

Novafidelity X45Pro

This do-it-all unit, designed as the hub of a digital music system, combines ripper/server, streamer, player, DAC and more. Is this a total solution, or is it trying too hard?

Review: **Andrew Everard** Lab: **Paul Miller**

Here's a simple suggestion for anyone thinking of moving from 'physical media' to computer-stored music, or at least adding a collection of files to their system: buy the most complex piece of equipment you can find. Yes, that may seem like some kind of lunacy for the beginner in ripping, serving and streaming, but then the £5099 Novafidelity X45Pro, the flagship of its manufacturer's range, will do everything you could ever think of in the world of digital audio – and then some.

What's more, it manages to be suitably futureproof, with access to a wide range of music services and also extended file-handling, but then its manufacturer has been doing this ripping and serving thing for a good while now, and shows every sign of knowing what it's doing.

AUDIO COMPUTER

Novafidelity is a brand of Korean company Novatron, which first appeared on these shores with ripper/servers under the name of Cocktail Audio. Indeed, the X45Pro still fires up with a cocktail glass graphic on its large, crisp colour display, before preparing itself for use. This, after all, is basically an audio computer – it runs on a 1GHz Quad-Core ARM Cortex-A9 processor – and so takes a little while to boot up. It's fast enough not to be tiresome, but I'd suggest keeping it up and running for instant use.

At the entry-level of the Novafidelity range, you can spend as little as £689 for the little X14, and get almost all the X45Pro's basic functionality, but as you move up through the range you get enhanced capability and audiophile engineering, albeit with some forks in the road on the way. For example, the 'basic' version of the X45 will set you back £2149, while the next model up is the £3999 X50D, which is a 'pure digital' model with

no onboard DACs. The range also offers some ancillary models, such as the £649 N15D network adapter/USB DAC, and a DAC/headphone amp, the £2095 HA500H.

STORAGE SOLUTIONS

All the company's ripper/streamer units have one thing in common: the basic price you see excludes any internal storage, enabling the consumer to either buy the unit 'as is' and add their own hard drive, or purchase it with a choice of drives installed. Given that the add-on prices for drives range from £140 for a 2TB HDD to £300 for an 8TB HDD, and £190 for a 500GB SSD through to £515 for a 2TB SSD, I'd suggest you buy the machine sans drive and install your own. It's very easy, thanks to a slide-out caddy on the rear panel, and will take a matter of minutes to do, after which the X45Pro will format the drive and it's ready for use.

That done, ripping discs is just a matter of going into the menus and setting up the copying, including choosing the file format, then slipping the disc into the slot-loading CD transport. It'll be ripped and then ejected, and you can move on to the next. You can also copy files from USB memory sticks or hard drives to the internal storage, for which three USB host ports are

provided – two on the rear and one on the back.

It's sensible to use one of these USB ports to connect a back-up drive, to which the X45Pro will automatically copy everything currently on its internal storage.

But if you already have a NAS (Network Attached Storage) containing music, or just a collection of music on your home computer, the X45Pro can act as UPnP client to play that content, or indeed as a server to allow its own content to be streamed to external players.

'It's hard to imagine anything digital it cannot do'



RIGHT: The network solution [top left], music library HDD [underneath] and CD ripper [DVD writer, middle] are all powered by a screened switchmode PSU [far right] while the ES9038 DAC/analogue board [top right] has a linear PSU



But that's just the start of what this unit can do. It can also act as a DAC, either via conventional digital inputs or with a USB connection to a computer, enabling it to handle content in PCM-based audio at up to 768kHz/32-bit and DSD up to DSD512. It can link to a Tidal account to access streamed content, including MQA-encoded Masters files, and to a Highresaudio account for direct downloads, as well as having a built-in Internet radio tuner and even FM/DAB capability for terrestrial wireless. Oh and it works with Spotify, Napster, Qobuz, Amazon Music and more, and is also Roon-ready.

And then – yes, there's more! – it can also record from analogue sources, having one set of line-ins and even a MM phono stage, while to say that outputs are provided on a range of connections is something of an understatement. As well as both balanced XLRs and unbalanced RCAs, which can be set at fixed level or controlled via the volume knob on the front, there's a choice of digital outputs on coaxial, optical and AES/EBU (to match the same array on the input side).

Not done yet: the X45Pro can also output digital audio via a dedicated USB port, for example into a USB-capable DAC, and over an HDMI connection into a suitable DAC or even an AV receiver. Take that last option and it can also display its menu system on a connected TV, or a standalone computer monitor.

