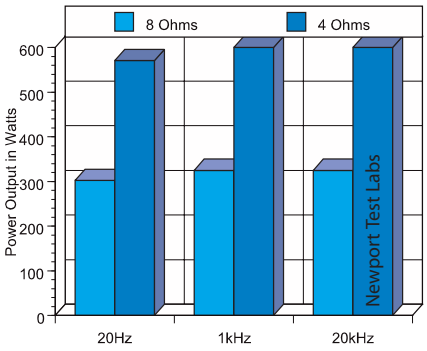
JEFF ROWLAND DESIGN 625 S2
STEREO POWER AMPLIFIER



How USA-based company Jeff Rowland Design can fabricate such an extraordinarily beautiful chassis from a dull old slab of aluminium (even if it is of the highest grade) is, to me, one of the marvels of the high-end. Here is an undeniably exquisite machined-from-solid design, blanketed in lustrous black anodising across its integral milled heatsinks—no off-the-shelf run-of-the-mill shin-shredding stuff here—and fronted with a three-dimensional fascia sporting the most deeply radiant patina. Everything about a Jeff Rowland Design component—and this, the 625 S2, is the latest stereo amplifier in the company's stable—reeks of '*ne plus ultra*' quality.

But the company is not only known for its exemplary fit and finish. Still headed by the towering Jeff Rowland himself, the Jeff Rowland Design Group (JRDG) has been producing highly acclaimed and de-

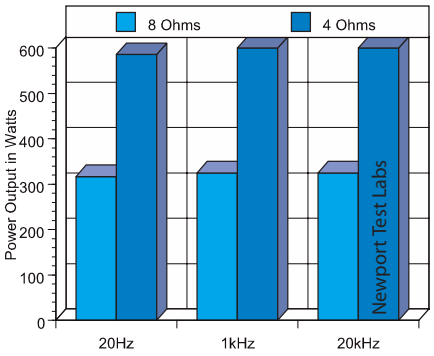


Power Output: Both channels driven into 8-ohm and 4-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [625 S2]

sired *performance* products for over quarter of a century. Indeed, among its stable of past achievements are the Synergy preamplifier and Model 8/8T power amplifiers; highly sought-after for their outstanding performance, reliability and superb construction. Try buying one in the second hand market (good luck finding one, owners hang on to them) and you'll despair at the high resale value.

NOT JUST A PRETTY FACE

The newest JRDG stereo amplifier, the 625 S2, is a revision/update of the 625. Blessed with identical styling, the new amplifier



Power Output: Single channel driven into 8-ohm and 4-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [625 S2]

brings refinements to the switch-mode and bipolar output device circuitry now adopted by Jeff Rowland for a number of amplification products. The interior of the chassis I gushed-over is CNC-machined into sections that house the various stages of electronics. Although expensive to execute to this standard, the benefits associated with this type of internal sub-sectioning include a marked reduction in RFI/EMI interference (the compartments providing shielding), superior thermal dissipation—with added support from the integral machined heatsinks—and resonance control. Further potential distortions are handled by JRDG's use of balanced-only and transformer-coupled input circuitry, the latter also providing wide compatibility with a variety of impedances while maintaining a stable gain. The input transformers are custom-designed units from transformer specialist Lundahl, using high-turn ratio Cardas copper wire windings.

The Class-A/B 625 S2 features a large 1,500 watt d.c. switch-mode power supply with power factor correction. The mostly surface-mount components are fixed to a Rogers ceramic laminate circuit board material which is said to lower dielectric absorption and energy storage. Further, the input circuitry includes a 2-pole filter aimed to attenuate all out-of-band signals and spurious noise from any source. These technologies and circuit implementations are said to, according to Jeff Rowland himself: '*improve upon the original 625 in a number of important areas. We have taken the existing circuit topology and improved the important distortion specification at higher frequencies (above 2kHz) to a virtually unmeasurable level extending beyond 20kHz. This was accomplished with an innovative error-correction technique previously unknown or implemented in the art of amplifier design. The S2's power factor corrected regulated power supply improves upon the original 625 by incorporating Jensen four-pole capacitors which offer nearly an order of magnitude reduction of output impedance and noise suppression. The power supply output voltage has been increased slightly to yield a 25 watt increase in total amplifier power output.*'

