

Mid-Price Naims

MARTIN COLLOMS TRIES OUT NAIM'S MID-PRICE ND5 XS STREAMER-DAC, PLUS THE XP5 XS POWER SUPPLY UPGRADE

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We might be accused of covering too many Naim products in these pages, but can point to so many potentially important models in its rapidly expanding portfolio that it would take us years to cover even the current line up. The company's marketplace coverage and importance also clearly justifies our close attention, and we've encountered very few duds over the years.

This review begins by examining the £2,060 *ND5 XS*, a slim but full-width standalone streamer-DAC which has been available for a year or two now. It continues by trying out the matching *XP5 XS* external power supply, which can upgrade the performance of the *ND5 XS* and even supply the *NDS* streamer-DAC unit.

After a year or two, production of the *ND5 XS* has settled down nicely. The design has a family connection to Naim's non-streaming DACs [the *DAC* (more commonly known as an *nDAC*) in *HIFICRITIC Vol4 No1*, and the *DAC-VI* in *Vol8 No1*], with which it shares some key parts and design principles while the *ND5 XS* itself may in fact be upgraded by adding a *DAC*, feeding the latter digital audio data from the *S/PDIF* output of the *ND5 XS*. This particular upgrade combination contrasts with the alternative of adding one of the several nominated power supply upgrades to the *ND5 XS* itself.

In contrast with Naim's reference level *NDS* streamer, which is entirely unpowered and therefore needs some or other external power supply, the *ND5 XS* is self-powered to a decent standard. And when adding a second higher grade power supply such as the *XP5 XS*, the necessary heavy duty multi-core Burndy connector cable is provided, fitting the rear panel socket where the Burndy connector plug/link normally resides.

This evaluation therefore effectively involves (at least) two products: the standalone *ND5 XS* mid-price streamer-DAC at £2,060 and the augmented *ND5 XS/XP5 XS* combination which totals a much more substantial £3,710, a combo that's somewhat reminiscent of its *5 XS* partner, the matching and very enjoyable *Nait 5XS* amplifier, with or without its own 'go faster' optional *FlatCap* power supply upgrade (*HIFICRITIC Vol3 No4*).

The *ND5 XS* may be described as Naim's 'entry level' component streamer, the company's network players

possessing powerful DSP engines for input jitter control and proprietary digital filtering, where much of the less costly competition use inexpensive off-the-shelf solutions in popular integrated circuit chips.

This *ND5 XS* shares much of the digital and streaming board, plus the custom programmed DSP technology and low jitter digital signal path of the self powered £3,300 *NDX* (*HIFICRITIC Vol6 No3*), the middle streamer in the Naim range (and sits below the unpowered top-of-the-line *NDS*).

Features

To serve a variety of needs, including lower resolution signals from internet radio stations for background music, for example, modern streamers need versatile music feeds. It would be easy to take a super critical view and hamstring this versatility by removing such options, in an attempt to maximise sound quality. There is no reason why those who wish to enjoy a variety of internet music stations should not do so, and the diversity, accessibly and zero cost of these additional facilities do add entertainment value.

However, enthusiasts can maximise sound quality by using a simple signal path, consisting of a hard-wired streamer, fed *via* a hub, and controlled using the appropriate free app (avoiding the Wi-Fi control link options and other wireless facilities such as DAB radio). The purchaser should decide what value these represent to the overall experience, as they are available as and when required, alongside rather modest losses in absolute audio performance. From the network attached storage (NAS) we used Cat 7 cables working with Naim's Stream app for the *iPad*, storing the music on *Unitiserve 2T* and *Qnap 409 4T* drives, with nary a hiccup.

Sound Quality

The unit was installed on a *Fraim* support and the separate power supply option was located on an adjacent stand. Our storehouse of well ripped CDs on the server got us under way, and a sprinkling of HD downloads subsequently put a gloss on proceedings.

After installation our already well run in demonstrator was given a further few weeks active service to settle down before the exhaustive solo

and comparative auditioning programme began. First impressions were promising, its neutral and evenhanded performance showing a close family resemblance to a standalone *nDAC*. It certainly delivered a neutral tonal balance with a wide frequency response, an open treble and a solid well founded and deeply extended bass. We found that the *ND5 XS* could go the extra mile with a degree of commitment to the musical message which stretched beyond expectation of price. As we sought to find its limit, the more we allocated to the putative system budget, the better the unit sounded.

As is often found with streamers, one of the best performances in terms of commitment, particularly for rhythm and timing, involved hair shirt replay from a good CD transport, *via* the S/PDIF input. Even so the streamer-connected alternative took an unusually close second place, to a point where for many CD rips it was hard to tell the two sources apart: this a great result for audio systems to be based more exclusively on streaming.

Many Naim digital replay devices (right back to the *CDS3* CD player) establish a high sound quality that is quite universal, rather than cast in a traditional Naim idiom. The *ND5 XS*'s innate neutrality and well balanced performance would more than pass muster in almost any appropriately priced audio arrangement. Stereo image focus was stable and precise, the soundstage was well defined with fine width and depth, and a noticeably pleasing degree of transparency, ample spaciousness and impressive fine detail resolution was observed.

