

Chord Ultima Pre 2/Ultima 2

The Chord Ultima range has grown from a single pre and power amp, as the tech becomes more affordable. The Ultima 2 models might just give the flagships a scare
 Review: **Andrew Everard & Paul Miller** Lab: **Paul Miller**

Never let it be said that the Chord Electronics range isn't distinctive in its styling: all the way up from the tiny Mojo DAC [HFN Jan '16] to the flagship Ultima reference preamplifier [HFN Feb '19], the company's products look like nothing else on the market, as if to emphasise that what's going on inside them involves no shortage of proprietary technology, too.

The Ultima Pre 2 and Ultima 2 monoblock power amps we have here were launched as part of the company's 30th anniversary celebrations, along with further power amps expanding the Ultima range from just two models to no fewer than five. With the Pre 2 listing at £12,500 and the power amps at £18,360 apiece, they comfortably undercut the original Ultima pairing, a full stereo set of which would set you back £90,000. Below the 750W-rated Ultima 2 monoblock is the 480W Ultima 3, another mono at £11,000 a pop, while two stereo power amps have also become available this year – the 300W Ultima 5 is £9250, and the 180W Ultima 6 £5995.

OPTIONAL LEGS

All the amps, by the way, are available in a choice of 'Jett Black' or Argent Silver finishes to their aircraft-grade aluminium casework, while the company's optional Integra Leg system, in a choice of Jett Black, Argent Silver or Nickel finishes, also allows the products to be stacked.

In practice, the Ultima 2 monoblock is a direct replacement for the SPM 6000 MkII, with new industrial design from company head John Franks [see p39]. The Pre 2 is a fresh design, too, and far less bonkers than the extremely quirky original Ultima preamp, with no sign of those odd 'magnetos set, fuel pumps' switches.

RIGHT: The blue/green LED illumination for the Ultima Pre 2 is embedded into the underside of the lid. Inside the alloy casework the switchmode PSU [top left], motorised volume and 'dual feedforward' analogue gain stage [right] are fully screened

What's more, the power amps have got their balls back: each one has a translucent spherical button buried in the centre of its thick alloy fascia, reminiscent of those on the company's DAC range, to fire it up.

Mind you, these wouldn't be Chord Electronics' products without at least some quirkiness... As in other models in the company's lineup, there's LED illumination – blue and green LEDs combining to produce 'teal' – within the top plates to light up the internal workings. On the power amp these, and the 'power ball', can be dimmed if required, using a hidden button in the vertical slot bisecting the upper part of the front panel.

As the manual puts it, 'Simply locate the hidden button in the middle of the faceplate, insert a thin object and push until you hear an audible 'click'. The light ring and power button will cycle between low and high brightness modes'. A credit

card should do the trick, but a button on the rear panel might have been simpler.

