

# Naim Audio ND5 XS 2

The entry-level model in Naim's new network music player range may look simple to the point of anonymity, but its performance could make it the true star of the lineup  
 Review: **Andrew Everard** Lab: **Paul Miller**

No display, no power supply upgrade route, not even a remote handset: at first glance, the most striking feature of Naim's £2299 ND5 XS 2, the junior model in its revitalised network music player range, could be everything it *hasn't* got. After the striking looks of the 'new Uniti' models, with which it shares a software/hardware platform, and the large full-colour displays of the pricier NDX 2 [HFN Sep '18] and ND555, the ND5 XS 2 gives away little about its functionality.

Available in a choice of vibrant colours – no, only kidding, it's just in black – its blank face is alleviated only by the usual green Naim logo, an unmarked USB-A port to which memory devices and personal players can be connected, and a standby button. The new model almost appears to have been designed to be hidden away in a rack and just left to get on with its job, which is exactly how you use it.

## KEEP IT SIMPLE

In practice line of sight is not needed for remote control, as all the set-up and operation is achieved using the Naim app (for iOS and Android) running on a tablet or smartphone [see boxout, p61]. This follows a growing trend in 'computer audio' devices where, if a box is designed to be operated using an app, there's a lot that can be left out hopefully freeing up more of the bill of parts for components contributing positively to sound quality. In the case of the ND5 XS 2, however, there was a more prosaic consideration – the slimline XS series casework means there's simply no room for the colour display fitted to the likes of the NDX 2.

Is that any hardship? Not really, given that so much of the functionality of these network players is reliant on the company's highly-developed app. Indeed, the two

units I currently run – a Naim Uniti on my desk and an NDS in my main system – have been used for several years without reference to their displays. I'll also add that Naim describes the ND5 XS 2 as its entry-level streamer, a term it uses in place of 'network music player', and to my mind something of a misnomer as a streamer should be all about the supply of content, not its delivery.

Otherwise, the ND5 XS 2 is just as well equipped as the other models in the company's range, at least in terms of the file formats and services it can handle. That's down to the major component shared across the latest Uniti and ND-products, specifically Naim's 'platform for the future', designed not just to update the products' compatibility, but also to ensure they remain abreast of any future developments in this sphere. This is the in-house network/streaming/signal processing 'heart' of the product which facilitates everything from DLNA/UPnP music over a home network, to online services from

Internet radio to the likes of Spotify Connect and Tidal. It also enables direct wireless access to the unit using Bluetooth and AirPlay while a recent firmware update has now upgraded this to AirPlay 2, with its extended multiroom capability.

## SOFT AND HARD INPUTS

In addition to these 'inputs', the ND5 XS 2 also offers a range of more conventional 'hard' connectivity. As well as the front-panel USB Type A port, there's another to the rear, perhaps best used for the permanent installation of a local music store, which the unit can expose to other network players when its 'server mode' is selected by the user.

Meanwhile digital inputs run to two optical and two coaxial, including one on a single RCA socket and the other using Naim's preferred BNC connection. So the ND5 XS 2 can also be used as a DAC for external legacy sources, in which role it performs more than acceptably, even if its target role is rather more 'this century'.



**RIGHT:** Substantial linear PSU [lower right] has independent regulation for Naim's custom streaming platform and FPGA-based filter/upsampling [top right PCB] and PCM1791 DAC-based analogue board [top left PCB]



Analogue outputs are on both RCAs and the usual Naim DIN (for which a cable is supplied), with a single BNC providing the digital output option, while networking is handled by an Ethernet socket and a pair of stubby rubber Wi-Fi antennae, with a third, even stubbier one, supplied for the aptX HD-capable Bluetooth. A final connection, marked 'IR out' enables the ND5 XS 2 to control input selection, volume and muting on a compatible Naim amplifier, and the player is supplied complete with the company's 'floating pin' Power-Line Lite mains cable, which is now standard across the range (at least for units requiring a UK mains plug).

## BEST PRACTICE

As with all the Naim network products, unused inputs can be turned off in the app, thus greatly simplifying the graphical interface, and the same method is used to choose which outputs are enabled. It's possible to have both sets of analogue outs and the BNC digital out functioning simultaneously, but for the best performance it's best to select one and

stick to it. Similarly one can select between fixed and variable analogue output level, although Naim suggests the variable setting is only to allow AirPlay 2's volume settings to work, and that the ND5 XS 2 shouldn't be considered as a candidate for 'straight into a power amp' operation.

Although Naim has put a lot of work into improving the Wi-Fi capabilities of these latest units, I'd still suggest sticking to a wired network connection if at all possible, especially in 'busy' Wi-Fi environments.