The 625 S2's polished fascia features a single central high-quality on/off power switch with a white LED surround. Audio signal-wise, around the back you'll find twin sets of Cardas speaker binding posts (conveniently provided for either horizontal or vertical speaker cable entry configurations), a single stereo balanced input (via XLR) and a 3.5mm mini-jack 12V remote on/off socket. Mains power is input via a 240V/15-amp IEC mains socket. It should be mentioned that the chassis' luxurious finish is maintained on the rear panel too.

The 625 S2 is a Class-A/B amplifier specified as being capable of 325-watts of continuous power into an 8Ω load and 600 watts into a 4Ω load. The frequency response is rated at 10Hz to 150kHz (–3dB) while the input impedance of 40kΩ should provide a moderate load for any well-designed preamplifier. At 26dB the amp's overall gain is sensible and widely compatible, the figure providing welcome relief from potential issues related to high (read excessive) gain designs, such as fine volume adjustability and pervasive system noise.

LISTENING SESSIONS

Jeff Rowland's 625 S2 may be almost diminutive when compared to solid-state devices of similar power capabilities but its sound presentation is anything but small. Of initial note was a solid music foundation provided by a deep and powerful low-end with terrific control akin to amplifiers of high damping factor. The kick drum in Jackson Browne's *Casino Nation* from his CD 'The Naked Ride Home' sounded



visceral and cut forward from the mix with stunning clarity. When the snare and toms kick in there's appropriate slam and tonality. Ditto for Browne's vocals which punch through with clarity over the melange of instruments.

The 625 S2 loves dynamic material. This applies across the entire frequency range but there's a special delight to the power and sheer gut-rumbling you'll get from well-recorded drums and bass. Joe Morello's, um… take on Brubeck's *Take Five*, from 'Morello Standard Time', is a drum lover's wet dream. It's percussion at concussive levels. When Morello lets it rip on both the kick and toms, the 625 S2 tracks the transients with superb speed, power and control. This recording also highlights another strength of the new 625 S2—its ability to etch-out a soundstage of large proportions with particular merit in the depth perspective. Here Morello's companion instrumentalists, saxophonist Ralph Lalama, pianist Greg Kogan and bassist Gary Mazzaroppiare, are layered with authentic depth cues and remarkable image placement accuracy.

I'm a great lover of the guitar, be it electric as played by favourites such as Hendrix and Satriani, or acoustic such as the LAGQ or French maestros Luc and Lagrene. Most competent amplifiers will provide a believable facsimile of these instruments but the 625 S2 was incrementally closer to the real thing due to its extraordinary detail retrieval and microdynamic reproduction. The steel string and fingernail micro-transients that audiophiles treasure (it's the small details that get you closer to the music) are beautifully rendered with seemingly not a smidgen of smear or loss. This is a truly accurate amplifier and Jeff Rowland's fixation with the suppression of any distortive elements has paid dividends in terms of realism.

Orchestral works are great exemplifying tools to illustrate the 625 S2's massive soundstage and imaging capabilities. Tchaikovsky's violin concerto and Strauss' unfortunately almost clichéd but nevertheless brilliant *Also Sprach Zarathustra* created large soundscapes and involving musical experiences. And when the string section swells, the 625 S2 maintains its poise without homogenising the crescendos—there's a definite sense of multiple individual instruments at play. There's superb resolution at hand here.

One of the benefits of such a neutral amplification device is its wide compatibility with loudspeakers that, themselves, bear sonic signatures that appeal to different tastes. In other words, this amplifier will never editorialise your speaker's inherent sonics. Be it loudspeakers or the feeding-signal source, if you choose warm and full-bodied charmers or detailed and resolving analytical tools, the 625 S2 will not disrupt these properties… or flavours… they are transmitted unscathed.