ANALOGUE, WITH FLAIR

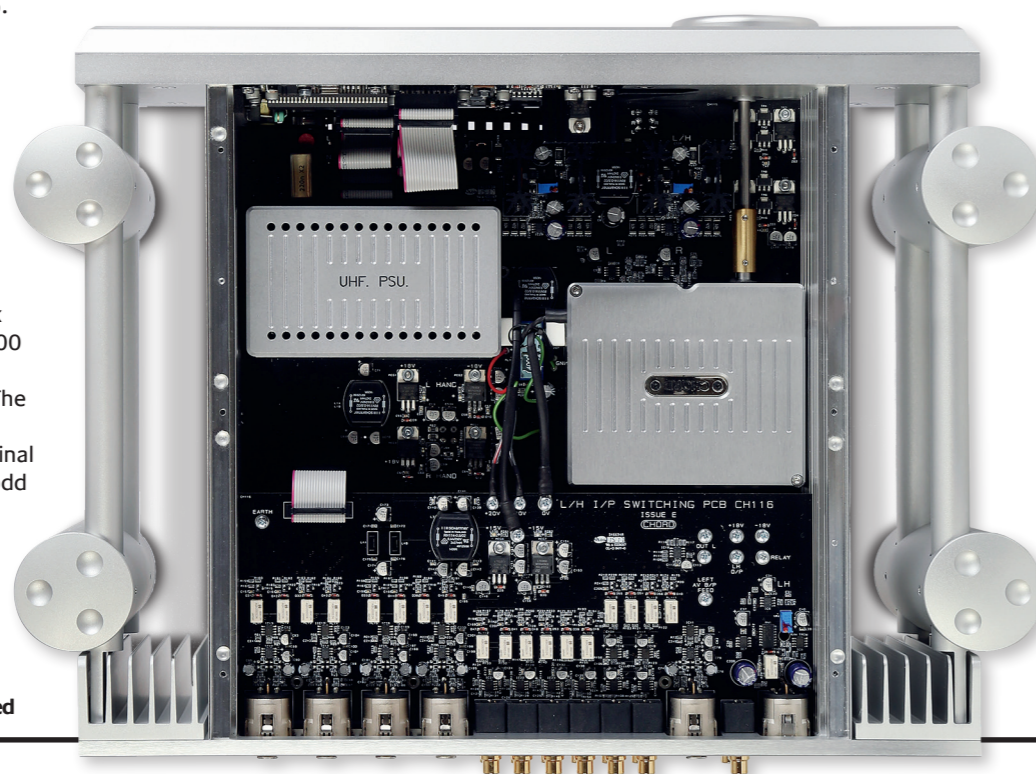
The Pre 2 is an all-analogue device and line-level only, offering four sets of inputs on balanced XLRs, two on RCA phonos, and two tape in/out loops, also on RCAs, while

pre-outs are on both RCAs and XLRs. There's also an AV bypass input, allowing signals to be routed directly to the output without going through the volume control, for example when combining

the Pre 2 with a surround processor or receiver. However, this input is only on XLRs which is slightly unusual when the majority of surround devices will use unbalanced RCAs.

You can adjust the input gain to equalise the level between different sources [see PM's Lab Report, p41], though a bit of familiarisation will be needed to

'What's more, the power amps have got their balls back'



operate the preamp with confidence, not least because any of the sources can be allocated to Bus A or Bus B, thereby routing to one of several outputs.

The explanation goes as follows: this allows any of the inputs to be recorded to either of the tape outputs, and that in general use Bus A is the default. Pressing the button marked 'A' on the front panel sends that signal to the Tape 1 outputs. Meanwhile the 'B' bus is indicated on the Pre 2's display by a line of five dots below the indicated source which is sent to the Tape 2 outs. The remote handset [p41] also lets you control the Bus/input selection.

Confused yet? If not, the layout of the power amp's rear-panel connections should sort that. This is a mono power amp, yet at first glance it appears to have two sets of inputs, on both RCA and XLRs, along with

two sets of 4mm speaker outputs. OK, so the latter is hardly unusual – many mono power amps have two sets of speaker outs to simplify bi-wiring of suitable speakers. Here, however, the twin inputs allow the connection of the power amp with either normal (left hand inputs/4mm outputs) or inverted phase (right hand ins/outs). By all accounts, Chord errs in favour of the inverted input, which is just how Editor PM kicked-off his listening tests.

CHORD'S NEW ULTIMATE?

Driving my favoured B&W 800 D3 speakers [HFN Oct '16], and fed from a dCS Vivaldi ONE/Melco front-end [HFN Feb '18], these new Ultima 2s quickly got into their stride, writes PM. They filled the room with an impressively broad and deep sound, but one also possessed of an easy tranquility

ABOVE: Dominated by its huge volume control, the Ultima 2 can also be operated from across the room thanks to its large display showing input, output, level and gain setting. Two 6.35mm headphone sockets are also offered

that hinted at a vast pool of untapped power just ready to pounce. But don't crank up Chord's volume control to get your speakers jumping – the gain of these monos is higher than usual at 30dB, so the Ultima Pre 2 should be set to 'x0.5' to get a useful range out of that bulbous dial.

