



POWER AMPLIFIER

Stereo power amplifier. Rated at 325W/8ohm
 Made by: Jeff Rowland Design Group, Colorado Springs, USA
 Supplied by: Signature Audio Systems, UK
 Telephone: 07738 007776
 Web: www.jeffrowlandgroup.com; www.signaturesystems.co.uk
 Price: £13,500

AUDIO FILE

Jeff Rowland Model 625 S2

Now including trickled-down design features seen in its eye-wateringly expensive flagships, Jeff Rowland's 625 power amplifier has undergone a Series 2 makeover
 Review: **John Bamford** Lab: **Paul Miller**

Veteran designer Jeff Rowland, who worked at Ampex as a young man before founding his own high-end audio electronics brand, has never been frightened of challenging conventional wisdom in amplifier design and the 625 power amplifier – now in Series 2 guise – is his latest example.

This powerhouse Class A/B design is rated at a substantial 325W/8ohm, its ample muscularity combined with Bentley-style opulence and a surprisingly compact footprint. The dense construction of the 625 S2 is partly explained by JR's use of a switched-mode power supply (SMPS), something which might raise eyebrows with many audiophiles, especially when featured in a high-end two-channel power amp priced at £13,500.

BUILT TO LAST

Indeed, he first embraced switched-mode supplies back in the late-'90s [see boxout, facing page] and has always maintained it's never a case of *what* technology is used, but *how* you use it.

His company's distinctive amplifiers, which have been coveted by audiophiles the world over for more than three decades, are built with the intention of lasting a lifetime, and new models tend to come along only once in a blue moon – this 'Series 2' replacement for the longstanding 625 model being no exception.

As with all amplifiers from the Colorado-based boutique brand, the chassis is a work of art, sporting Jeff Rowland's optically wavy front panel which is precision-machined using a diamond-tipped cutter.

New owners are warned to be careful how they clean the fascia for the first few months, the instruction manual pointing out that its automotive-grade polyurethane coating, which gives it a uniquely glossy finish, takes six months to fully cure. The chassis' main body is hewn from a block

of aircraft-grade 6061-T6 aluminium claimed to provide 'exceptional thermal heat transfer and dissipation, RFI/EMI shielding, and resonance control' – there are no bolted-on heatsinks here – and this accounts for much of the 625 S2's 25kg mass since there's no hefty toroidal transformer inside.

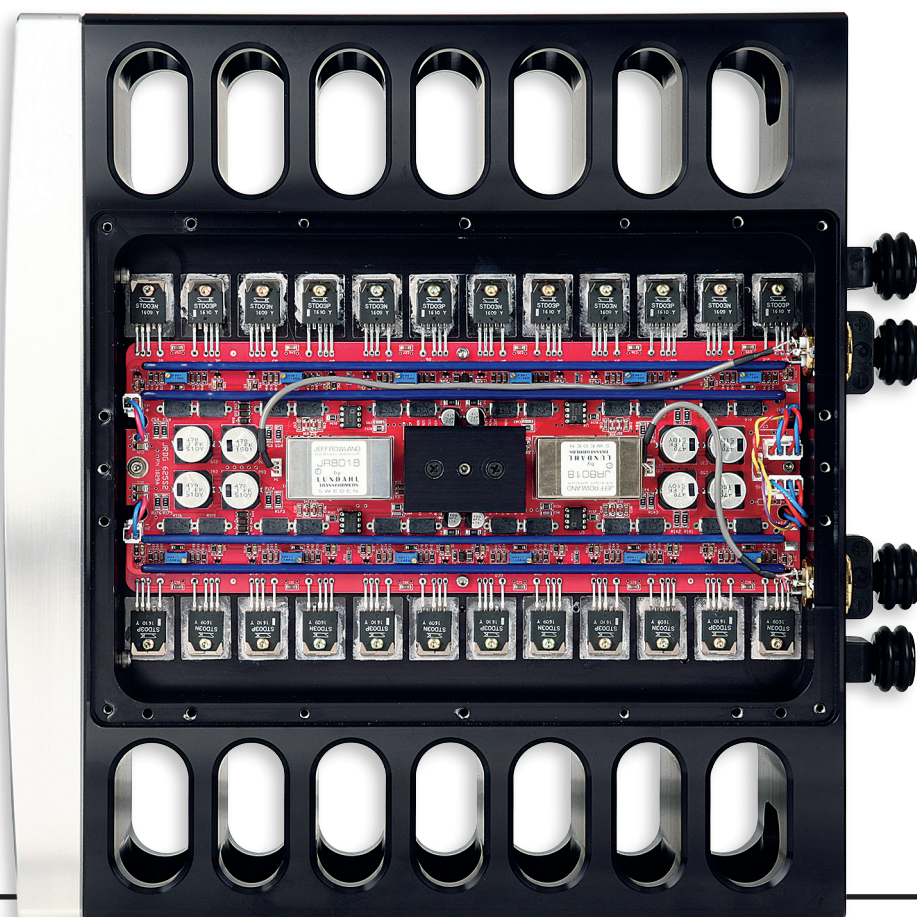
The amplifier sits on removable balls and studs made of Delrin which are screwed directly into the underside of the chassis and designed to offer effective isolation of high frequency mechanical noise.