CONCLUSION

What is the role of the humble power amplifier? At the end of the day, a good power amplifier *amplifies*—without editorialising—the line-level signal it receives from the source upstream (be it an active or passive preamplifier or a direct source such as a DAC with adjustable volume) while providing adequate power to capably drive a wide variety of loudspeakers. Innocuously. Without detriment.

The Jeff Rowland Design Group 625 S2 meets the aforesaid mandate with the utmost competence and will fit into a very wide variety of systems. It will provide superb and neutral sound with cutting-edge resolution and micro/macro dynamics across the entire frequency range… and do so while looking like pure supermodel gorgeousness. ***Edgar Kramer***

JEFF ROWLAND DESIGN 625 S2 POWER AMPLIFIER

Brand: Jeff Rowland Design
Model: 625 S2
Category: Power Amplifier
RRP: $24,900
Warranty: TwoYears
Distributor: Absolute HiEnd
Address: PO Box 370
Ormond VIC 3204
T: (04) 8877 7999
E: info@absolutehiend.com
W www.absolutehiend.com

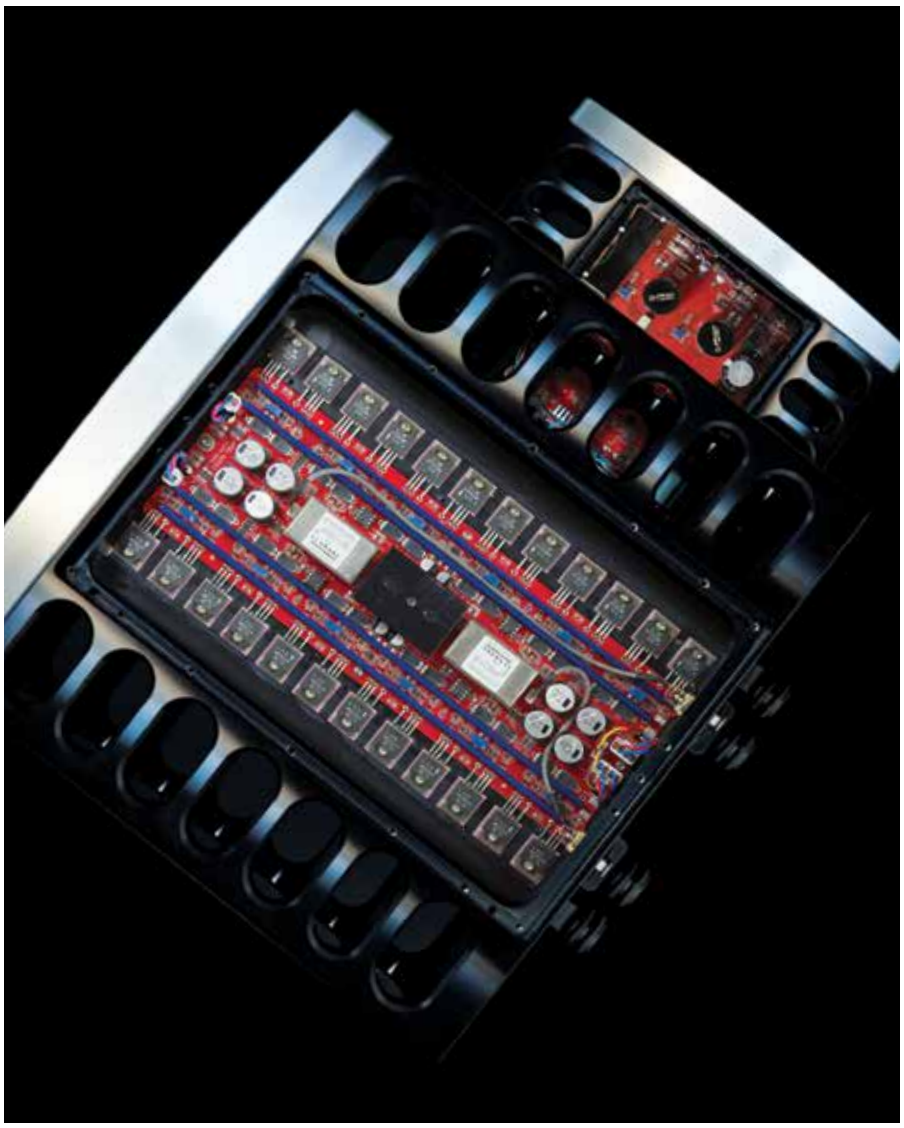


Superb engineering
Peerless build quality
Sounds accurate and powerful



Single balanced input
Control over gain

TEST LAB REPORT: See page 63
Test results apply to review sample only.



Jeff Rowland 625 S2 Power Amplifier – Power Output Tests

Channel	Load (Ω)	20Hz (watts)	20Hz (dBW)	1kHz (watts)	1kHz (dBW)	20kHz (watts)	20kHz (dBW)
1	8 Ω	317	25.0	325	25.1	325	25.1
2	8 Ω	302	24.8	325	25.1	325	25.1
1	4 Ω	586	27.7	600	27.8	600	27.8
2	4 Ω	571	27.5	600	27.8	600	27.8

Note: Figures in the dBW column represent output level in decibels referred to one watt output.