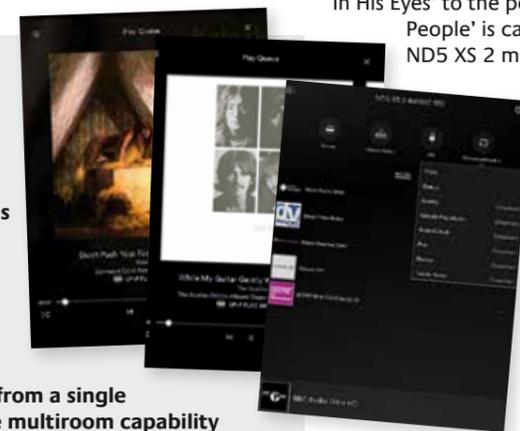
The ND5 XS 2 can handle PCM-based files at up to 384kHz/32-bit and DSD128 over a network or from USB media, while its streaming service support extends to Roon-ready status, and a whole range of other offerings thanks to its integration of Google Cast for Audio. Basically, if you find a compatible app on your computer, phone or tablet, the ND5 XS 2 can play audio from it, at resolutions up to 192kHz/24-bit.

The digital-to-analogue conversion here is handled by the familiar Texas/Burr-Brown PCM1791A DAC – the circuitboards are decoupled for immunity to vibration – and

*'The switch from plaintive to powerful was captivating'*

## NAIM APP

Naim has taken something of a leap of faith by removing all controls from the ND5 XS 2, and doing away with a conventional display and handset. Fortunately the Naim app, used to control the player via the home network, is an excellent example of its kind, having been refined over successive generations to increase the smoothness of its operation and add extra facilities. As well as the set-up functions mentioned in the review, the app plays a major part in the ND5 XS 2's flexibility, allowing extra services to be added via the player's onboard Google Audio implementation as well as allowing multiple Naim Uniti, Muso and ND-series products to be controlled from a single interface. What's more, the app is at the heart of the multiroom capability built into all Naim network audio products. With music playing, it's easy to add on extra 'zones' that'll play in perfect synchronisation – the app allowing independent zone volume, as well as global adjustment of the entire set-up.



**ABOVE:** Move along, nothing to see here! Naim has taken the simple route, with all control via the Naim app. Slot to left accepts USB media, button on right switches the unit into standby

while the ND5 XS 2 has both a big linear power supply and switch-mode PSU, the latter is used solely to support the player's standby mode [see inside shot, p60].

## FAMILY SOUND

One might justifiably expect there to be a clear differentiation in the sound of the three Naim players, and yes, there is a clear step up in performance when moving from the ND5 XS 2 to the NDX 2. However, that shouldn't detract from the abilities of this most affordable model that, by any standards, is a remarkable network music player that's deserving of consideration way beyond all-Naim systems.

Playing the recently released Kate Bush remasters, it's thrilling how dramatically the singer's first album, *The Kick Inside* [Rhino; 44.1kHz/24-bit] comes up shining in its latest version, the ND5 XS 2's punchy, well-extended and highly detailed sound serving very well her sheer teenage creativity. The way Bush's voice switches from the plaintive 'The Man With The Child In His Eyes' to the powerful 'Them Heavy People' is captivating, and the ND5 XS 2 makes the most of this

complex, and often lush, production.

Spool forward a few years to Bush's first self-produced album, *The Dreaming* [Rhino; 44.1kHz/24-bit], and the ND5 XS 2 tears into the opening 'Sat In Your Lap' with real drive and slam, maintaining the momentum all the way to the closing 'Get Out

Of My House'. The sound is recognisably weird, highly inventive and seriously dense, but the Naim player has it covered. ↪

## NETWORK-ATTACHED DAC



**ABOVE:** Two Toslink optical and coaxial digital ins (one on BNC) are joined by USB-Type A (for external HDD/pen drives), Bluetooth and wired/wireless Ethernet for network audio. Single-ended outputs are on RCAs and a 5-pin DIN

It continues to deliver a remarkable performance with the recent remastered release of *The Beatles* (aka *The White Album*) [Apple/Universal 0602567571957; 96kHz/24-bit], digging deep into the mixes to find previously unheard detail, and revelling in the extras on the set, including the legendary Esher Demo tapes, recorded in George Harrison's bungalow at the end of May '68. The immediacy and intimacy of these acoustic recordings of songs that would become the finished album, and the fun the band is having working them out – unlike the acrimony of the final sessions, which would tear the four apart – is presented in infectious style by this 'entry-level' Naim player.

### STEPPING OUT

Indeed, that concentration on the music, the ND5 XS 2 matching its anonymous looks with an ability to get out the way of what's being played, means this slimline unit is a very long way from being no more than just 'Naim lite'. So while the NDX 2 may find even more in recordings, especially when boosted with the addition of an XPS power supply or even a 555PS, let's not

forget that its junior sibling is less than half the price, and far from overshadowed by its 'big brother'.

As you can see, I was having a bit of a remasterfest with the ND5 XS 2, and its abilities also served well the recent *Eagles Legacy* boxset [Elektra/Rhino; mainly 96kHz/24-bit]. The way it played the original version of 'Hotel California' with its multiple layers of instrumentation, soaring guitar solo and little percussion stings, almost dispelled the visceral shudder I feel every time I hear that acoustic guitar opening in a hi-fi demonstration room.

