

# HiFi Rose RS520

Combining the network streaming capability of the RS150 flagship with the GAN-FET Class D amplification of the RS180, the RS520 aims to be the 'all-in-one' for everyone  
 Review: **Andrew Everard** Lab: **Paul Miller**

Another smart move from the Korean tech specialist? That certainly seems to be the case with the latest arrival from Seoul-based HiFi Rose, which has rapidly established itself as a major player in the network audio/video market with a string of excellent streaming players. Having taken what looked like an abrupt turn with the launch of its bonkers-styled – but great-sounding – RA180 integrated amplifier [HFN Jul '22], it's now delivering on the promises made by the company's Sean Kim, interviewed for that review. We're yet to see the simpler, more affordable RA280 integrated amp, but here's the company's all-in-one streaming amp, the RS520.

Available in black and silver, and with the company's usual heavyweight all-aluminium construction, the £3399 RS520 may comfortably undercut the £5499 RA180, but it uses similar Class D-based amplification – or 'Class AD' as HiFi Rose describes it – and has all the network audio functionality of the streaming players with which the company made its debut. It is underpinned by the in-house, Android-based Rose OS platform and is controlled using the intuitive Rose Connect app for Android and iOS, as well as via the wide 12.6in/32cm touchscreen dominating the unit's front panel. And, as we'll see, that big, bright panel has gained some new tricks in this latest model.

## TECHNOLOGY TWIST

That's not to say the RS520 is simply a mix of the RA180 amp and the RS150 network player [HFN Jun '21], as the newcomer has its own twist on the technologies built-in. Not least here is a switch from the AKM-based DAC stage found in the RS150 to the latest ES9038PRO 'Sabre' DAC from ESS.

So, what actually is the RS520? For a start, this isn't its first integrated player/amplifier. In fact, there's a complete

'soundbar' style all-in-one in its catalogue, the RS350 'Lifestyle Media Player' – with speakers as well as amplification built-in – although this hasn't made it to the offering from UK distributor Henley Audio. And if the RS350 challenges the likes of Naim's Mu-so, so the RS520 is part of the growing trend for 'just add speakers' network receivers that includes Cambridge Audio's Evo 150 [HFN Nov '21] and the Naim Uniti [HFN Nov '17 & Aug '21] among others.

## POWER UP

All these do-it-all devices have plenty in common, including a streaming interface, connectivity for external audio sources, and decent power amplification of sufficient output and quality to drive surprisingly ambitious speaker choices. HiFi Rose's RS520 is no exception, with its claimed 250W/8ohm output [see PM's Lab Report, p53] making it – by a very considerable

margin – the most powerful of these new-generation 'all-in-one' units.

The newcomer is also generously equipped when it comes to its streaming capability. Via its network connection – Ethernet or Wi-Fi via a dongle, though I'd stick to the former for stability if possible – it can play music from a local library at up to 768kHz/32-bit PCM and DSD 5.1/22.4MHz. It also offers MQA decoding and access to streaming services including Qobuz, Spotify Connect and Tidal, along with Internet radio and a number of Rose services currently aimed mainly at the Korean market. There's also Bluetooth and AirPlay, and the unit is Roon-ready, too.

Then there's the RS520's comprehensive video compatibility, allowing content to be streamed and played either on that big front panel screen or to a TV connected to the unit's HDMI output, which is capable of sending 4K resolution (3840x2160 pixel)



LEFT: The RS520's 12.6in-wide touchscreen TFT display provides fingertip control over everything from input selection to menu setup, supplementing the Rose app and IR handset [p53]

signals. There's also an HDMI input with eARC capability, to accept sound and share control with suitable TVs, which means most modern sets.

On the subject of inputs [see pic p53], the RS520 also has one set of analogue line ins, along with optical and coaxial digital inputs and outputs. There are also three USB 3.0 Type A inputs, to which external storage of up to 10TB apiece can be connected, plus a USB-B port for a direct connection from a computer. An additional local playback option is provided by inserting an internal 7mm-thick SATA SSD of up to 4TB, a quick and easy DIY process via a removable cover in the RS520's baseplate.

HiFi Rose says its streaming amp has been tested with Samsung SSDs, and that others (specifically those made by Intel) may not work – this is no great hardship as, at the time of writing, a 4TB Samsung drive retails for about £260, and a 2TB one around £160. With an internal drive fitted,

or a USB one attached, it's possible to connect a USB CD drive and use that to rip discs to the storage.

## CONTROL AND DETAIL

As is usual with HiFi Rose products, the RS520 offers a staggering range of settings within its menus, including PCM resampling and digital filter options and, via that front-panel display, a virtual graphic equaliser function [see boxout, below]. However, I was keen to get on with some listening, which I kicked off with a DSD rip of Buggles' *The Age Of Plastic* [Island UIGY-9533], an album very much of its time – 42 years old – but still demonstrating the exemplary production standards that originally set it apart. Driving my Neat Iota Xplorer loudspeakers [HFN Jul '18], the RS520 delivered surefooted control and detail, but above all was massively enjoyable, with deep, tight bass and excellent insight into all the layers of the mix.