Jeff Rowland 625 S2 Power Amplifier – Lab Test Results

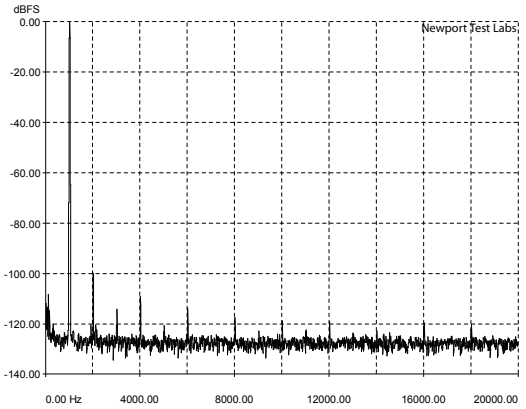
Test	Measured Result	Units/Comment
Frequency Response @ 1 watt o/p	1Hz – 210kHz	–3dB
Channel Separation (dB)	101dB / 92dB / 64dB	(20Hz / 1kHz / 20kHz)
Channel Balance	0.001	dB @ 1kHz
Interchannel Phase	0.02 / 0.02 / 1.2	degrees (20Hz / 1kHz / 20kHz)
THD+N	0.02% / 0.007%	@ 1-watt / @ rated output
Signal-to-Noise (unwghted/wghted)	80dB / 89dB	dB referred to 1-watt output
Signal-to-Noise (unwghted/wghted)	105dB / 113dB	dB referred to rated output
Output Impedance	0.02Ω	
Damping Factor	400	@1kHz
Power Consumption	1.24 / 90.00	watts (Standby / On)
Power Consumption	140 / 1,140	watts at 1-watt / at rated output
Mains Voltage Variation during Test	243 – 258	Minimum – Maximum

LABORATORY TEST REPORT

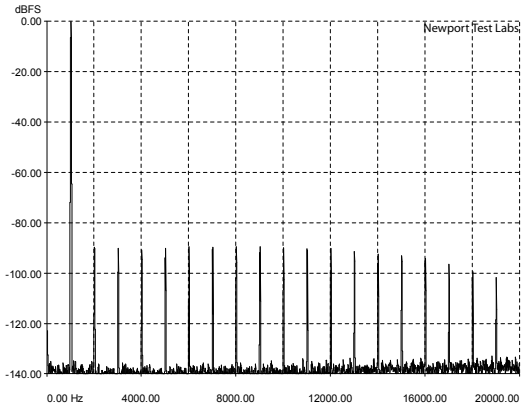
Newport Test Labs' measurements of the power output of the Jeff Rowland 625 S2 were almost an exact copy of the company's own specifications for power output, which suggests the company has not built in any margin for product variability, which in turn suggests that it's running full tests on each and every unit it builds to ensure it meets specs. So on the test bench, the 625 S2 produced exactly the 325-watts per channel into 8Ω loads, and the 600-watts per channel into 4Ω loads (both channels driven), for which it's rated. At least it did so at 1kHz (and 20kHz). Power output sagged very slightly (in reality only a fraction of a decibel) when the amplifier was driven with a 20Hz test signal, where the lab recorded both-channels-driven power output figures of 302-watts per channel and 571-watts per channel into 8Ω and 4Ω loads respectively.

