

Primare I15 Prisma

This neatly packaged, sleekly-styled Scandinavian integrated offers DAC and streaming functionality, plus a very fine sound thanks to its proven Class D power amp modules
 Review: **David Price** Lab: **Paul Miller**

Many think of Apple as creating today's world of sleek, minimalist consumer electronics – but the business and creative heads of that Californian company – Steve Jobs and Jonathan Ive – were themselves inspired by great talents working in hi-fi, long before the iconic iPod was ever launched. Lest we forget, Jacob Jensen did amazing industrial design work at Bang & Olufsen for decades, as did Dieter Rams at Braun 15 years earlier.

Less well known perhaps is Clas-Göran Wanning, who brought clean, crisp style to Sonab's range of hi-fi separates. Now, one might say that Swedish-based Primare has picked up the baton. Since its inception in the early '80s, Primare has come up with some striking hi-fi products. Founded by Danish designer and audiophile Bo Christensen, it has always been concerned with making fine sounding, lovely-to-use equipment. The new I15 Prisma is the company's most compact, lifestyle-orientated product and retails for £1600.

CROSS PLATFORM

It's a preamplifier, DAC and power amp built into one small box, and features Primare's own control and connectivity platform called Prisma. This is a 'one-stop shop' for most people's digital media needs, offering the full spectrum of system management from a single control point. It offers Wi-Fi and Bluetooth streaming, network-attached storage playback plus multi-room/multi-zone connectivity and control. And all this is managed via the crisp-looking, neatly ordered Prisma application, available on both iOS and Android smartphone platforms.

Such impressive functionality is wrapped in a three-quarter sized (350x73x329mm, 6.4kg) case, which is all the more surprising when you consider that the I15 Prisma

offers a rated output of 60W/8ohm courtesy of two tried-and-tested Hypex Class D amplifier modules [see PM's boxout, p65 and Lab Report, p67]. There's a fairly heavy-duty, custom-designed switch-mode power supply fitted inside while the DAC section employs the respected AK4490EQ part from AKM. It also plays the usual WAV, AIFF, FLAC, ALAC, MP3, MP4 (AAC), WMA and OGG files, so won't have a problem with legacy computer audio.

The preamp section's relay-selected inputs are said to give better isolation than conventional switches. Short signal paths are used, with two and four-layer double-sided circuit board construction and surface-mount components employed

whenever possible. The busy rear panel has three optical digital inputs, one coaxial and one 3.55mm mini-plug – all running up to 192kHz/24-bit PCM. The USB-B input goes to 384kHz/24-bit and DSD5.6/128. Two screw-in Wi-Fi antennae are accommodated alongside two Ethernet sockets, two pairs of RCA analogue inputs, a set of loudspeaker binding posts and control socketry for system integration.

Despite its relative lack of buttons, the I15 Prisma is highly configurable, with a sharp OLED display revealing options to adjust the balance, maximum volume, mute volume, start-up volume, etc. You can get the amp to display all the inputs, or only those with signal going in, and change



RIGHT: Main PCB hosts the ADC and DAC [top right], Prisma network facility [top centre] and the compact Hypex Class D amp module [left], all fed from Primare's own switch-mode power supply [separate PCB, below]



ABOVE: Three-quarter width alloy front panel has just four buttons – on/standby, input selection and volume. OLED display is crisp but some may find it hard to read from a distance

the names of the inputs. There's adjustable input gain and a front panel lock feature, among many other facilities.

The front panel switchgear confers a sense of precision and quality, and it looks handsome in either Black or Titanium finishes. Considering its great flexibility, the Prisma control app makes managing music very straightforward. It offers easy access to networked music, Bluetooth, AirPlay and streaming services such as Spotify Connect, includes 'Chromecast built-in' and is a Roon end point. It also gives you control of the amp's other inputs via its menu system. The supplied remote doesn't let the show down either – with its slimline proportions, rubberised buttons and a case made from smooth plastic, it feels good to use.

SHINE ON

There's something instinctively right about the sound here. Despite its diminutive dimensions, the I15 Prisma presents a thoroughly respectable face

to the audiophile world. There's a wide soundstage inside which you hear a goodly amount of detail. Tonally it's very smooth and the textures of different instruments are rendered with pleasing realism. What's more, it never runs out of steam at sane listening levels when partnered with sensible loudspeakers, even on quite densely produced music.

'Simple Minds' potent electric organ takes no prisoners'

Sophistication is the I15 Prisma's greatest asset – for while some rivals at this price deliver a steely sound at higher volumes, it proves to be really rather more relaxed. Take Simple Minds' 'Chelsea Girl' [Life In A Day; Virgin VMCD 6] via the coaxial digital input by way of example. This is a relatively early song from when this Glaswegian band had only just left its punk roots behind. The recording is a little bright – strident even – and the cranked-up electric organ takes no prisoners. Yet the I15 Prisma served up a civilised rendition that didn't go

anywhere near hardness or stridency. Indeed, you might say it lost just a little of the song's natural edge. But it was a subtle sensation and the right way to go considering that this affordable amplifier may end up driving less couth loudspeakers than perhaps it deserves.

