

Chord SPM 1400 MkII

Chord has upgraded its standard series power amps to MkII guise. We give the flagship monoblock SPM 1400 MkII a good workout to see if they still hit all the *right* chords
 Review: **Richard Stevenson** Lab: **Paul Miller**

I like a good upgrade, especially when it is applied to a product I already favour. I have seen, heard and lusted after the sumptuous styling of Chord's SPM 1400 monoblock power amps for many years. Yes, the outrageous SPM 1400s remain the dream super-amp but the 1400s seemed like an amp I might actually one day be able to afford. Well, maybe. Here they are in a revised and upgraded MkII guise and, at £18,180 the pair, I still have a lot of saving up to do.

From the outside the unique Chord styling remains relatively unchanged throughout the MkII range, albeit now enhanced with a more contemporary and cleaner-looking front panel. Gone are the offset buttons for speaker switching and power, with their obvious LED indicators, replaced with a symmetrical design featuring possibly the wackiest power switch ever to grace an amplifier.

The button, if you can call it that, is a freely rotating translucent ball. In standby mode it lights up vivid red, turning green for ten seconds or so during power-up and finally a bright blue-green colour when the amp is ready to rock. Its ultimate funkiness was a little diminished on our review sample by fine scratch marks on the ball (from rotating in the metal housing I assume) that the bright illumination only served to highlight.

Thankfully they were only noticeable really close up, and you are unlikely to be looking that close anyway. When the amp is running, your attention will be diverted by the SPM 1400 MkII's dazzling display of internal LED lighting. Shining brightly through the top-plate grilles the vivid array of blue and green LEDs would not look out of place on a dedicated gaming PC. Further, the light overspill through the vents at the top and bottom casts interesting patterns on your rack and ceiling. It's like having all the 'bling' of

a McIntosh power amp done with British class and style. More products should have LED lighting inside like the Chords – although an LED-off switch might have been nice for those with a more reserved illuminatory disposition.

CHUNKINESS REDEFINED

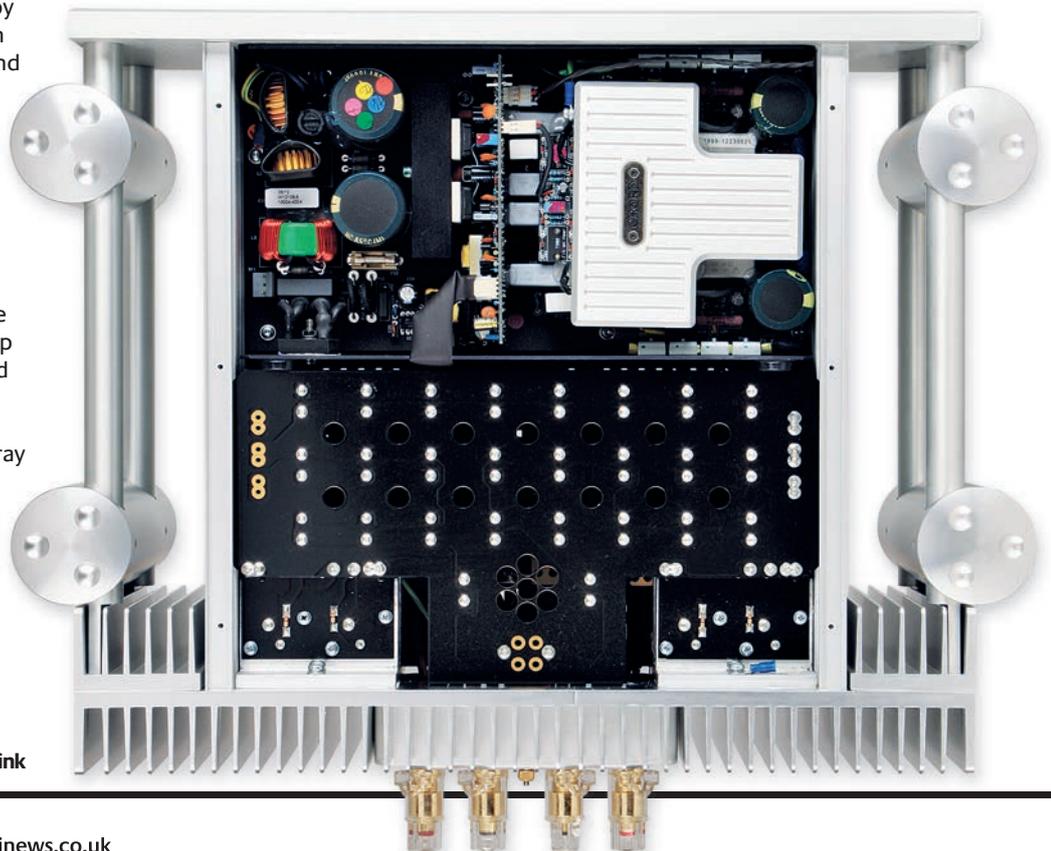
The main chassis is exactly the same as the original 1400's and is a masterpiece of industrial design in machined aluminium. As a handy by-product the side 'rails' make the amps incredibly easy to handle and move around despite their 18kg weight. The rear connections plate is a new item that serves to redefine one's opinion on the word 'chunky'. It's a monster with some of the finest speaker terminals I have ever tightened. These are a British designed binding post made by CHK in China. Mind you, the first thing you will notice is that there are *two* sets of inputs and outputs... yet this is a mono amplifier.