The frequency response of the 625 S2 measured by *Newport Test Labs* exceeded Jeff Rowland's specifications by handy margins at both the low-end of the audio spectrum and at the high end, with the sample tested returning a frequency response extending from 5Hz to 40kHz ±0.12dB (which is shown as the black trace in Graph 4). The –3dB points of the 625 S2's response were measured as occurring at 1Hz and 210kHz. Whereas the black trace on Graph 6 shows the 625 S2's frequency response when driving standard non-inductive laboratory test loads (the test industry standard), the red trace on Graph 4 shows the 625 S2's frequency response when it was driving a load that simulates that of a typical two-way bass reflex loudspeaker, so the amplifier's output 'sees' not only resistance, but also capacitance and inductance (i.e. 'real' impedance). You can see from the graph that the 625 S2's response into this far-more-difficult load was very nearly as good as when it was driving the resistive load. This means that both the amplifier's 'sound' and performance will always remain the same no matter what loudspeakers you connect to it.

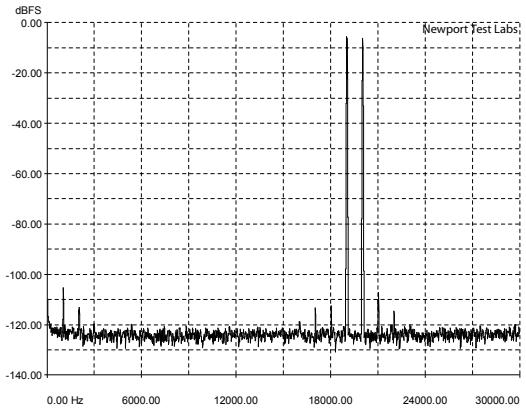
Channel separation was an excellent 92dB at 1kHz, and an even-better 101dB at 20Hz but as measured by *Newport Test Labs* dropped to just 64dB at 20kHz, which is actually quite a good result, but is 10dB less than the 74dB specified by JRDG. Interchannel phase was very close at low and midrange frequencies (0.02°) but swung to 1.2° at 20kHz. Channel balance was excep-



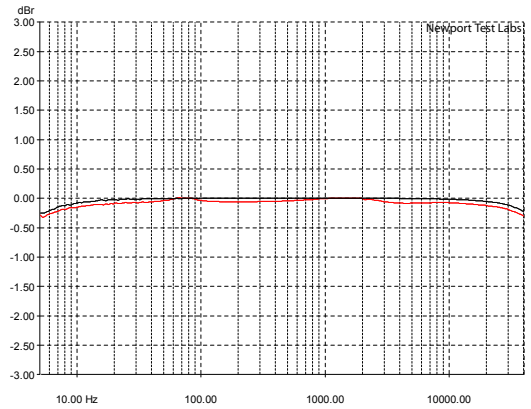
Graph 1: Total harmonic distortion (THD) at 1kHz at an output of 1-watt into an 8-ohm non-inductive load, referenced to 0dB. [Jeff Rowland 625 S2 Power Amplifier]



Graph 2: Total harmonic distortion (THD) at 1kHz at rated output (325-watts) into an 8-ohm non-inductive load, referenced to 0dB. [Jeff Rowland 625 S2 Power Amplifier]



Graph 3: Intermodulation distortion (CCIF-IMD) using test signals at 19kHz and 20kHz, at an output of 1-watt into an 8-ohm non-inductive load, referred to 0dB. [Jeff Rowland 625 S2]



Graph 4: Frequency response of line input at an output of 1-watt into an 8-ohm non-inductive load (black trace) and into a combination resistive/inductive/capacitive load representative of a typical two-way loudspeaker system (red trace). [Jeff Rowland 625 S2 Power Amplifier]

tionally good: 0.001dB at 1kHz.