Warm-up is very swift indeed – 20 minutes tops – and neither do the Ultima 2s soak up too much juice when idling (90W each), so you have the easy option of leaving them on or off between sessions. I should say at the outset that these Ultima 2s lay to rest any suggestion that Chord's

THE POWER GAME

As I discussed in our review of Chord's flagship Ultima monoblocks [HFN Feb '19], achieving high power outputs into moderate 8 or 4ohm loads is as much about delivering a high voltage across the load as supplying the current to support it, which is why most designers opt for a bridged-mode output configuration to double the amplifier's voltage capacity. Chord takes a different approach, its Ultima 2 sharing the same trio of $\pm 110V$ switchmode supplies debuted in the flagship Ultima, operating in parallel here to deliver the current required to maintain the amp's voltage output across very low loads.

So, like the Ultima, the '2 bucks the industry trend for bridged output stages, making these two amplifiers the most powerful single-ended hi-fi designs in the world. Furthermore, the fact that the Ultima 2's output stage is

half the size – 32 lateral MOSFETS instead of the Ultima's 64 – has very little impact on its real world performance [see Lab Report, p41]. In practice, it's the three PSUs calling the shots here – supporting dynamic outputs of 825W, 1595W, 3041W and 5617W in the Ultima and 810W, 1590W, 2963W and 4850W into 8, 4, 2 and 1ohm loads, respectively, for the Ultima 2. So while the Ultima delivers a clean 75A of current for short-term musical peaks into the toughest loads, the Ultima 2's 70A is no less impressive.

The most powerful amps we've tested? Up until the advent of D'Agostino's Relentless monoblocks [HFN Mar '20], that crown was held by Musical Fidelity's Titan [HFN May '10] and Tri-Vista kW [HFN Aug '03] – bridged designs that delivered 1050W



and 1996W into 8/4ohm loads, the former achieving 5896W/1ohm (76.8A) while the Tri-Vista kW continued to 8820W into 0.8ohm. But the £250k Relentless – another balanced/bridged design – has set a new benchmark with 1740W, 3350W and 6360W into 8, 4 and 2ohm and 11,325W (or 106A) into 1ohm. Astonishing, but at a price! PM



ABOVE: Slimmer, but as deep as the flagship Ultima, the Ultima 2 is equipped with one of Chord's distinctive rollerball controls – it glows red in standby, green during start-up, then blue in operation. A slot and microswitch in the fascia allows the striking illumination [see pic below] to be adjusted

switchmode-driven amplifiers may sound a little chilly about the edges. Living with the flagship Ultimas for a month back in 2019 convinced me of this, but the Ultima 2s take this refinement to another level – the Ultima Pre 2 is significantly quieter and, thus, so is the combination.

TURN UP THE HEAT

Take the poignant 'In The Winter I Returned' [*Dear River*; Linn AKD505, 96kHz/24-bit] where Emily Barker's voice nudges insistently ahead of Ted Barnes' very deliberately plucked strings, all rising from a very dark and yet eerily spacious acoustic. As her natural sibilance builds and other performers in The Red Clay Halo join the piece, there's still that sense of both volume and intensity growing harmoniously, all of a piece without a suggestion of raggedness.

Turning up the heat with Logan Richardson's debut for Blue Note [*Shift*; Blue Note 00600406671585, 96kHz/24-bit] and there was no pause for breath as this Chord combo revealed the beautiful but challenging melodies. Here were the

twists, turns and obvious improvisation traded between saxophonist Richardson and guest star Pat Metheny on guitar, all underpinned by an oh-so-tight engine-room fuelled by bassist Harish Raghavan and Nasheet Waits on drums.

The sound was rich, the performance compelling as the Ultima 2s provided just the urgency required, and no more, to fill the room on command. So there's certainly a 'technicality' about the sound of this duo, but there's sophistication and passion too.

