AUDIO FILE

# Ayre QX-5 Twenty

With a raft of proprietary tech, including network music player capability, this is very much the modern digital-to-analogue converter. Is its performance just as complete?
Review: **Andrew Everard** Lab: **Paul Miller**

Things move fast in digital audio, and the pressure is on digital designers to keep pace not just with changes in technology, but also with the shifting listening patterns of consumers. What was once a CD-based landscape has grown to encompass higher-resolution music, and also seen what some would once have viewed as highly improbable, that's to say the revival of the fortunes of the DSD format – generally thought dead and buried when SACDs failed to take the world by storm. Then there's the whole move away from 'owned music' to online streaming services, which seem to be popping up almost every week.

### A LEAP INTO STREAMING

Boulder, Colorado-based Ayre Acoustics has watched all this happen and its QB-9 DAC [*HFN* Jan '15] has undergone a number of changes to accept new formats over the years, including DSD. Now the £7995 QX-5 Twenty – essentially developed from the QB-9 – has taken the leap into network streaming, to provide a complete digital music source.

The '5 series' range first appeared in 2013, being later upgraded to 'Twenty' status in 2015. The company describes it as 'the heart and soul of Ayre', encompassing as it does the KX-5 Twenty preamp and VX-5 Twenty power amplifier [*HFN* Nov '16], the AX-5 Twenty integrated amplifier and the DAC/network player reviewed here.

All include a raft of proprietary technologies from digital design to the analogue output stage – such as the company's fully-balanced 'zero-feedback' circuitry and custom power supplies – and are handbuilt at its Colorado HQ, with each unit being assembled from start to finish by a single technician.

The QX-5 Twenty's look is somewhat less retro than that of the QB-9 – which was,

**RIGHT:** An XMOS-based USB input [top left] sits adjacent to a Nexell Ethernet board. Separate linear PSUs feed the balanced analogue output stage [top right] and main digital PCB with its ESS Sabre 9038 Pro DAC [beneath]

after all, launched in 2009 – but while the DAC shares the styling of the other Twenty series models, there's still something a little rudimentary about the 'pocket-calculator' blue readout on the fascia, in an age when full-colour displays and touchscreens are becoming the norm. So if the operation of the unit loses out in the slickness stakes, exploring its options is arguably more painstaking than intuitive.

However, there's nothing old-fashioned about the QX-5 Twenty's capabilities here. It's based around the latest ESS Sabre DAC (the ESS9038 Pro) and can handle audio up to 384kHz/24-bit and DSD128 via USB, and up to 192kHz/24-bit and DSD64 over S/PDIF (coaxial and optical) and AES/EBU (XLR), as well as via network streaming.

It can also play content from USB drives connected via USB-A ports to the rear of the unit, one of which can alternatively be used to support a Wi-Fi dongle should it not be possible to use a wired Ethernet connection – although I'd never advocate wireless over a hard-wired hook-up wherever that's possible.

It's worth noting that, while the QX-5 Twenty will handle DSD files, it does so using the DoP (DSD over PCM) protocol, rather than as a native bitstream. This is hardly unusual in products of this kind, but reflects the company's trade-off between consumer demand and its relative lack of interest in DSD – as is made clear from its website comparisons between one-bit and PCM files, which are clearly designed to show it feels single-bit isn't here to save the audio world.

### SOLD ON ROON

Perhaps this is just symptomatic of a perceived need to have fascias plastered with logos for all the audio formats available. Perhaps also, digital audio equipment has to tick all the right boxes if it's to get the nod from some reviewers (present company excepted) and the requisite brochure/showroom appeal.