Lifting the top plate reveals immaculate build quality throughout, with surface mount components minimising signal paths and compact construction overall which, together with the solidity of the one-piece chassis, aims to provide good

thermal stability. The topology is fully differential (balanced), with a transformer-coupled input. The circuit features highly regulated supplies, with substantial copper bus bars, and is based on separate voltage and current gain blocks.

IMPROVED PCB SPECIFICATION

Using the existing circuit topology of the outgoing 625 and employing 12 Darlington transistors for each channel as before, the S2 now features the Rogers ceramic circuit board material [see www.rogerscorp.com] as used in the company's £25,000 725 monoblock amplifier. Claimed benefits of this PCB are increased substrate rigidity, improved thermal conductivity and reduced dielectric energy storage. Also trickled down from the bigger



RIGHT: No fewer than 12 pairs of Sanken power transistors are bolted onto a machined alloy chassis and heatsink. The switchmode PSU is held within a screened cavity beneath

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725 is the inclusion of Jensen 4-pole filter capacitors in the power supply to reduce line noise, while the supply's output voltage has been increased slightly to yield a 25W boost in total amplifier power output [see Lab Report, p55].

The Jeff Rowland Design Group has also added what it describes as 'an innovative error correction technique previously unknown or implemented in the art of amplifier design', in order to improve the amplifier's distortion specifications at high frequencies.

Further upgrades for the 625 Series 2 include new custom-designed input transformers, with a linear phase 2-pole low-pass filter to improve input signal buffering, EMI immunity, and attenuate out-of-band signals from any source – including the spurious noise inherent in native DSD recordings.

The transformers are made for Jeff Rowland by transformer specialist Lundahl of Sweden, employing an increased turns

ratio, and wound with Cardas high purity copper wire.

A push-button on the fascia incorporating a white illuminated circular ring takes the power amp in and out of standby, while a 3.5mm mini-jack connector at the rear provides remote

power on/standby switching in automated installations. When looking at the back panel, the inclusion of Cardas gold-plated XLR input connectors featuring rhodium contacts and Teflon

insulation distinguishes this new Series 2 version from the original 625.

LOW-END CLOUT

Deciding that the most transparent control amplifier I could use with the 625 S2 would be no preamplifier whatsoever, I switched my resident T+A DAC 8 [HFN Oct '12] into variable output mode so that I could use its built-in volume control, connecting the DAC's XLR outputs directly to the power

'Bass authority, and its sweet and open highs were just sublime'

ABOVE: Set off by the elegance of Jeff Rowland's hallmark polished and 'prismatic' fascia, the amplifier's chassis and heatsinking is a solid structure, milled from aluminium

amp via Signal Projects' lavish Hydra balanced cables [HFN May '13], a pair of which costs almost as much as the DAC!

Even pretty much straight from cold, the 625 S2 having only been ticking over for ten minutes or so, it sounded extremely refined and polished. Instruments and voices appeared from an eerily silent background, appearing sharply etched and clean, along with a natural and uncontrived warmth to the tonal balance that was immediately enticing and conducive to prolonged listening. Coupled with this endearing smoothness was the amplifier's tremendous low-end clout.

