

# When In Rome...

... run a Synthesis Roma 96DC+ amplifier.  
Noel Keywood checks out the logic.



**S**pecialised valve amplifiers like single-endeds commonly produce little power: think 9 Watts. One step up come a slew of 25 Watters using push-pull to give usefully more power – and that is what Synthesis offer here in their Roma 96DC+ valve amp, price £2649. But they bring a different take to things: this amplifier is digitally equipped and will play LP as well. It's a surprisingly comprehensive package; how they fitted it all in I will come to explain.

If your suspicions are already aroused I will confirm them: yes, there are transistors inside. Don't faint yet though, because they do a good job, especially when it comes to negotiating a USB stack so the amp can link into a modern thingy known as a computer. Best not to use valves for this purpose or you'll end up with something that might have been created by Bletchley Park. With USB socket on rear and AKM 4495SEQ DAC inside, the amp can accept and play DSD

from a computer – an interesting proposition. No external DAC needed.

But I'm getting ahead of myself here. Back to the bits that glow and get hot, the valves. On clear, open display – once a safety cover is removed – sit two pairs of EL34 power valves working in push-pull, one pair per channel. These are popular and inexpensive power pentodes, price £20 or so each. They are auto-biased, so no need to adjust bias, but this does reduce power slightly. It is possible to get up to 40 Watts from EL34s in push-pull with fixed bias, but this works them hard. The valves are run conservatively here, making for longer life (and smaller transformers). They should be good for 3000 hours run at such low power. EL34s have a good reputation, having what I would say was a delicate quality with plenty of fine detail. Much loved in the Far East.

Sitting in front of the EL34s are two ECC82 low noise double-triodes, but alone they are unable to do all that is done in this amplifier; a phono stage

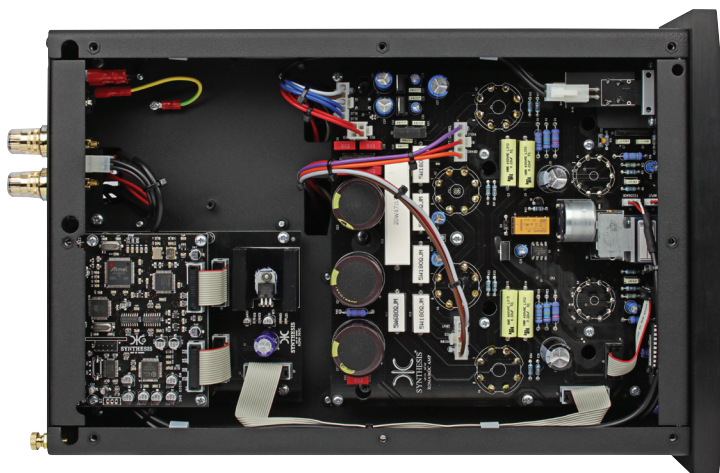
alone would need at least two per channel. The '82s act as preamplifier and phase splitter valves, feeding the power valves. All the digital work is done by transistors and a JRC4580 op amp in the phono stage handles analogue LP, catering for moving magnet (MM) cartridges.

As if all this was not enough, there's even a solidly hewn alloy remote control that can alter volume, select inputs or mute, but it cannot switch power on or off. Other things missing are a headphone output and balanced XLR input. Otherwise, Synthesis have missed out little from a compact chassis measuring 260mm wide, 415mm deep and 204mm high. The rear black box screens the mains and output transformers, as usual with valve amplifiers.

The front fascia panel is an unusually thick slab of machined alloy that certainly feels solid. At centre the large volume control moves in ghostly fashion under remote control, likely being an Alps Blue motorised potentiometer. Whilst the thick slab of a fascia looks good, especially in silver livery, it conceals the input legends viewed from above; better to use the remote.

The 96DC+ has two line inputs, a phono input, USB, and S/PDIF digital input via optical and electrical (phono) sockets. Optical worked up to 96kHz sample rate with our leads, including a QED Quartz glass optical cable. The electrical input worked up to





**At bottom left a densely populated digital board full of chips. At middle big power supply capacitors, then valve bases and at centre-right the motorised Alps volume control.**

192kHz and USB up to 384kHz sample rate. The latter accepts DSD via DoP, which means to play DSD from a computer a software player able to package it into DoP is needed; I use Audirvana+ on a Mac for this and the Roma played DSD64 and DSD128 happily. Otherwise, it's PCM and there's little the AKM DAC inside won't accept from a computer.