Control is possible via the supplied remote handset [p65], the Novafidelity app or a computer browser [see boxout, below] while networking is via a Gigabit Ethernet port on the rear, or Wi-Fi, if you must, using an optional USB dongle, which plugs into one of the ports on the rear of the unit and will cost you another £35.

BRING OUT THE BIG GUNS

That's quite an arsenal of facilities, and might have you wondering whether such a product, even one claimed as a 'Reference-level Music Player & DAC for Audiophiles', can possibly do so much and still sound good. Well, the X45Pro is more than just an up-spec'd version of the company's lesser models, being built on an (even) more substantial platform, and with high-quality

ABOVE: Colour 7in TFT display hosts everything from album artwork, file format and sample rate, volume level and access to the setup menu. Main controls are on the right, volume to the left

components including the widely-used ESS Sabre Pro ES9038Pro DAC. As our internal shot shows [p62], completely separate shielded power supplies are used for the audio section and all the computer stuff, and the whole machine has a solidity and substance that's a very long way from those entry-level Cocktail Audio products.

And its performance lives up to the design and build, whether playing discs – yes, it does that too – or delivering the same tracks from its internal storage. The X45Pro sounds rich and powerful, and reveals plenty of detail from everything from rock warhorses to the most delicate of solo instrumental recordings.

The bass is perhaps a shade shy of offering total extension and control, but there's no denying the ability of this machine to keep up with a hard-hitting rhythm section. So The Blockheads' engine-room on 'Hit Me With Your Rhythm Stick',

MUSICX APP

Using the X45Pro is as simple, or as complex, as you choose to make it, but just for once the obvious way – using the supplied IR remote control – isn't the simplest option. Even after using several Novafidelity models, I still found myself button-hunting if I wanted to do anything much beyond basic playback. Better by far are the on-screen options the company provides, either in the form of the Novafidelity MusicX app, which is available for both Android and iOS devices, or via a customised web browser interface [see pictures, inset here].

To access the latter, simply type the X45Pro's IP address into whichever browser you use, and the screen will load. As well as normal operations, these methods will also allow you convenient access to the unit's comprehensive, and complex, menu system, allowing everything from the ripping format to browser view preferences to be adjusted. They also provide access to the firmware update facility, which will download the appropriate file(s) from Novatron's server. Alternatively the X45Pro can be controlled remotely as a Roon endpoint, although this requires a Roon core running on the network.



NOVAFIDELITY X45PRO



ABOVE: Optional Wi-Fi and HDD storage options are hosted alongside digital coax, optical and AES/EBU inputs, USB-B and three USB-A (two for external drives plus one on the fascia) and wired Ethernet. Outputs include balanced XLR and single-ended RCAs alongside digital on coaxial, optical and AES/EBU

from the *Reasons To Be Cheerful* compilation [Music Club Deluxe MCDLX016] sounds suitably slinky and infectious, but with real punch, while Chas Jankel's piano shines through in appealing fashion.

With the old school prog-rock of Genesis – in this case 'Dance On A Volcano' from *A Trick Of The Tail* [Charisma CDSCD 4001] – the X45Pro can sound a bit thick when the music gets really busy, but otherwise drives the rhythms along with real snap. However, switching to the DSD64 version [Virgin 0946 385964 2 4], fed in via the USB-B input, sees the X45Pro clean up its act and turn on the punch again rather well, while also allowing a deeper listen into the mix.

AND PHONO TOO

I have to admit that I favoured the USB input for most of my listening to external digital sources, simply because I found the coax and optical S/PDIF route a shade dry and lacklustre. And anyway, with an onboard disc drive and storage, there's a limited range of sources one would want to connect to them.

Meanwhile, the onboard phono stage was especially impressive, and with a deft touch over the controls, this made fine-sounding recordings from my Rega turntable. Otherwise, and in absolute terms, the X45Pro's sound is just a



LEFT: Full system remote offers control over all inputs, setup and configuration menus, storage and playback options

little lightweight, with some loss of soundstage depth with big orchestra works such as Barenboim's complete Beethoven symphonies with the West-East Divan Orchestra [Decca 478 3511]. It also lacks a little ambience and presence with intimate jazz recordings like Carmen Gomes Inc.'s *Don't You Cry* [Sound Liaison SL1030A; DSD256].