SONOROUS SOUND

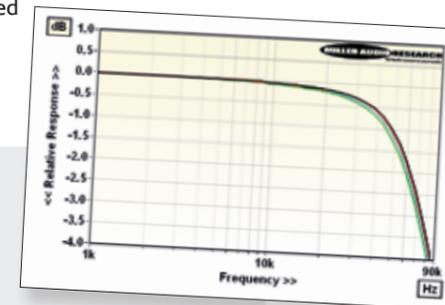
There's also a very slight opacity to the midband, which doesn't quite drill deep down enough. This made for a subtly airbrushed sound to the frenetic guitar pop of The Bodines' 'Therese' [Played; Magnet (2) BODL 2001] via CD for example. It's a great song that has something of a rough and ready production, yet it came across as just a touch too refined. Of course, 'refined' will be a vote winner when 'rough

and ready' is not appreciated...

Moving to smoother recordings, and the amplifier's innate quality really begins to emerge. For example, Yellow Magic Orchestra's 'Technopolis' [Solid State Survivor; Alfa 32XA-139] is four minutes of late '70s

analogue electronica, and exceedingly well recorded for its day. The I15 Prisma set up a busy soundstage, packed with musical detail, so those classic keyboards felt tangible, bristling with harmonics that contributed to a fittingly sonorous sound from bottom to top.

Bass was surprisingly fulsome, if not particularly muscular, so if in absolute terms there was some lack of grip, especially at higher volumes, I still appreciated the warm and sumptuous feel. At high listening levels, you could sense things were lightening up a little, ➔



CLASSY CLASS D

Earlier Primare amplifiers were equipped with the brand's own analogue Class D amplifier technology called UFPD (Ultra Fast Power Device) and its UFPD 2 is employed in the new I35. Nevertheless the UFPD circuit occupies a substantial PCB real estate and is very costly to build – two factors that militated against its use in the I15.

Primare looked to an 'off-the-shelf' solution but its choice of Hypex's UCD102 module was not arbitrary – while it is more affordable and certainly more compact in production design, its technical 'fingerprint' is closer to the UFPD, and vice-versa, than any other Class D alternative. Both are very stable, single-ended analogue Class D types that offer an entirely predictable response and distortion regardless of speaker load. And, as we've proved in earlier reviews, that's not something we can say of all Class D amps [HFN Aug '18 & HFN Jul '16].

The inset graph shows the I15 Prisma's consistent response into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads using a 192kHz digital input [note the 1kHz-90kHz scale]. The Class D section is analogue but as all Primare's mid-circuit processing is digital this means the single line input is first digitised at 48kHz/24-bit. This is converted back to analogue before the Hypex amp but it does mean the line input's response is limited to -0.6dB/20kHz. PM

PRIMARE I15 PRISMA



ABOVE: Wired/wireless network streaming (Bluetooth, Airplay, Spotify, Chromecast) is offered alongside a coaxial, 3.55mm mini-plug and three optical S/PDIF ins, a USB-B port and one analogue line in/out. Speakers are served by 4mm binding posts

as the little I15 struggled to catch its breath, but still it showed grace under pressure.

John Coltrane's 'In A Sentimental Mood' [*Both Directions At Once: The Lost Album*; Impulse B0028228-02] – a CD rip streamed from my NAS drive – proved a sumptuous, silky pleasure. The song works thanks to the interplay between Coltrane's plaintive saxophone work and the spiky, at times unscopated, piano part. The shuffling drums behind add a third challenge, too. The I15 Prisma coped well, neatly capturing the purity of the lead instrument – a gutsy and occasionally raw sound. It strung the piano and drum work together well, albeit in a little too workmanlike a fashion, but still doing a sterling job of keeping this tough track together.

TENDERNESS INTACT

Its ability to reveal a deep and wide soundstage was also impressive for such a compact integrated. Kate Bush's 'Snowflake' [*50 Words For Snow*; Fish People FPCD007 96kHz/24-bit download] showed just how well it deals with spectacular modern hi-res productions, throwing out large amounts of detail while keeping the song's tenderness intact. What really impressed was

both the width of the recorded acoustic and how well it hung back in the room. All that air and space allowed Kate's eerie, icy vocals to loom large in the listening room and work to great effect.

The same was largely true via the analogue input. I relished listening

LEFT: The C25 handset partners with all Prisma separates, offering input selection, volume and access to setup for the I15 network amp



to my new 12in vinyl pressing of Manix's 'Hold Dis' [*Hypnosis*; Reinforced Records RIVET LP23] via a Trichord Dino phono stage. The I15 gave a brisk and well-ordered presentation that was easily informative enough to dig into and enjoy. Music was effortlessly projected from the loudspeakers, and images were placed precisely within the mix, with a decent degree of front-to-back depth, too.