Sound quality scoring placed the *ND5 XS* well up the pecking order, delivering a class leading 190 points on its optimum S/PDIF-fed input, and with a deeply impressive streaming score of 175 using my carefully optimised network feed. There is just a little more grip, slam and precision via S/PDIF, though it is necessary to take care to switch off all the input/output options not in use.

The icing on the cake is the USB input on the front panel, which is rarely found on the competition. This provided a sound quality increase of 10-15 per cent, and sounded still more upbeat and satisfying with improved grip and drive. Go 'hair shirt' and discard the UPnP control, disconnect the network cable, and think of this mode as an audiophile CD player, where the discs are inexpensive USB drives loaded with music (including and especially HD material). Amazingly this can add a further 6-8 per cent of sound quality. A set of favourite artist tracks may be pre-loaded onto individual USB drives, but always keep the original files accessible in case of USB stick failure. The remote control handset provides track selection within USB files. It's also possible to link to portable MP3 players and *iPods*, and extract digital data directly for the *ND5 XS* DAC to render.

An additional and valued dimension is uncovered when an *ND5 XS* is placed in a well tuned system that includes other Naim components, at least in part. Those sometime elusive qualities of musical connection – well focused rhythms, connected dynamic expression, and well-timed, percussive and tuneful bass are inherent in the DNA of this streamer, beyond expectation of price. It remained involving and satisfying over time, and I had no difficulty leaving it connected in my audio system for the duration of this review.

Conclusions

Naim is on a roll with its versatile collection of streamers. The *ND5 XS* works really well straight out of the box, and gains a Best Buy, a rating that was achieved after a few weeks running in from new. It is well rounded, ticking both the traditional hi-fi and the musical involvement boxes. It is also nicely complemented by the substantial *XP5 XS* power supply upgrade, although that does almost double the price



Review System

Audio Research *Reference 5SE*, Townshend *Allegri* control units; Vitus *SIA-025*, Naim *NAP300* and Krell *Duo300* power amplifiers; Naim *UnitiServe* network server and S/PDIF source; Naim *NDS/555PS* Streamer-DAC; Chord *Hugo* DAC; Wilson Audio *Sasha Series 2*, Magico *S-5* speakers; Naim *FRAIM* racks; Transparent *MM2* and Naim *NAC A5* speaker cables; Transparent *MM2* and van den Hul *Carbon TFU* interconnect cables.

Technology

A streamer at heart, this digital replay device operates at its best when served by well ripped CDs from a network connected music store – in particular a Naim *UnitiServe*, but also the usual PCs, NAS drives and other hard disk server alternatives.

Up to 24-bit/192kHz files may be streamed, but a DSD option is not currently available. Central to the *ND5 XS* is digital audio streaming. *ND5 XS* will stream all available music stored on UPnP-enabled devices connected to the home network, such as PCs, laptops, NAS drives and hard disk servers, but Naim would always advocate well ripped music as a starting point, and a Naim hard disk player/server offers this.

On the radio side there's the internet of course, while an inexpensive FM/DAB broadcast radio module can be fitted at modest extra cost. Digital inputs include S/PDIF optical and wired (the latter RCA/phono and BNC). The *ND5 XS* is fitted with a SHARC DSP using Naim's proprietary 16x oversampled digital filtering and buffering. The linear power supply has a 200VA toroidal transformer with four separate windings for digital, server connections, audio clock and analogue sections.

Seven-pole analogue output filtering keeps out any alias and high frequency products, and the data control lines have optical isolation. There are also triple-regulated, ultra low noise power supplies, and a ground selector switch for optimum performance with other equipment. The DAC is a pure multi-bit PCM device, using a high resolution Burr Brown 1791A; the casework is all aluminium with the sleeve a thick non resonant alloy extrusion. There was insufficient time for a full laboratory analysis, but spot checks for level, noise, resolution and distortion all showed a fine performance, in every case bettering the very good specification.

ND5 XS Technical Data

Analogue outputs	DIN and RCA/phono
Output impedance	32ohms max
Minimum load impedance	10kohm
Frequency response	10kHz – 220kHz, +0.1/-0.5dB
THD+Noise	<0.02%, 10Hz=20kHz (full level)
Phase response	Linear phase, phase correct
Formats supported	WAV, AIFF, FLAC*, ALAC**, Ogg Vorbis***, WM-9***, Playlists (M3U, PLS), MP3, M4a, iRadio, vTuner 5, internet radio
Size (WxHxD)	432x70x301mm
Weight	6.5kg

* (up to 24-bit/192kHz); ** (up to 24-bit/96kHz); *** (up to 320bit/s)

Super Supply

MARTIN COLLOMS ADDS NAIM'S XP5 XS AUXILIARY POWER SUPPLY TO AN ND5 XS AND AN NDS

Naim has this habit of complicating our assessments and comparisons because of their additional power supply options, upgrades that may be almost as sophisticated and costly as the regular audio units themselves. Naim takes the view that while the audio signal is controlled by the audio input information, digital or analogue, what appears at the output must also come from the power supply. Thus improvements from the latter are considered fundamental to sound quality.