Keeping the fun sound going, the soundtrack of *The Get Up!*, the Madness lockdown special [Union Square/BMG B0BG6F5L65], shows the amp's ability to convey the band's organised chaos. The sheer vitality of the music, and its interjections, is all part and parcel of the live Madness experience, especially in this string of big hits recorded at the London Palladium in 2021. More than 45 years after forming, Suggs and Co. are still clearly having a blast, notably in an 'audition' of Paul Weller on 'The Harder They Come', so the power and clarity of the RS520 provides a constant temptation to wind up the level and enjoy it even more.

Still retro, but a bang-up-to-date recording, Bruce Springsteen's cover of 'What Becomes Of The Brokenhearted', from *Only The Strong Survive* [Columbia 19658756572], sees the RS520 delivering the singer's hoarse, careworn growl with real character against the big, lush arrangements. His take on 'The Sun Ain't Gonna Shine Anymore', with co-producer Ron Aniello playing almost everything except the orchestral parts, is clearly a labour of love. Yes, The Boss meeting the Motown/Philly sound is an incongruous mix, but boy is it a great listen!

The RS520's combination of extended bass and tight control was employed to good effect with the recent remastering of Queen's 1989 album *The Miracle* [EMI ↗]

*'It still reveals so much while driving so hard'*

## GRAPHIC GRAPHICS

Serious though it is about the audio engineering of its products, one could never accuse HiFi Rose of being straitlaced – its design team clearly enjoys having fun. There are always features in its range guaranteed to raise a smile, from a choice of clock displays to 'power meters' able to emulate those of a well-known US high-end company. New for the RS520 is a comprehensive graphic equaliser function [inset pic], complete with virtual 'knobs' and 'sliders' operated by touching the screen. These allow a ±10dB adjustment centred around five user-defined frequencies, each with a variable Q factor (sharpness). Oh, and if all that baffles you, but you still want to have a 'play', then a large virtual rotary control offers a choice of nine genre-specific music algorithms, from heavy metal to classical and jazz, and three more custom presets for you to configure and store. As in so many aspects of this unit, there are hours of harmless fun to be had fiddling and adjusting – but yes, there is another (virtual) switch to turn all this tinkering off!

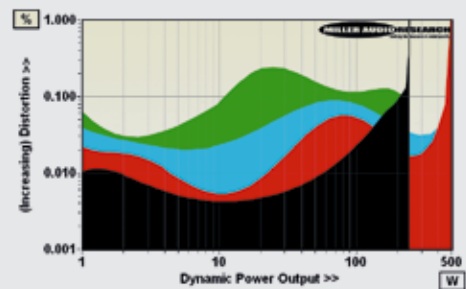


RIGHT: Screened switchmode PSU [left] feeds Cortex hexa-core CPU [lower left], ES9038PRO DAC and preamp stage [top centre] and GAN-transistor Class D power amp/filter block [right]

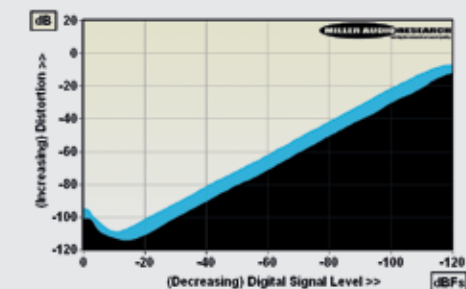
## HIFI ROSE RS520

While the RS520's (analogue) performance is dominated by the GAN-FET Class D output, it's clear HiFi Rose has 'tweaked' the ultrasonic behaviour of its 250W module since we tested the RS180 [HFN Jul '22]. There's still a modification in HF response with speaker loading but there's also more filtering here, so the RS520 is flat to within  $\pm 0.1$ dB up to 20kHz but rolls away to  $-22$ dB/100kHz/8ohm ( $-0.4$ dB/20kHz and  $-25$ dB/100kHz into 4ohm). The filtering is also reflected in the higher o/p impedance (0.38ohm/20kHz in the RS180 to 0.46ohm here) and the wider A-wtd S/N ratio (67.5dB to 74.5dB re. 0dBW here). Distortion is low enough at 0.004-0.06% through midrange and treble at 10W/8ohm but is higher at low frequencies (0.4%/20Hz). Power output remains on track at 2x250W/8ohm and 2x450W/4ohm, lifting under dynamic conditions to 500W/4ohm, 428W/2ohm and 235W/1ohm – rather higher into the lowest impedances than achieved by the RS180 [8.6A to 10.0A here, see Graph 1].