The marketing-based reasoning behind this is twofold. Firstly it allows easy connection of two pairs of speakers in traditional A/B manner. Secondly, the right side offers speaker outputs in phase with the input, while the left hand terminals invert the phase. This, says Chord, allows customers to choose their phase preference without the 'hardship' of connecting plus cables to minus terminals and vice versa. It does mean you will need to swap cable polarity on the second set of speakers if you want them in phase with the first for bi-wiring though.

The more logical reason is that the new stereo terminal panel cost a fortune to design, tool and manufacture so Chord was determined to use it across the entire SPM MkII range. Fair enough.

Under the casework the SPM 1400 MkIIs use Chord's renowned MOSFET power stages along with the company's proprietary aerospace-derived high

RIGHT: Interior is dominated not by a huge toroidal mains transformer but by Chord's trademark switchmode power supply. The MOSFET amp is mounted onto the rear heatsink





frequency power supply design [see box out]. Together these are slated to deliver a speaker-frightening 480W/channel. If the sheer number of 400+W amps that come my way is anything to go by, loudspeaker manufacturers had better start engineering speakers to handle considerably more peak power than they currently do.

In addition to the eye-watering power figures there is a new power-control and sequencing board for simpler operation, refinements to the filter components and a plethora of circuit board and earthing changes to improve high-current power flow. Driver circuitry has been upgraded and the peak current reserves have been boosted with new capacitor technology. Clearly we are looking at multiple tweaks and fettles over the original SPM 1400 rather than wholesale changes – but if it ain't broke there's no need to fix it.

Powering up and down is pop- and click-free; the amps themselves exhibit no transformer hum and there is very little background hiss from the speakers when playing silence. At idle they run very cool indeed and kept my electricity monitor

showing a smiley face. Mind you, they do get a bit toasty after a six-hour marathon at serious levels when the missus is out.

IN PERFECT BALANCE

It took me a while to get a definitive handle on the new Chords. They are supremely neutral, delivering quite outstanding detail and insight without any overt character to hang a review on. These are not power amps to make a statement with gung-ho bass or a top-end that flosses your teeth at ten paces. They are very evenly balanced with a gloriously clean midband and good extension in both directions without any excess. The result is perhaps the perfect balance for an audiophile hi-fi power amplifier: natural, spacious, insightful and with outstanding control over the loudspeaker. I want to say they are like 'an open window' to the music, but my cliché filter won't allow me.

'The crowd howls around you as the guitars peel from Marshall stacks'

ABOVE: Cleaner-looking front panel of the MkII features a single power switch in the form of a rotating translucent ball, which turns to blue from red via green to indicate the amp is ready

With Robert Plant's arguably best solo CD, *Manic Nirvana* [Es Paranza 7567-91336-2], the opening drum sequence on

'Big Love' kicks in with an infectious beat that the Chords pitch to perfection. Each drum strike has superb attack and detailed decay with a tangible texture to each note. My first impressions were one

of a slight dryness to the bass but the more I listened the more I concluded they were simply being more faithful to the recording than I am used to.