May I suggest it's time to drop that one from the playlist, chaps? Frankly, it sounds good on almost anything – whereas the way the ND5 XS 2 delivers the original is truly special, thanks to its detail and effortless musical flow.

That combination of punch and weight, allied to speed and rhythmic acuity, is also deployed to good effect on King Crimson's *Live In Vienna* set [Discipline Global Mobile; 48kHz/24-bit], which sounds suitably big and magnificent, but with excellent resolution of the nuances of the music. But then that's what Naim's ND5 XS 2 does: turn on the magic, almost regardless of what you choose to play.



**ABOVE:** Comprehensive Naim app allows set-up flexibility: inputs can be modified or, if not required, turned off

### HI-FI NEWS VERDICT

The ND5 XS 2 gets dangerously near to its big brother, the NDX 2, and does so for less than half a price. Yes, it gives away a little in bass weight and conviction, and details and imaging aren't quite so sharply delineated, but this remains an infectiously enjoyable player. Add in the slick and usefully flexible Naim app, which makes using it a delight, and you have a remarkable digital audio player/DAC for the money.

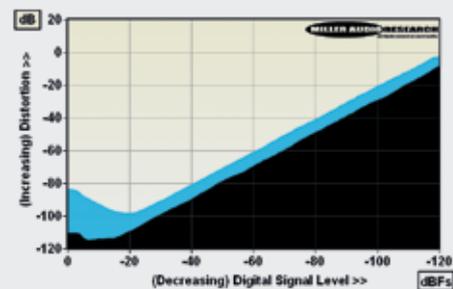
Sound Quality: 85%



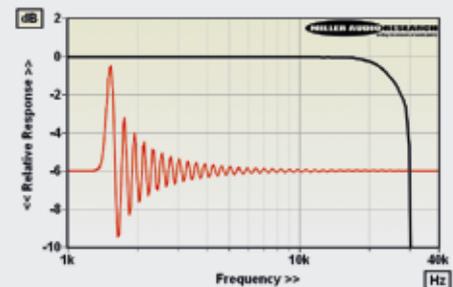
## NAIM AUDIO ND5 XS 2

While the ND5 XS 2's PCM1791A DAC-based analogue output is simpler in execution than Naim's PCM1792A-based NDX 2 [HFN Sep '18], its *digital* inputs are processed via the same upsampling/jitter-suppressing 40-bit code. It's so effective there's no significant difference in performance whether data is delivered via S/PDIF, USB-A or (wired) network connections. The fixed analogue output offers a maximum 2.22V from a low 23ohm source impedance (increasing to 190ohm at 20kHz) and incurs a mere 0.0002-0.0095% distortion (20Hz-20kHz, 0dBfs), falling to a minimum of 0.0002-0.00085% over the top 30dB of its dynamic range [see Graph 1, below]. The A-wtd S/N is a few dB behind the NDX 2 at 105.6dB and its low-level linearity is true to  $\pm 0.3$ dB over a 100dB dynamic range ( $\pm 0.6$ dB over 110dB).

The response and time domain behaviour of the ND5 XS 2 is entirely determined by Naim's custom brickwall IIR filter which is combined with a gentle 6th-order analogue filter at the output. This digital filter type suffers no pre-ringing, but does exhibit extended post-ringing [see Graph 2, below] and, therefore, no acausal distortion – just like a pure analogue filter. This filter acts earlier than is typical, and trades a reduced attenuation of stopband artefacts immediately adjacent to the top-end of 48kHz music media (just -43.1dB at 26kHz re. 22kHz) while restricting the response of both 96kHz and 192kHz digital audio to a -3dB point of 29kHz. Lower 44.1kHz/48kHz sample rates have an insignificant -0.3dB roll-off at 20kHz. Jitter suppression, meanwhile, is not only superior to that observed with the NDX 2 but defines the current state-of-the-art at <10psec with 48kHz/24-bit inputs and ~15psec at higher sample rates. PM



**ABOVE:** Distortion versus 48kHz/24-bit digital signal level over a 120dB dynamic range via S/PDIF/USB/network (1kHz, black; 20kHz, blue)



**ABOVE:** High resolution jitter spectrum via S/PDIF/USB/network (48kHz, black; 96kHz, red with markers)

### HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.21Vrms / 23-190ohm
A-wtd S/N ratio (S/PDIF / USB-A)	105.6dB / 105.5dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.00065% / 0.00028%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0095% / 0.0009%
Freq. resp. (20Hz-20kHz/30kHz)	+0.0 to -0.28dB/-8.1dB
Digital jitter (48kHz / 96kHz)	<10psec / 15psec
Resolution @ -110dB (S/PDIF / USB)	$\pm 0.6$ dB / $\pm 0.6$ dB
Power consumption	10W (1W standby)
Dimensions (WHD) / Weight	432x70x301mm / 6.6kg