In absolute terms however, the analogue input didn't have that last degree of power and passion as did the digital inputs. The presentation now seemed a little more opaque and processed in feel, showing that the digital and network connections are clearly the stars of the show.

Bluetooth also proved surprisingly enjoyable, making a fine fist of ABBA's jaunty 'Take A Chance On Me' [*The Album*; Polydor 533 980-2], courtesy of an AAC file played via my Apple iPad. Although not the last word in hi-fi, the music's innate charm nevertheless shone through, the track sounding peppy and jolly, just as it should.

Indeed whatever the source, the I15 Prisma sounds tidier and cleaner than many of its more minimalist audiophile rivals, proving that it's possible to combine flexibility with an enjoyable and pleasing listen, whatever your musical tastes. ☺

HI-FI NEWS VERDICT

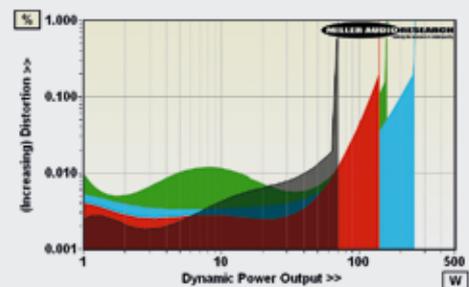
Such is the elegant industrial design of this compact, network-capable integrated amp that its versatility might, on very brief examination, be missed. For alongside its fine sound there's extensive functionality including Roon and Chromecast. Decidedly not a minimalist product, the Primare I15 Prisma is a lovely listen that packs a wealth of technology into a small box, and does so with great élan.

Sound Quality: 84%

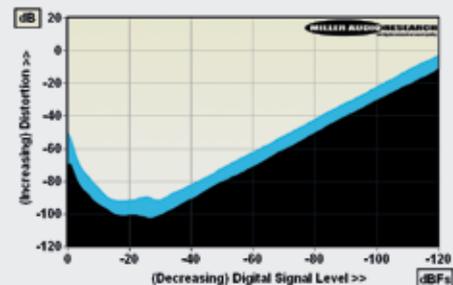


As I noted in our boxout [p65] the full bandwidth of the I15 is only realised via its digital inputs as the analogue line input is sampled at 48kHz and the response thus limited to ~20kHz. Otherwise the amplifier's response scales with incoming sample rate, reaching -0.6dB/20kHz, -1.8dB/45kHz and -4.88dB/90kHz with 44.1/48kHz, 96kHz and 192kHz files, respectively. Volume is another matter however, for digital inputs are limited to a maximum safe 'position' of 55 out of 99. At volume '54' a 0dBFS digital input delivers a maximum 64W at 0.017% THD and at '55' the same peak level 0dBFS delivers 71W/8ohm, when the amplifier is in clipping. The analogue input yields finer control, revealing the I15's true capacity of 72W/8ohm, 140W/4ohm and 72W, 140W, 255W and 161W under dynamic conditions into 8, 4, 2 and 1ohm loads [see Graph 1]. The fact that both continuous and dynamic outputs are identical, and almost precisely double from 8-to-4ohm, is a textbook result for a Class D amplifier with a very capable (switch-mode) power supply.

Distortion scales gently with output and with frequency via all inputs, from 0.00045%/20Hz to 0.003%/20kHz at 1W and 0.0045%/20Hz to 0.013%/20kHz at 10W/8ohm. The lowest distortion is achieved at -15dB to -25dB below full output [see Graph 2, below]. The A-wtd S/N ratio is as expected for the Hypex UCD102 module at 87.2dB (re. 0dBW) and slightly better at 89.3dB with digital inputs (re. 0dBFS/0dBW). The maximum A-wtd S/N ratio (re. 70W) is 106.7dB. Jitter is impressively low courtesy of the AKM AK4490 DACs at 175psec/48kHz and 160psec/96kHz (the Hypex modules are analogue in design and therefore cannot contribute to 'jitter', only intermodulation). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 12.7A



ABOVE: THD vs. digital level (1kHz, black; 20kHz, blue) where 0dBFS = 70W/8ohm and -18.5dBFS = 1W/8ohm

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	72W / 140W
Dynamic power (<1% THD, 8/4/2/1ohm)	72W / 140W / 255W / 161W
Output impedance (20Hz-20kHz)	0.058-0.066ohm
Freq. resp. (20Hz-20kHz/90kHz)	+0.0 to -0.12dB/-4.88dB
Distortion (20Hz-20kHz, 0dBFS/0dBW)	0.0012-0.0015%/0.0044-0.002%
A-wtd S/N ratio (re. 0dBFS/0dBW)	89.3dB (Dig) / 87.2dB (Analogue)
Digital Jitter (48kHz/96kHz @ 10W)	175psec / 160psec
Power consumption (idle/rated o/p)	19W / 145W (2W, standby)
Dimensions (WHD / Weight)	350x73x329mm / 6.4kg