On which subject, as well as playing from network music storage, such as computers or NAS units running DLNA software, and of course directly from
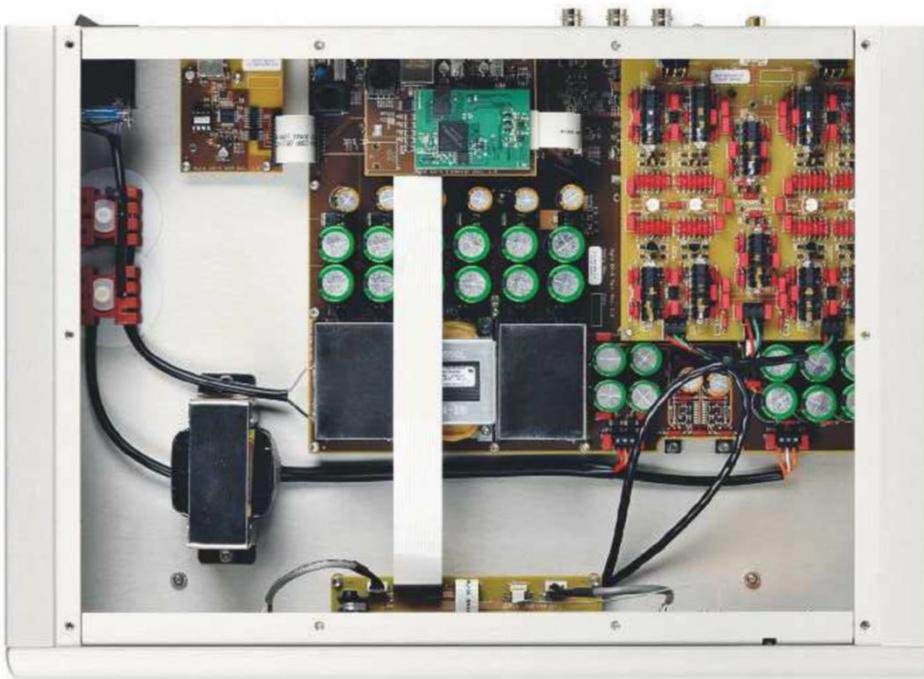
computers (or some NAS units) via USB, the QX-5 Twenty will also allow you to access Tidal and Qobuz subscription services. Or rather, the QX-5 Twenty will do so when used in conjunction with the mConnect app, which is available via the usual app stores, and comes in either an ad-supported free 'Lite' version, or a full version at £5.99.

That said, if you want to play Internet radio you'll need to find a workaround, such as playing it on a PC connected via USB, or using the Roon system to play Internet stations and music direct to the QX-5 Twenty, which has Roon Ready capability built-in and thus can act as an 'endpoint' to which a Roon controller can play music.

In fact, I have to say that quite a lot of my listening involved using the Ayre DAC controlled by Roon. It's not that there's anything wrong with the mConnect app, which works as well as any of the other UPnP controllers out there, but rather that I am very much sold on Roon, and the way it

> ## 'I was having something of a ball with the QX-5 Twenty...'

handles my music collection, Internet radio and streaming services all in one screen.

## GENEROUS FLEXIBILITY

As editor PM points out in his lab report [p47] and boxout [below], there's a choice of digital filter settings available for each of the QX-5 Twenty's inputs, namely 'Music', 'Measure' and 'Video'. The latter is handy if you want to use the DAC to convert the sound from a TV or other video sources, as the buffers Ayre uses to eliminate jitter could create lip-sync problems. These are bypassed in 'Video' mode, but as far as the other two settings are concerned I found 'Measure' to be brighter and initially more detailed, but slightly wearing after a while, so I stuck to the 'Music' mode for most of my listening.

Talking of 'modes', it's also worth noting that Ayre provides a choice of three for the operation of the unit. In 'DAC' mode it has a fixed output, for use into a conventional preamp or integrated amp, but is shipped in 'Digital Preamplifier' mode with a

**ABOVE: Ayre simplifies the controls to nothing more than two multifunction buttons and a four-way ring control; below the display are single-ended and balanced headphone sockets**

variable output to feed a power amp or active speakers. In 'Headphone Amplifier' mode it mutes the main outputs and sends the signal via a dedicated headphone amp to the sockets below the display, which run to 6.35mm and 3.5mm, and balanced 3.5mm left and right connections.