This set, with each track having been recorded in a single take with just one stereo microphone (a Josephson C700S), can sound spiningling. Via the X45Pro it sounded impressively immediate but it didn't quite sparkle as I know it can.

So it's mainly as a digital workhorse that Novafidelity's X45Pro will be considered, and it fills this role rather well, whether you want it as a standalone ripper/player or choose to explore its extended network capabilities.

Using it as a UPnP server for other network players proved very simple, as was playing music seamlessly from my NAS storage, either using UPnP and its control app, or via Roon. If you're looking for total all-round ability, this comprehensively-equipped unit is likely to appeal, and it's hard to imagine anything *digital* that it cannot do. ☺

HI-FI NEWS VERDICT

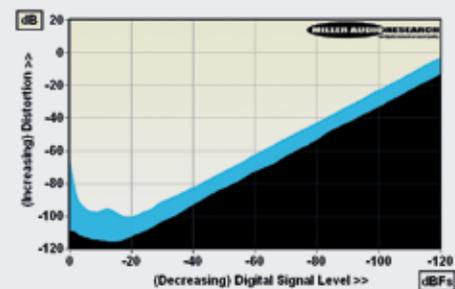
While the X45Pro's sound can't quite stand up to that of a dedicated high-end network player, that's not unreasonable given the sheer range of facilities it offers. You *could* put together a stack of equipment to do everything it accomplishes, but it would be quite a mess: what we have here, in one substantial unit, is digital audio made room-friendly, if not quite simple – this is a complex machine.

Sound Quality: 80%

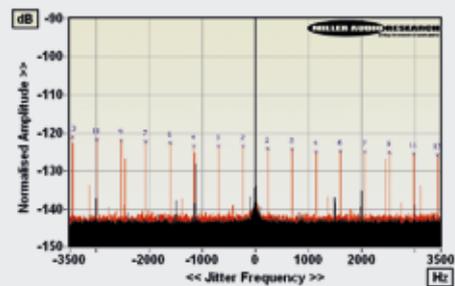


Parent brand Novatron makes great play of the fact its X45 'Pro' version is equipped with a pair of ES9038 DACs, and while this latest iteration of the ESS 'Sabre Reference' family has not always proved as straightforward to implement as the ES9028 and ES9018, its performance here is exemplary. Maximum output is 6.2V (balanced XLRs) from a low 48ohm source impedance (increasing to 150ohm at 20Hz), assisting a wide 118dB A-wtd S/N ratio and low distortion that's typically ~0.0002–0.0006% over the top 30dB of its dynamic range through bass and midrange [black infill, Graph 1 below]. There is some variation in performance with sample rate, however, for with 44.1kHz/48kHz digital inputs the output is clipped at 20kHz [blue infill, Graph 1] but not so with the same 20kHz/0dBfs input at 96kHz, 192kHz, etc, where distortion is just 0.003%.

The digital filter also looks to change with sample rate – the minimum phase type invoked with CD/48kHz data yielding a response that's flat to 18kHz within ±0.02dB (–0.34dB/20kHz) but with a stopband rejection of just 21dB. By contrast the response rolls away more rapidly with 96kHz data to reach –8.75dB/45kHz. Then, with 192kHz music files, the response flattens out again, actually 'peaking' by +0.25dB/80kHz and falling to just –0.15dB/90kHz. As promised, jitter is fabulously low whether the X45Pro is fed via its digital inputs or from media ripped and/or stored on the captive HDD. The figures for 24-bit data are just 12psec, 6psec and 10psec with 48kHz, 96kHz and 192kHz data, respectively, while ripped CD is also state-of-the-art at 118psec – the figure limited by the 16-bit data pattern of the jitter test [see Graph 2, below]. PM



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter spectra (48kHz/24-bit data over network/USB, black; ripped CD, red, with residual 16-bit data pattern marked)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	6.21Vrms / 48-150ohm (XLR)
A-wtd S/N ratio (USB / CD)	118.6dB / 118.5dB
Distortion (1kHz, 0dBfs/–30dBfs)	0.00023% / 0.00063%
Distortion & Noise (20kHz, 0dBfs/–30dBfs)	0.0028% / 0.0025%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to –0.3dB/–8.8dB/–0.2dB
Digital jitter (USB / CD)	10psec / 118psec
Resolution @ –110dB (USB / CD)	±0.2dB / ±0.5dB
Power consumption	21W (1W standby)
Dimensions (WHD) / Weight	440x130x329mm / 11kg