The RS520's ES9038PRO-based DAC/pre stage is very 'clean', offering a wide 109dB A-wtd S/N ratio from a maximum 2V o/p and 333ohm source impedance. There's some slight phase noise revealed by the jitter tests but correlated sidebands are suppressed to a very low  $< 15$ psec (all sample rates). Resolution is good to within  $\pm 0.2$ dB over a full 100dB dynamic range and distortion falls from 0.002-0.0017% at 0dBfs (20kHz-20kHz) to a minimum of 0.0004% over the top 30dB of its dynamic range [Graph 2]. The various 'Fast' filters offer the flattest responses – within  $\pm 0.3$ dB to 20kHz, 45kHz and 90kHz with 48kHz, 96kHz and 192kHz files, respectively – with the 'Slow' filters falling to  $-3.5$ kHz/20kHz (linear) and  $-5$ dB/20kHz (minimum phase). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 10.0A



ABOVE: Distortion versus 24-bit digital signal level over a 120dB range (1kHz, black; 20kHz, blue)

## HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	250W / 450W
Dynamic power (<1% THD, 8/4/2/1ohm)	248W / 500W / 428W / 235W
Output imp. (20Hz–20kHz, Pre/Amp)	333ohm / 0.066-0.46ohm
Freq. resp. (20Hz–20kHz/100kHz)	$-0.2$ to $+0.1$ dB / $-22.1$ dB (Amp)
Digital jitter (S/PDIF / USB)	$\sim 10$ psec / $\sim 10$ psec
A-wtd S/N ratio (DAC/Amp)	109.1dB (0dBfs) / 74.5dB (0dBW)
Distortion (DAC, 0dBfs/Amp, 10W)	0.0017-0.0045% / 0.0035-0.35%
Power consumption (Idle/Rated o/p)	42W / 625W (1W standby)
Dimensions (WHD) / Weight	346x127x328mm / 8.2kg



ABOVE: Line in/pre out (RCAs) are joined by optical and coaxial digital in/outs, HDMI in/outs (with eARC), an Ethernet port, three USB-A ports for external media and one USB-B for computer connection. Loudspeaker cable is connected via 4mm terminals

download; 96kHz/24-bit]. Here the bass and drums of John Deacon and Roger Taylor power the funk of 'The Invisible Man' and the headlong rush of 'Breakthrough', with both Freddie Mercury's vocals and Brian May's guitars sounding as charismatic as ever. It's a punchy, rich production, further illuminated by the demos, out-takes and alternative versions on the Collectors' Edition, where the RS520 is in its element, revealing so much while driving so hard.

### TAKE IT FOR A DRIVE

I also tried the analogue and digital inputs of the RS520 using an iFi Audio ZEN Stream as a source, but could hear no real advantage over HiFi Rose's own network platform. However, those inputs would be more than good enough should you want to use an external CD player, for example, but then there's always the USB drive alternative. Henley Audio will sell you the HiFi Rose RSA780 USB-attached CD drive (£349), but with limited listening I have to say my inexpensive Samsung drive, which has served me well on my computer for the odd rip or burn, was sounding pretty good connected to the streaming amp.

It's easy to get blinded by all the features on this ultra-flexible streaming amplifier, but really it's at its best when you just kick back and let it do its stuff, as one might hope given its appeal to the



LEFT: Although the RS520 can be accessed via the Rose app, this handset also offers comprehensive control provided you can view your operations on the large colour display

'just add speakers' buyer. Playing Tianxu An's reading of Tchaikovsky's 'Scherzo-Fantaisie in E-flat Major' [Alpha ALPHA855; 96kHz/24-bit], the RS520 displays a pleasing lightness of touch, making every note sound convincing, while also having all the dynamic power to bring out the scale and presence of the instrument. And it brings that same balance of qualities to the Dave Brubeck Trio's charging version of 'Take The 'A' Train' on the remastered *Live From Vienna 1967* [Brubeck Editions BELP20220301], with Joe Morello's drums sounding especially tight and gutsy.

### FULLSCALE FUN

This hugely enjoyable component seals its all-rounder status with the way it can handle large-scale orchestral music, both in the detail and ambience it elicits from concert-hall recordings and its rendering of power and weight. With the orchestra getting a full workout on 'The Perfect Stranger' [Boulez Conducts Zappa; Rykodisc RCD 10542], from tuned percussion to harp and the big drums, the RS520 delivers an enveloping and wonderfully dramatic presentation that can still surprise even on repeated listening. ☺

### HI-FI NEWS VERDICT

Having delivered fine-sounding network players and an amplifier, HiFi Rose brings it all together in this highly accomplished all-in-one unit. There's plenty to play with, or you can just connect your favourite speakers and get on with enjoying the music. Highly flexible, and packed with features you'll use – plus some you probably won't – this a superb contender in what is a fast-growing sector of the market.

Sound Quality: 86%