All very comprehensive and flexible, agreed, but I just wish the operation of the menu controls weren't so counter-intuitive, requiring various long and short presses of the buttons below and to the left and right of the display, and which light up in red and green respectively. Juggling these and the main control ring, I lost count of the times I got bogged down in the menus, and not sure what to press or do next to achieve what I wanted, despite using the unit for a good while.

### THE POMPEII WAY

Fortunately, there were no such doubts about the sound of the QX-5 Twenty, which combines pace, weight, detail and dynamics with a totally 'right-sounding' musical presentation. It's a totally unforced sound, almost deceptive in its lack of 'hi-fi-ness'. Yes, there's lots of finesse, from the snap and shudder of strings on an electric bass to the way the concert-hall acoustic is delineated in a live orchestral recording, but it's all done without any hint of artifice or revelation of the mechanics of the music-making.

Playing David Gilmour's *Live At Pompeii* set [Columbia 88985464952] – the Amphitheatre Pompeii is a great venue and I wonder why no-one's thought of using it before now – the QX-5 Twenty did a great job of combining the crisp, clean ↪

## CUSTOM FILTERS

While Ayre has opted for the latest Sabre DAC in ESS's catalogue – the ES9038 Pro – it has eschewed the myriad digital filter options that we've seen used in Oppo's UDP-205 [*HFN* Jul '17] and in Matrix Audio's X-Sabre Pro [*HFN* Nov '17]. Instead, Ayre offers just two digital filters called 'Music' and 'Measure', both of which are minimum phase types, the former with a slow roll-off [red traces, inset Graph], the latter a fast roll-off [black traces]. (A third filter, called 'Video', bypasses Ayre's data buffer to ensure accurate lip-sync'ing with pictures on the screen should the QX-5 be used in a home theatre setting.) Interestingly, these filters use bespoke coefficients that must be loaded into the QX-5's memory from standby, rather than selected on-the-fly by remote, and are distinct from the 'equivalent' slow/fast roll-off MP filters delivered with the ESS9038. In my opinion, the reduced in-band ripple of both filters and improved stopband rejection of the fast roll-off type make Ayre's the superior offering. Both Ayre's filters trade a lack of acausal distortion (pre-echo) on impulses at the expense of some post-echo, while the slow ('Music') type's more obvious treble roll-off and poorer stopband rejection suggest it's better suited to higher rate, 88.2kHz+, music files. **PM**
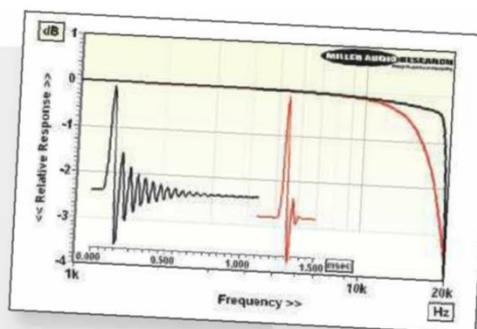
# USB/STREAMING DAC

ABOVE: Two AES/EBU, three coax and three optical S/PDIF digital ins are joined by USB-B (for PC/Mac) and two USB-A (for external drives and/or a Wi-Fi dongle) alongside a wired Ethernet port. Fixed and variable line outs are offered on RCA/XLRs

presentation of the performers with the sense of the presence of the audience, the characteristic guitar sound and voice delivered with both clarity and impact. It's a vibrant sound that's both unmistakably live and totally involving.

## GRIN-INDUCING

The Ayre DAC was similarly impressive with an equally live, but rather more intimate, favourite: Bill Nelson And The Gentleman Rocketeers' *Recorded Live At Metropolis Studios* [Salvo SALVO SVX001]. This has a real 'audience up close' feel throughout, allied to some superb versions of old Be Bop Deluxe favourites, and the exuberance of the event shines through via the QX-5 Twenty, thanks to its mixture of detail, speed and organic warmth.