They don't plumb the depths of LF response nor hit you with a visceral wave of bass energy – both of which I admit a fondness for – yet the integration of the drums and bass guitar within the track is just so 'right'. There is an enviable sophistication to the Chord's sound. (Personally I like my amplifiers a bit more dirty and excessive-sounding, particularly at the bottom end.)

No such reservations by track four, 'I Cried' (the track, not the Chords moving me to tears). Reminiscent of the more retrospective tunes on *Led Zeppelin IV*, the Chords deliver the track's acoustic guitar with sensational realism born of accurate detailing of each plucked string. The leading edge of each note is fast and dynamic, the sustain is warm and organic, and the separation of individual notes all but describes with micrometer precision the finger position on the fret board. The imaging is wide yet not artificially so. The 

DYNAMIC COUPLING

We asked John Franks, Chord's Chief Designer, about the innovative engineering behind its bespoke power supplies. 'All Chord amplifiers are designed around an advanced switched-mode power supply technology [in this instance, circa 87kHz for a 1-4kW capacity], originally developed where quality and power was needed in a very space-efficient design.' The supply is self-monitoring and necessarily core to the amps' performance [see Lab Report, p63]. Chord's 'Dynamic Coupling' system is employed to balance the supply's positive and negative rails via a bifilar-wound inductor (a transformer) between the secondaries of the two main power transformers and their secondary rectifiers. The choke's bifilar winding ensures that demand on the positive rail, for example, is reflected onto the negative, drawing power through the choke and normalising the load. Because neither rail is left 'flapping in the wind' this reduces PSU-related noise that might otherwise be injected into the ground plane. PM

MONO POWER AMPLIFIER



ABOVE: Unmarked, but explained in the manual, the right-hand RCA and XLR input(s) provide a non-inverting output, the left-hand RCA/XLR inputs an inverting output. Only one input may be used but the 4mm speaker outlets are paralleled for bi-wiring

guitar and the high-hat are placed to the sides and Plant's vocals are set firmly centre stage.

'Liar's Dance' is the CD's masterpiece track with hard-struck acoustic guitar chords defining the rhythm of the piece. Each note is intensely detailed, with great projection from the speakers. Plant's voice comes in with urgency, transporting you into the song by the heart rather than the ears. You can't help but push up the volume... the Chords just keep on giving, in scale and engagement.

It's not until the following track, the fast-paced and complex 'Watching You' that things get a little quirky at high volumes. The natural and slightly lean bass results in a mildly mid forward stance at these three-digit SPLs, making the crashy top end of the track a little edgy and uncomfortable.

1980 AND YOU ARE THERE

In an altogether more sedate listening session the 1400s pulled off a spectacular run of goosebumps with track after track of Leonard Cohen's *Dear Heather* CD [Sony BMG COL514768]. The amp's grip and control refine the recording's rather compressed and excessive bass while the lucid midband puts Cohen and Sharon Robinson's vocals firmly in the room. The moody track 'The Letters' is delivered with outstanding intonation of Cohen's voice, from its gravelly depths to the immaculate enunciation of sibilant syllables. Robinson's voice is craft sweeter that a pot of honey on a summer's day and when the two harmonise the result is simply angelic.

Such is the SPM 1400's insight I found myself firing up the GyroDec and digging out Whitesnake's *Live...*

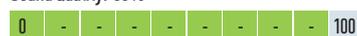
in the Heart of the City [EMI Liberty SNAKE 11]. This is the band's seminal live recording at the Hammersmith Odeon in 1980 and the Chords take on the challenge of reproducing the slow blues title track – 'Ain't No Love in...' – like they had been there. Benefiting from the scale of my big Tannoy Dimension TD12s, Coverdale's voice is etched in the huge dynamic of the soundstage with the crowd howling around you and the guitars peeling from the Marshall stacks.