Synthesis fit a sturdy push-button power switch at left on the front panel, but this function is manual only: no standby mode, no HT-off function to lengthen valve life, no remote control of power.

The rear panel is inevitably a little cramped, there is so much on it. Those who know their valve amps will spot straight away there is just one pair of output sockets per channel, not the usual 4 Ohm and 8 Ohm options. Most loudspeakers nowadays are nominally 6 Ohms and Synthesis

match their transformers accurately to this load, measurement showed. But that meant power declined into either 4 Ohm (16W) or 8 Ohm (20W) loads. Since most 6 Ohm (nominal) loudspeakers hover around 4 Ohms at low frequencies that is

what the amplifier effectively sees much of the time – such as with heavy bass lines etc.

This amplifier is no power house but with sensitive loudspeakers it has enough to go loud, if not shatteringly loud. There is a fixed level Rec Out that could feed a larger power amplifier with volume control (e.g. Icon Audio) as a future upgrade but since the power amp cannot be disabled such an arrangement would be inefficient. The phono stage is very sensitive and will suit 'high output' moving coils designed to feed an MM stage.

In spite of being jammed in with valves, the digital section measured better than I dared hope. There can be strenuous hum and noise induction problems from valves but the earthing and screening works well here. S/PDIF inputs suffered some noise but USB was quiet.

### SOUND QUALITY

I connected the Roma 96DC+ to our Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference loudspeaker cables. Also tried were the Mission LX-4 MkIIs that potentially suit due to high sensitivity. For the most part I used a variety of CD and hi-res tracks playing from a MacBook Pro, working from battery for isolation and connected via USB. The software player was Audirvana+, to send DSD as well as PCM digital.

The Roma 96DC+ was immediately distinctive, its characteristics clearly audible. Cymbal crashes from Mick Fleetwood in

Dreams (24/96) fairly leapt from the 'speakers at stage right – it sounded like he'd just been to the gym. Vocals from Stevie Nicks were hard etched but very clear, jumping from the mix: the EL34s were doing a good job here I felt. This is what to expect from them. Down at the low end drums were large, full bodied and powerful, bringing weight to the sound beyond what anyone would expect from an amplifier of such small size and modest valve complement.

The presentation was larger-than-life, but lively at low and medium volume, if a bit fierce with mediocre digital at high volume. And this is what I heard over a wide variety of everyday CD, if not quality recordings.

With quality hi-res like Fasten Seat Belts (DSD128) from Wager Astrund I was pinned backward by triangles and metal percussion that rang out clear as a bell, with thunderous drums as accompaniment. Again, the performance seemed larger than life, dramatic



**An ECC82 EH double-triode preamplifier tube from Electro-Harmonix.**

and engaging – DSD quality treble not sounding fierce like (old?) PCM, where the music has been mangled in the recording process by poor ADCs.

Fed quality digital the little Roma 96DC+ was superb, but with some of the poorer stuff it got a bit edgy because of subtle treble emphasis (imposed by the output transformers measurement showed).

How about analogue? For this I connected up our Timestep Evo modified Technics SL-1210 Mk2 Direct Drive turntable, with SME309 arm and Audio Technica VM750 SH moving magnet (MM)

**An Electro-Harmonix EL34EH power output tube, one of four.**





The rear carries 6 Ohm loudspeaker output terminals, analogue and digital inputs. There's even a Phono input for LP (MM).

cartridge.

Spinning Sing, Sing, Sing from the Syd Lawrence Orchestra, on Big Band Spectacular, the rolling drum work was quite obviously weaker than I know it, lacking presence and depth. Oh dear!

Looking at the measurements made weeks earlier I was reminded why; low frequencies roll down and deep bass is heavily attenuated by a not-so-good warp filter.

With quite a bright edge to treble as well, the overall impression wasn't very analogue-like, making this phono stage sound like a peremptory add-on. With a bit of tweaking of the RIAA curve (318 $\mu$ S) to increase low frequency gain – a five second job – this could be remedied easily, making me suspect Synthesis haven't much bothered with the MM phono stage here. Especially since their Roma

79DC phono stage has emphasised bass for a heavy sound.

