines, Capitol Records 5335992], you begin to get the sense that this amplifier lends everything it touches a slightly processed feel. Lead singer Debbie Harry's distinctively raunchy and brittle voice came over as rather airbrushed and synthetic

'This amp works well at keeping the rhythm of the music alive'

ABOVE: Soft-touch controls for on/off and input and a rotary for volume, while the advanced 'ABC' functions are app-driven. Bluetooth aerial is stuck under the rubber top plate

sounding – more akin to frozen peas than the ones that come straight from the pod! That's not to say it wasn't enjoyable, because this amplifier works well at keeping the rhythm of the music alive, it's just that the proceedings lacked a certain natural, organic sound.

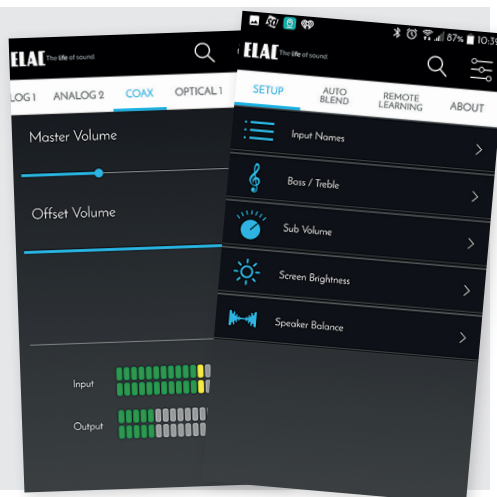
SCALE MODEL

Similarly, its soundstaging isn't quite as expansive as perhaps it should be. Images aren't thrown out as wide left-to-right or as deep front-to-back, as they are with bigger and certainly costlier amplifiers. With heavily compressed pop music this isn't a big deal, but when the production is done to a very high standard, such as on ABC's 'Date Stamp' [from *Lexicon Of Love*, Mercury 314 538 250-2], it's arguably a little more conspicuous.

Although musically enjoyable, the ELAC amp sounded a little too 'shut in' to deliver →

BASH AMPLIFIER

Achieving high power, high fidelity and high efficiency has been the driver for the development of modern Class D amplifiers [see *Bel Canto Black*, HFN Feb '16], but other methods are being perfected. Class G amplifiers employ two or more pairs of PSU rails, each of higher voltage, which switch up only when the output demand increases sufficiently [see *Arcam P49*, HFN Jun '15]. Dynamic output and operating efficiency are both improved but even better results can be achieved if fully modulated rails are used which 'track' the signal voltage thereby maintaining a constant, low voltage across the pairs of output (power) transistors. The BASH (Bridged Amplifier Switching Hybrid) topology does this, using a *modulated* switching power supply in conjunction with a conventional Class B amplifier. ELAC's PSU switches at 400kHz and is controlled by the same DSP that facilitates its app remote [inset, right] and other functions. BASH avoids the low-level output spikes that can occur as Class G hops between voltage rails but has the disadvantage of using a switching rather than a linear PSU. This puts a burden on the adequate suppression of RFI and other high frequency noise. PM



INTEGRATED AMPLIFIER



ABOVE: Two analogue line ins (internally sampled to 96kHz) are offered on RCAs alongside two Toslink optical, one coax and a USB Type B digital ins. A filtered sub out (RCA) and speaker outs (4mm) are joined by a USB Type A port for firmware updates

a commanding performance of this classic Trevor Horn produced pop song. It simply failed to communicate the full scale of the recording, falling back in on itself and not making the most out of the great spatiality available.

I've mentioned that the EA101EQ-G's power output is highly impressive for something so small and light. It can take loudspeakers of average sensitivity up to fairly high levels in a medium-sized room, even if it does introduce a touch of compression as it moves towards its power ceiling.

There's definitely a 'sweet spot' in its operating volume around the low 60s on the level display – the aforementioned ABC track has a strong 'walking' bassline which the ELAC amp carried well up to a certain volume level, but then began to labour. Some users will hook it up to an active subwoofer to help out in this respect, although many won't feel the need and indeed will rarely listen as loud.

IT'S GOT RHYTHM

Switch to some clean acoustic jazz like Lou Donaldson's 'Alligator Bogaloo' [from the Blue Note album of the same name, CDP 7 84263 2], and this little amplifier turned in an enjoyable five minutes or so, showing that it fundamentally 'gets' the way instruments start and stop in time with one another. It proved good at conveying the subtle dynamic inflections of the playing too, adding to the foot tapping boogie factor. All the same, there

was a slightly metallic edge to the presence region on what's normally a smooth late '60s recording.