Every note is articulated with not just precision but real passion. Passion that clearly details the sheer musicianship of every artist on stage and the heart and soul they were putting into the performance that night. The communication of the event is breathtaking. By the blues guitar solo and the crowd singing the chorus it is difficult to believe you are not actually standing right there. Right there surrounded by a fug of smoke, lost in the moment and playing air guitar like your life depended on it. Stunning. ☺

HI-FI NEWS VERDICT

Beautiful to behold by both eye and ear, Chord's MkII SPM 1400 monoblocks offer spectacular insight into music. Majoring on clarity, timing and delivering natural realism like few other power amps at any price, they tick every box in the audiophile hi-fi check list. Neutral, detailed and with breathtaking resolution. Only those with a penchant for lung-crushing bass could possibly find them wanting.

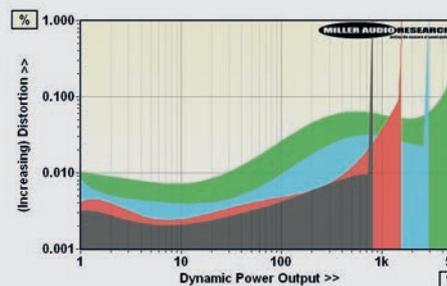
Sound Quality: 83%



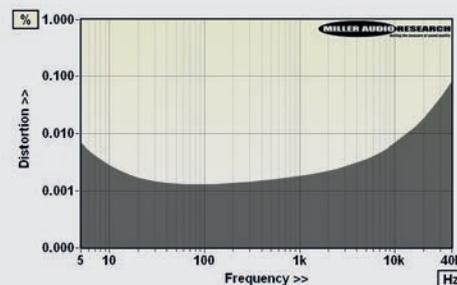
CHORD SPM 1400 MkII

If proof were needed of the efficacy of Chord's 'dynamically coupled' switched-mode power supply [see boxout, p61] then this is provided in the transient output capability of the SPM 1400 MkII. Already fabulously powerful, and besting its 480W/800W specification at 620W/1.08kW into 8/4ohm loads, there's sufficient headroom to accommodate a full 810W, 1.55W and 2.94kW into 8, 4 and 2ohm under dynamic, music-like conditions at <1% THD. This monoblock gets far closer than most at doubling its output into each halving of load impedance, only stopping at 5.08kW/1ohm (an astonishing 71A at just 0.2% THD) once Chord's electronic protection waves the white flag [see Graph 1, below]. In practice, the amp will drive any speaker likely to cross its path to destruction, along with your ears, so kindly take care with the volume control.

Interestingly, there's a marked reduction in distortion as the amp warms up, falling from 0.0033% when cold to 0.0018% after 30 minutes at 10W/8ohm. Beyond 2-3W output there's also an almost linear increase in THD with power, from 0.001% at 1W to 0.002% at 10W and 0.004% at 100W (etc) through the midrange. THD is impressively 'flat' and innocuously 2nd harmonic across much of the audio range but increases quite steeply above 10kHz to 0.018% at 20kHz/10W to 0.08% at 40kHz/10W [see Graph 2]. The response has a sympathetic HF roll-off from -0.14dB/20kHz to -2.8dB/100kHz and while the A-wtd S/N is just slightly below average at 80dB (re. 0dBW), it's in a league of its own as far as huge switchmode types are concerned. Readers may view an in-depth QC Suite report for Chord's SPM 1400 MkII monoblock amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Excellent load tolerance



ABOVE: Distortion vs. extended frequency from 5Hz-40kHz at 10W/8ohm. THD increases through treble

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	620W / 1080W
Dynamic power (<1% THD, 8/4/2/1ohm)	810W / 1.55W / 2.94kW / 5.1kW
Output impedance (20Hz-20kHz)	0.022-0.081ohm
Frequency response (20Hz-100kHz)	+0.01dB to -2.8dB
Input sensitivity (for 0dBW/480W)	88mV / 1915mV (balanced)
A-wtd S/N ratio (re. 0dBW/480W)	79.7dB / 106.5dB
Distortion (20Hz-20kHz re. 10W/8ohm)	0.0013-0.018%
Power consumption (Idle/Rated o/p)	86W/780W (2W standby)
Dimensions (WHD) / Weight	420x150x355mm / 24kg (each)