Winding up the gain to play Mahler's 'Resurrection' Symphony [EMI CDS 7 47962 8] put all of the City of Birmingham Symphony Orchestra's musicians in the room, an immersive listening experience with convincingly blasting brass and the timpani thundering out to vibrate my listening seat. Just as importantly, the system appeared totally relaxed and stress-free while swinging the thrilling dynamics in the *Allegro maestoso*.

This appeared a particular strength of the 625 S2: no matter what mayhem is occurring during 'busy' recordings, instruments always appear uncommonly easy to decipher. A pertinent example was the title track from John Grant's 2013 album *Pale Green Ghosts* [Bella Union BELLACD377X] which features what can best be described as a 'challenging' synthesised bass content that threatens to overwhelm and muddy the richly-textured sound production. Not only could individual elements of the music's

ROWLAND'S RECIPE

Although company founder and chief designer Jeff Rowland's first amplifiers were low-powered Class A designs, he soon moved on to designing more powerful Class A/B power amps, while striving to maintain the 'sonic beauty' of low-powered Class A amplifiers. And in the late 1990s the Jeff Rowland Design Group moved away from using traditional linear PSUs in its amps, employing more compact and efficient switching-mode types with 'active' Power Factor Correction (PFC). This technique for synchronising the voltage and current cycles on incoming AC mains was first introduced in 1999 in its Model 10 and Model 12 power amps and aims to increase power efficiency while suppressing hash and ripples downstream of the PSU. Rowland's use of switching PSUs and multiple power transistors in its amplifiers' output stages contrasts with other manufacturer's high-powered amps that use a linear PSU and single pairs of output devices. In practice, there's no singular approach to amplifier design!

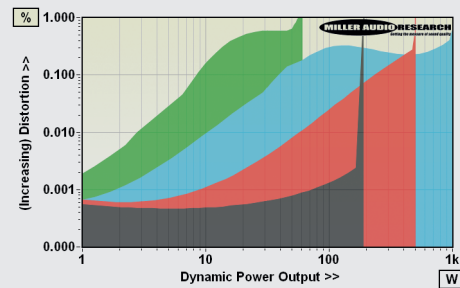


LAB REPORT

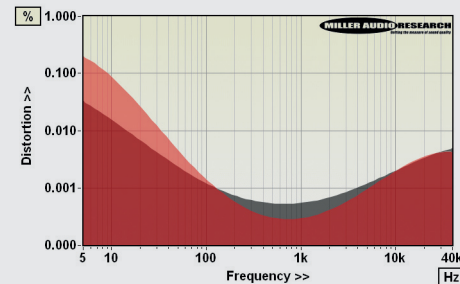
JEFF ROWLAND MODEL 625 S2

Now updated to 'Series 2' status, Jeff Rowland's Model 625 power amplifier has also seen its paper specification 'tweaked' from 300W to 325W/8ohm and 550W to 600W/4ohm while the overall gain is reduced from 27dB to 26dB. The latter was ratified on the test bench although the measured output power of 2x329W/8ohm and 2x590W/4ohm was sailing rather too close to the wind, popping the 6.3A in-line fuses if the 4ohm output was attempted for more than a few seconds. Under dynamic conditions, which bear a closer correlation to 'real life' anyway, the 625 S2 offered up a secure 333W, 632W and a full 1060W into 8, 4 and 2ohm loads, the output into 1ohm limited to 155W at 1% THD [see Graph 1, below]. Distortion is very low through midrange frequencies into 8ohm at just 0.0003-0.0007% from 1W-300W but increases more obviously into lower impedances, as also evidenced by the dynamic power profiles [red, blue and green traces, Graph 1].