While the 'pretty' aspects of sound quality, such as detail, focus and transparency may be down to low jitter, capable circuit design and specially selected audio components in the primary unit, further improvements in the 'involvement' stuff, such as dynamics, bass slam and rhythm, and in some cases transparency, may frequently be the responsibility of power supply quality. In this particular situation the additional power supply entirely replaces the original, which completely frees the unit containing the audio electronics from any internal transformer hum field and matching mechanical vibration.

When adding a second higher power supply, in this case the *XP5 XS*, the necessary heavy duty multi core Burndy connector cable is provided. Incidentally, a moment of mirth occurred on initially plugging in the *ND5 XS*'s second power supply: it remained entirely silent but with its display read: 'Two PSU, unplug and wait 10 minutes!' Initially foxed, we did as we were told, and also checked the manual which did of course explain that when the *XP5 XS* is connected it will totally power the *ND5 XS*, that no further power is required, and thus with the second mains power cable now unplugged, the internal mains transformer of this streamer falls beneficially silent. (The *NDS* connection involved no such complications as it does not have an internal supply at all, and had also already been configured.)

Connected up with my usual RCA/phono cables there was again no sound from the then new *ND5 XS*, until I also remembered that for Naim source components the default output is normally the 5-pin DIN socket rather than the RCA/phono option. It is easy enough to set up the *ND5 XS*'s output via the install mode on the remote handset, operations that are also clearly shown on the *ND5 XS* display.



XP5 XS

Whereas the unadorned *ND5 XS* costs £2060, the *ND5 XS/XP5 XS* combination nearly doubles that, totalling £3,710. This addition is therefore certainly going to have to go some to earn its keep. The *XP5 XS* is a slimline multi-output separate power supply that can power and/or upgrade several of Naim's digital products. As well as the *ND5 XS*, it may be used with the *NDX*, *HDX*, *CDX2*, *nDAC* and even the *NDS* (though the larger *XPS* power supply is usually suggested as a starting point for the latter). It features a large low noise 400VA toroidal transformer with multiple secondary windings, these supporting the degree of separation required between analogue and digital directed outputs. Designed isolation techniques help avoid unwanted vibration coupling to sensitive signal stages in the connected audio equipment, and costly ceramic couplers are used between the regulators and the heatsink metalwork for low installed capacitance and thus minimal electrical coupling.

The supply is well oversized for the application, the large custom made BHC reservoir capacitors just idling in normal use. Internal connections are hand-wired to the carefully laid out printed circuit board, and the fitted mains and power sockets are specifically chosen to minimise microphony, blocking vibration which may be conducted *via* the required cables. The aircraft grade multi-pole, locking Burndy connection carries the multi regulated supplies out of the unit. The extruded alloy enclosure is structurally rigid and naturally non-magnetic.

Existing Naim owners wishing to upgrade *nDAC*, *NDX* or *ND5 XS* might well consider that the *XP5 XS* is a more accessible alternative to the larger and more costly *XPS* power supply. *XP5 XS* measures 432x70x301mm (H x W x D) and weighs 8.4kg, and most of the latter is down to the transformer.

Sound Quality

Given similar running in to the *ND5 XS*, this accessory power supply gave a straight 20 per cent improvement in sound quality, and if this does not sound like a large advantage, we considered it well worthwhile, as such gains are hard to get in this elevated territory. It was in the bass where it had the greatest effect, giving a noticeable improvement in the senses of scale, foundation and low frequency definition, as if the sheer physical weight of the much larger power transformer in the upgraded power supply could be perceived in the resulting sound.

However, we also enjoyed additional and valued improvements in clarity, transparency, musical timing, image scale and micro detail. In streamer mode our sound quality score reached around 210 marks, which is right up the field. As a straight S/PDIF DAC against our benchmark references, this two-box Naim combo reached 230 or so marks, and achieved a smashing 250 *via* the USB input when all the others were turned off. Key qualities included its substantial neutrality.

When the *XP5 XS* was connected to my *NDS* streamer *via* a single Burndy cable, the combo clearly outclassed the *ND5XS/XP5XS* combo, as indeed it should, but I was surprised by just how good this well priced supply was when connected to the reference level streamer. One could easily begin at this point for an *NDS* (as I did while my own supply was being checked out), before eventually making a final push to a *555PS*.

Conclusions

Considered as a two-box streamer-DAC, the *ND5XS/XP5XS* stands in its own right as a top performer in its class, and therefore deserves enthusiastic recommendation. For Naim owners this is particularly good news, since an initial purchase of the self powered *ND5 XS* streamer can lead to a powerful upgrade with the subsequent addition of the excellent *XP5 XS* power supply.

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