I'm not sure how many times I played the sequence of 'Ships In The Night'/'Lovers Are Mortal'/'Maid In Heaven'/'Sister Seagull' during the time I spent with the Ayre DAC, but each time it came up both fresh and grin-inducing. It brought back memories of the Hammersmith Odeon some time in the late 1970s and eventually had me trawl out my copy of *Live! In The Air Age* [Harvest CDP 7 94732 2] just to enjoy the way Nelson's guitar licks bounced off the late Charlie Toumahai's thundering bass-lines and Simon Fox's drumming.

By now, you may have gathered I was having something of a ball with Ayre's QX-5 Twenty, but it was time to gather some composure and let it loose on some hi-res downloads and, in particular, the sparkling *Chrysalis* set of works for cello by Corinne

Morris and the Scottish Chamber Orchestra [Linn Records CKD 562; 192kHz/24-bit].
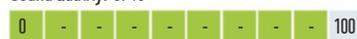
This the Ayre DAC delivered with a wonderfully lush view of the tone of the solo instrument and a rich weight to the orchestra, while still retaining the speed, definition and drive required for the various sprightlier tracks. What's more, it did so regardless of the file routing, with no substantive difference between the network-streamed versions, whether via the mConnect app or Roon, or from my Mac mini running Audirvana+ through the asynchronous USB-B input.

And Ayre's QX-5 Twenty DAC kept up this level of involvement regardless of what I threw at it, or how it was thrown, always putting the music first and the delivery mechanism a distant second. Never less than communicative, involving and entertaining, it proved a totally enjoyable means of accessing a very wide range of music. Now, if only I could get my head around that obstructive menu system... The latter only to be tackled with the comprehensive 50-page manual to hand, I think. ⏻

## HI-FI NEWS VERDICT

Combining wide-ranging digital compatibility with a generous range of inputs, Ayre's QX-5 Twenty convinces whether as a DAC, a Roon endpoint or an app-controlled network player, thanks to a well-judged balance of detail, dynamics and good old 'musicality'. That menu system will be a sticking-point for some, but once set up it can (almost) be ignored, leaving the user to enjoy the rich sound on offer.
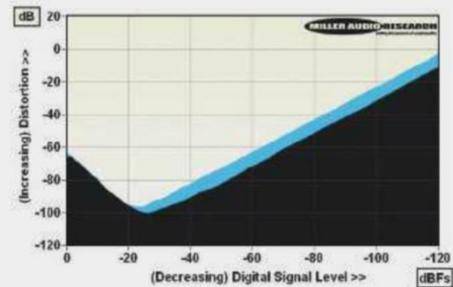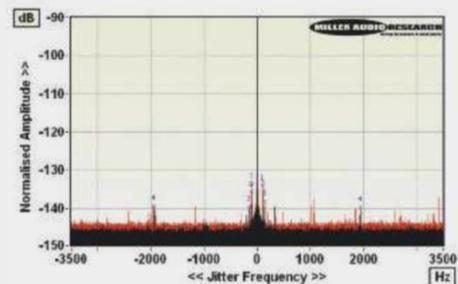
Sound Quality: 87%

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

ABOVE: High resolution jitter spectrum over S/PDIF & USB (48kHz/24-bit, black; 96kHz, red with markers)

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Maximum output level / Impedance** | 4.39Vrms / 149ohm (XLR out) |
| **A-wtd S/N ratio** (S/PDIF / USB) | 113.3dB / 113.5dB |
| **Distortion** (1kHz, 0dBFs/–30dBFs) | 0.049% / 0.00085% |
| **Distortion & Noise** (20kHz, 0dBFs/–30dBFs) | 0.060% / 0.0011% |
| **Freq. resp.** (20Hz-20kHz/40kHz/80kHz) | +0.0 to –0.4dB/–1.5dB/–3.9dB |
| **Digital jitter** (48kHz/96kHz / USB) | 10psec / 8psec / 15psec |
| **Resolution @ –100dB/–120dB** (S/PDIF) | ±0.1dB / ±0.7dB |
| **Power consumption** | 34W (1W standby) |
| **Dimensions** (WHD) / **Weight** | 440x100x330mm / 7.25kg |