Unusually, distortion also increases more obviously at low bass rather than high treble frequencies – 0.025%/20Hz (and 0.2%/5Hz) with just 0.0036%/20kHz, all at 10W/8ohm [see Graph 2, below]. The 625 S2's sub-bass response is very extended (-0.01dB/20Hz and -0.3dB/1Hz), as is the extreme top-end (-0.05dB/20kHz and -2.3dB/100kHz), again all at 10W/8ohm. Mercifully, PSU switching noise is absent from the background which is smooth and 'white' in character, amounting to an A-wtd S/N ratio of 88dB (re. 0dBW) and 113dB (re. 325W). Readers may view a full QC Suite test report for the Jeff Rowland Model 625 S2 power amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Maximum current is 23A



ABOVE: Distortion versus extended frequency from 5Hz-40kHz (1W, black trace; 10W, red trace)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	329W / 590W
Dynamic power (<1% THD, 8/4/2/1ohm)	333W / 632W / 1060W / 155W
Output impedance (20Hz-20kHz)	0.019-0.051ohm
Frequency response (20Hz-100kHz)	-0.01dB to -2.27dB
Input sensitivity (re. 0dBW/325W)	139mV / 2520mV (balanced)
A-wtd S/N ratio (re. 0dBW/325W)	88.3dB / 113.4dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.0004-0.0158%
Power consumption (Idle/Rated o/p)	85W / 1200W (1W standby)
Dimensions (WHD) / Weight	394x146x413mm / 24.5kg



ABOVE: Balanced (transformer-coupled) inputs only, via XLRs, are joined by a pair of substantial screw-down cable connectors per channel. These are best suited to bare wire rather than 4mm or spade terminated loudspeaker cables

patchwork quilt be comfortably observed – fine details such as the varying echo and ambience effects added to Grant's voice making the song consistently entertaining – but also the Heaven 17-esque musical fanfares suddenly blasting through when least expected.

Indeed, the building tension of this adrenaline-fuelled piece was exquisitely portrayed thanks to the amplifier's apparently calm and tranquil demeanour. Not even the demanding subterranean bass notes some two-and-a-half minutes into the song seemed problematic for my system with the 625 S2 providing the horsepower, the amplifier keeping a tight grip on the drivers in my Townshend Sir Galahad monitors.

Yes, the bass was as thunderous as it always is when playing 'Pale Green Ghosts' at an unsociable sound pressure level (the only way to hear it, frankly) yet it always remained creditably comfortable.

PEPPERED WITH DETAILS

I underwent a transcendental listening experience enjoying a performance of 'Insurgentes' by Porcupine Tree frontman (and prog-rock high-resolution remastering/remixing guru) Steven Wilson recorded and filmed live in Frankfurt a couple of years ago [Kscope 265, DVD+CD; also on Blu-ray Disc].

Again, the amplifier's graceful delivery allowed comfortable observation of the subtle inflections in Nick Beggs' playing of his Chapman Stick alongside the accompanying flute of Theo Travis, despite the overall sound of the recording being awash with reverberation from the venue.

The Chapman Stick's deep register was delivered with immense power, adding tremendously to the music's brooding atmosphere. And the soundstage was wonderfully expansive, the sound of Steven Wilson's band of virtuoso musicians

in the concert hall making the walls of my listening room virtually disappear. And all the while, Wilson's far from pitch-perfect vocal notwithstanding, it was the little peppered details of the musicians' performances that kept me captivated throughout.

Testing the amplifier's mettle with well-recorded high-resolution material from Linn Records, Channel Classics, Reference Recordings and others showed that the transparency of the 625 S2 is outstanding, readily revealing the construction of a recording's soundstage and its individual elements.

Its bass authority, sweet and open highs, and even-mannered midrange were sublime when reproducing audiophile recordings, both fine vintage analogue and modern hi-res digitals alike.

When listening to live music it takes little effort to extract the sounds we're experiencing. But playing recordings via a hi-fi system is rarely that easy – we frequently find ourselves riding the gain, turning it up during quiet passages and down again when things get boisterous. When Jeff Rowland's amplifier was in my system I simply never felt the need. ☺

HI-FI NEWS VERDICT

This is an impressive amplifier that can be highly recommended to audiophiles wishing to build a luxurious system without having to auction the family jewels. It sounded truly fabulous driving my speakers, delivering the tight control and 'grunt' of a muscular solid-state Class A/B power amp while concomitantly exhibiting the charm and tranquillity of a pure Class A SET tube design. I loved it to bits.

Sound Quality: 87%