'Vocals swung from intimate to wild dervish in a few beats'

And can they rock? You bet! Advancing the volume way short of '11' ('3' would be closer to the mark) was more than sufficient to roll out the 2014 remix of Deep Purple's classic live *Made In Japan* [Universal Music Group UNI285], originally captured on an 8-track machine. Sure enough, this '96kHz/24-bit Deluxe Edition' looks more like a 48kHz upsample, but there's no gainsaying the additional see-through clarity and comprehensive tightening-up of what is surely one of the world's most visceral and energetic rock bands captured, on stage, at the apex of their collective talent. ➔

JOHN FRANKS

The Ultima 2 is the more powerful of two new monoblocks to be inspired by Chord's massive flagship amplifier, all sharing proprietary technologies. 'All our full-sized amplifiers are designed to be scaleable with many common design parts being the same', confirmed Chord Electronics' MD and Chief Designer John Franks. 'Our Ultima amplifiers use in-house designed ultra low noise HF (switchmode) PSUs. They distribute the instantaneous output current across the main power rails keeping them balanced and the centre ground point free from loop distortion.'

'We have made 600W, 2kW and 4kW [peak] PSU modules – each built into a metal frame of precisely the same dimensions, so they can be incorporated into any of the amplifiers. We designed them to operate in pairs, but in practice any number can be wired in parallel giving great power and flexibility.'

'The Ultima 2 has three of our 4kW PSUs working in parallel in each mono amplifier. This is the same number we use in the Ultima flagship although the Ultima 2 has 32 lateral metal-on-silicon MOSFET power transistors, half that deployed in our larger Ultima Amp.'

The cool-running of these amplifiers is achieved by reducing the standing current down to just a few mA in each N- and P-channel pair of output devices. 'And', says John, 'this is combined with our dual feedforward transconductance error correction circuit, based on a paper by Prof. Malcolm Hawksford and work by Bob Cordell of Bell labs'.



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ABOVE: Preamp [top] offers eight line ins (four on XLRs, four on RCAs including two tape loops), one AV bypass output (on XLRs) and two sets of main outputs (on RCAs and XLRs). The power amps [below] have inverting and non-inverting inputs on RCAs and balanced XLRs with partnering sets of speaker outputs on 4mm binding posts

'Child In Time' (Osaka) sounded positively haunting through the Ultima 2/802 D3s as the distinctive, tremulous quality of Jon Lord's Hammond organ hung in the night air, punctuated by Gillan's unique vocals swinging from intimate to wild dervish in a few beats. And the bass? Firm, deep and palpable without ever sounding excessive.

I still have the original gatefold 2LP set issued in 1972 but, to really savour the atmosphere, the remaster beats it hands down. This ability to expand the scope of its sound, to render an intricate and also realistically physical performance in a decently-sized space, remains a key quality of the Ultima 2 combination.

LEFT: Chord's heavyweight, multi-function remote governs volume, balance, input and output selection. BUS A key (and \pm Vol) takes you to the Gain settings



There are other big amps that bring a slightly more velvety texture to grand classical and rock performances, but few that walk the line between incisiveness and envelopment with the confidence of the Ultima 2s.

AUDIO ICONOCLASTS

These amps – the Ultima 2 monos in particular – are poster children for the technology within. So they are not particularly 'like' any competing solutions. They tread their own path, and demand to be heard. Non-conformists the world over will, quite rightly, love them to bits. 🗑️

HI-FI NEWS VERDICT

If the Ultima flagship is a costly 'technology demonstrator' then these Ultima 2 offsprings are a textbook illustration of trickledown in action. Frankly, if you were enthralled by the debut Ultimas and have been saving ever since then cash in your chips now, buy the Ultima 2s instead and spend the excess £40k on new floorstanders and music. Yes, the Ultima Pre 2 and Ultima 2 really are *that* good.