Indeed on other selections with prominent vocals, such as Randy Crawford's 'Someday I'll Fly Away' [from *Secret Combination*, Warner Bros 7599-23541-2] I occasionally encountered slight signs of sibilance, with things getting a little chilly in the upper midband. You'd never call this amplifier harsh or cold, but neither is it the modern answer to a creamy tube design.

Nevertheless, if you're not preoccupied by thoughts of extreme bandwidth and soundstaging, then there's much to like in the ELAC amp's character. It relishes bouncy, poppy dance music such as Calvin Harris's 'Get Ready For The Weekend' [from *I Created Disco*, Fly Eye FLYEYE007]. Keep it in its comfort zone and it's a likeable listening companion – one that for its various failings still makes music fun. It's fairly consistent across sources too, although the USB input is undoubtedly the superior option. ⚡

HI-FI NEWS VERDICT

The new Element EA101EQ-G is surely the shape of things to come for entry-level integrated amplifiers. Highly versatile and cleverly packaged, it sounds decent but is no purist audiophile product. Those liking it for its elegantly small footprint and great flexibility have really got the measure of this diminutive device. ELAC says it's designed to transition people to real hi-fi, and what's not to like about that?

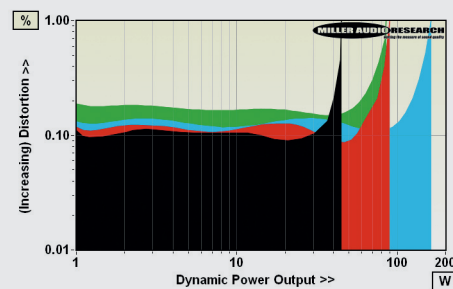
Sound Quality: 80%



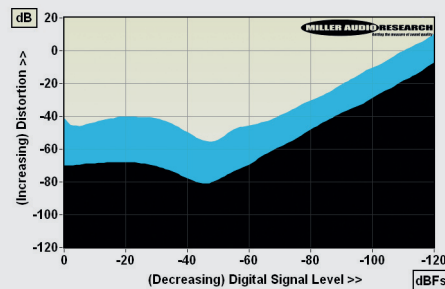
ELAC ELEMENT EA101EQ-G

ELAC's hotbed of DSP immediately sets its EA101EQ-G apart from conventional 'integrated amplifiers' as does its implementation of a BASH output stage. In practice, analogue inputs are sampled at 96kHz and digital inputs resampled to 96kHz so the amp's response carries out to -5dB/45kHz with analogue and 96kHz/192kHz digital inputs, the latter achieving -0.3dB/20kHz with 44.1kHz/48kHz media. Power output is just a little shy of specification at 2x38W and 2x73W into 8/4ohm but there's sufficient headroom to sustain 45W, 90W, 163W and 85W under dynamic conditions into 8, 4, 2 and 1ohm loads [see Graph 1, below]. The ~0.03ohm output impedance is usefully low for this style of amp but performance, in the round, is better if the digital rather than analogue inputs are selected.

Stereo separation is significantly wider at 100dB (digital) versus 50dB (analogue) and, though the A-wtd S/N is identical at 88.5dB (re. 0dBW) or 104.5dB at full output, the noise floor is also 'cleaner' with a direct digital feed. Harmonic distortion is fractionally lower at ~0.02% through bass and midrange at 1-10W/8ohm but, with all inputs, does increase markedly above a few kHz reaching a full 1% at 20kHz/10W/8ohm. Indeed, THD is some 25-30dB (20-30x) higher at high frequencies at all power outputs [see Graph 2, below]. Also, be aware that, via its digital inputs, the EA101EQ-G should not be advanced beyond a volume setting of '73' as it clips with peak level (0dBfs) inputs at volume '74'. Jitter is moderately high at 1335psec (48kHz) and 750psec (96kHz inputs), but then this is a 'noisy' environment with its 400kHz PSU. Low-level resolution, on the other hand, is excellent with errors of just ±0.5dB over a full 120dB dynamic range. PM



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



ABOVE: THD vs. digital input, 0dBfs = 40W/8ohm; -16dBfs = 1W/8ohm (1kHz, black; 20kHz, blue)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	38W / 73W
Dynamic power (<1% THD, 8/4/2/1ohm)	45W / 90W / 163W / 85W
Output impedance (20Hz-20kHz)	0.028-0.035ohm
Freq. resp. (20Hz-20kHz, Dig/An.)	+0.0 to -0.4dB / +0.05 to -1.0dB
A-wtd S/N ratio (Digital/Analogue)	104.5dB (0dBfs) / 88.5dB (0dBW)
Distortion (20Hz-20kHz, Dig/Analog)	0.018-0.75% / 0.020-1.1%
Digital jitter (48kHz/96kHz)	1335psec / 750psec
Power consump. (Idle/Rated o/p)	16W/209W
Dimensions (WHD) / Weight	213x54x295mm / 2.3kg