All the same, when I span warm balance LPs like Mark Knopfler's Kill To Get Crimson, tracks like True Love Will Never Fade remained deliciously clear, fluid and laden with a feeling of stage depth. Knopfler's guitar strings chimed out with melodious sweetness: I could not help but say "EL34" in my mind. As I worked through LPs though, the light balance didn't favour most. A track like Lovely 2 CU from Alison Goldfrapp's SuperNature lacked the low end strength it thrives on for a sense of presence. Goldfrapp's vocals were supremely clear but this alone wasn't enough to convince.



## CONCLUSION

There's not much around like the Roma 96DC+ amplifier. Compact in form, valves inside and a lively, clear sound make it a vivid listen. No hassle with bias adjustment, cheap to run and can play DSD direct from a computer, plus hi-res PCM and CD of course, it does it all. Only the MM phono stage was disappointing. For the price, all around ability and vivid sound though, this amplifier is definitely worth hearing. An impressive thermionic all-in-one.

## MEASURED PERFORMANCE

The Roma 96DC+ produced 25 Watts into 6 Ohms (1% thd) as claimed, but 21 Watts into 8 Ohms and 16 Watts into 4 Ohms, so claimed output is correct but will be less in real life where loudspeakers commonly dip to 4 Ohms.

The output transformer peaks slowly toward 16kHz (+0.7dB) before rolling away to -1dB at 62kHz, making this a very wide bandwidth amplifier as valves go. There was a small (+2dB) subsonic peak at 10Hz as well. So a bright-ish sound rather than a warm one.

Distortion measured 0.3% at 1W, 1kHz and 40Hz, rising to 1% at the power limit, a reasonable result for a compact valve amplifier with small output transformers.

The optical S/PDIF digital input worked to 96kHz sample rate only, but electrical to 192kHz and USB to 384kHz. Frequency response rolled down slowly with 192kHz sample rate digital (-1dB at 50kHz) a wideband result.

Distortion (24bit, -60dB) measured 0.05% and EIAJ Dynamic Range a respectable 112dB – very good figures.

The MM phono stage was sensitive, needing 2.3mV for full output. There was some overall emphasis to high frequencies, with treble +0.5dB up at 10kHz and bass -1dB down at 40Hz, due partly to a slow warp filter. Noise was acceptably low at -75dB.

The Roma 96DC+ packs a lot into a small case and it worked well enough under test, with no major weaknesses. NK

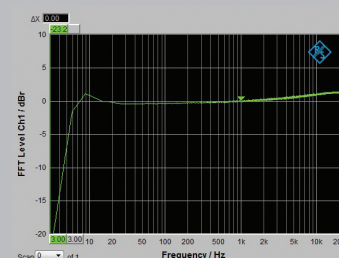
**Power** 25W  
**Frequency response (-1dB) 8Hz-62kHz**  
**Distortion (1kHz, 1W)** 0.3%  
**Separation (1kHz)** 88dB  
**Noise (IEC A)** -112dB  
**Sensitivity** 330mV

**DIGITAL**  
**Frequency response (-1dB) 8Hz-50kHz**  
**Distortion (-60dB, 24bit)** 0.05%  
**Dynamic range** 112dB

**PHONO (MM)**  
**Frequency response (-1dB) 40Hz-20kHz**  
**Distortion (1kHz, 5mV in)** 0.1%  
**Separation (1kHz)** 68dB

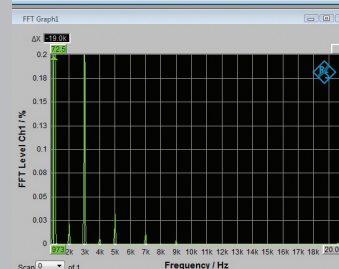
**Noise (IEC A)** -75dB  
**Sensitivity** 2.3mV  
**Overload** 28mV

## FREQUENCY RESPONSE



## DISTORTION

Level [dB]	Level [dB]	Frequency
0.3302 %	2.63331 V	1000.0 Hz
OFF	OFF	OFF



## SYNTHESIS ROMA 96DC+ £2649



**OUTSTANDING - one of the best.**

**VALUE - keenly priced**

## VERDICT

Vivid sound and broad range of ability, from digital to LP. Fine value.

## FOR

- vivid clear sound
- strong bass
- facilities

## AGAINST

- mediocre phono stage
- dull appearance
- low power

Henley Audio  
 +44 (0)1235 511166  
 www.henleyaudio.co.uk