Sound Quality: 90%

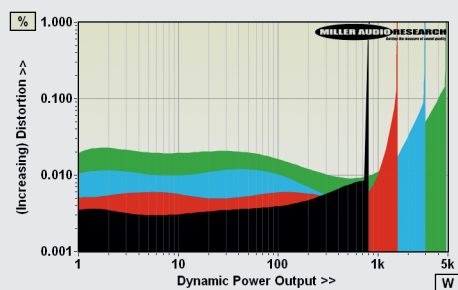


LAB REPORT

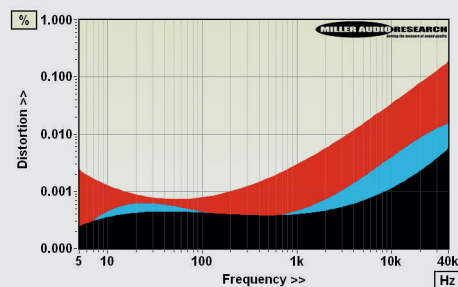
CHORD ULTIMA PRE 2/ULTIMA 2

In common with the Ultima Preamp [HFN Feb '19] the Ultima Pre 2 offers six levels of overall gain: 'x0.5', 'x1.0'... 'x2.5' and 'x3.0' amounting to -0.3dB, +5.3dB, +9.9dB, +12.1dB, +14.0dB and +15.4dB, balanced in/out, respectively. Maximum output level is 10V regardless of gain (so the input overload is a marginal 1.7V in the x3.0 gain setting), from a 96ohm source impedance, while the 'useable' range of its 99-step volume control is ~53dB. Optimum channel balance, in our sample at least, was achieved at the 1 o'clock position (12 o'clock yielding a L/R channel error of 0.65dB). Intriguingly, the A-wtd S/N ratio is significantly improved over the Ultima Preamp's 83dB (re. 0dBV) at 96.6dB while distortion is lower, and *lowest* in the x3.0 gain setting where 0.0002-0.0023% compares against 0.0003-0.0085% in the x0.5 mode [black vs. blue trace, Graph 2]. Regardless of gain, the Pre 2's response is flat to within ± 0.1 dB from 1Hz-100kHz.

The partnering Ultima 2 monoblock did not quite make its *continuous* 750W/1305W 8/4ohm power rating – 690W/1285W was nearer the mark at <1% THD – but the three ± 110 V PSUs operating in parallel delivered a magnificent 810W, 1590W, 2963W and 4850W into 8, 4, 2 and 1ohm loads under dynamic conditions [see Graph 1, below]. At 1kHz/8ohm, THD increases very gently with output from 0.002%/1W, 0.003%/10W and 0.0035%/100W up to just 0.0045%/600W. THD increases by a factor of ~20x at 20kHz, reaching 0.008%/10W [red trace, Graph 2]. Output impedance increases from a low 0.018-0.020ohm (20Hz-1kHz) to 0.09ohm/20kHz and 0.91ohm/100kHz, and the response rolls gently away at HF to -0.23dB/20kHz and -2.95dB/100kHz (10W/8ohm). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 69.6A



ABOVE: THD vs. freq. for Ultima Pre 2 (1V out, x3.0 black trace; x0.5 blue) vs. Ultima 2 (10W/8ohm, red)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	690W / 1285W
Dynamic power (<1% THD, 8/4/2/1ohm)	810W / 1590W / 2963W / 4850W
Output imp. (20Hz-20kHz, pre/power)	96-100ohm / 0.021-0.093ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.0 to -0.1dB / +0.0 to -2.95dB
Input sensitivity (for 0dBV/0dBW)	1035mV (pre) / 93mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	96.6dB (pre) / 77.7dB (power)
Distortion (20Hz-20kHz, 1V/10W)	0.00018-0.0021%/0.0007-0.08%
Power consumption (idle/rated o/p)	90W/1080W (23W, preamp)
Dimensions (WHD, Pre/Power)	480x173x355/480x180x670mm