Harmonic distortion was very low at an output level of 1-watt into 8Ω, as you can see from the Graph 1. The most obvious harmonic distortion components are not only all exceptionally low in level, they're also all even-order distortions, with the second harmonic at –100dB (0.001%), the fourth harmonic at –110dB (0.0003162%), the sixth at –112dB (0.0002512%), the eighth at –118dB (0.0001259%) and the even higher-order ones at around –120dB (0.0001%). There are only two odd-order components visible, a third-order at –115dB (0.0001778%) and a fifth at –120dB (0.0001%), and because these are also low-order, they'll also tend to 'improve' the sound of the amplifier rather than detract from it. (We haven't shown our usual 4Ω graph because the 625 S2's performance was essentially the same as it was into the 8Ω load.)

> *Provides superb and neutral sound with cutting-edge resolution and micro/macro dynamics across the entire frequency range…*

Distortion increased considerably when the 625 S2 was operating at its rated output of 325-watts, as you can see from Graph 2. The distortion structure shown on the graph is an interesting result because it's the first time I can recall both odd and even-order harmonics being almost equal with each other, as well as at a similar level right across the audio spectrum. As you can see, the distortion components right up to the 16th harmonic are each a little below –90dB (0.0031623%): it's only after the 16th harmonic that the levels of the harmonic distortion components begin to fall. (Again, the result into 4Ω was similar, so we've omitted that spectrogram for reasons of space.)

Intermodulation distortion at an output of 1-watt into 8Ω was extremely low, both in terms of high-frequency sidebands and the unwanted signal regenerated at 1kHz. As you can see if you look at the left-hand end of Graph 3, the unwanted 1kHz signal is present, but is 105dB down, or just (0.0005623%) of the total signal. At the right-hand side of the graph, you can see that either side of the 19kHz and 20kHz test signals there are IMD products at 17kHz (–113dB), 18kHz (–112dB), 21kHz (–108dB) and 22kHz (–114dB) but that's about it. A truly excellent result.

The 1-watt signal-to-noise ratios measured by *Newport Test Labs* fell quite a bit short of JRDG's specification of 95dB, with the lab reporting figures of 80dB unweighted and 88dB A-weighted referenced to one watt. Given that the noise floor shown in Graph 1 is mostly more than 120dB down over the audio band, I suspect that the signal-to-noise measurement could have been tainted by very high-frequency noise generated by the 625 S2's switch-mode power supply. It was not possible to re-test with a suitable filter because the test sample had been returned. Referenced to rated output, both signal-to-noise ratios exceeded the mystic 'three digit' figure, returning results of 105dB unweighted and 113dB A-weighted—figures so good that they reinforce my suspicion about high-frequency switching noise.

The Jeff Rowland 625 S2 proved to have very low output impedance (0.02Ω) which means it also has a very high damping factor (DF) of 400, which in turn ensures it will easily be able to control the inevitable unwanted back-emf from any loudspeaker system.

Mains power consumption was quite high, ranging from 90-watts when the amplifier is idling to around 140-watts when it's playing music at comfortable listening levels, to 1,140-watts when it's being operated at maximum output. Standby power consumption was a low 1.24-watts, which is not only higher than the standby consumption specified, but also higher than the Australian standard of 0.5-watts. However, so long as you switch the amplifier off whenever you're not using it, you won't consume any power at all. ***Steve Holding***

SUBSCRIBE AND SAVE!

AVHUB TECH, TESTS & TECHNIQUES SUBSCRIBE ONLINE



Yes, you can read some of our reviews in full on AVHub.com.au. You can now swipe your way through every page of *Australian Hi-Fi* on your iPad or Android tablet, (or computer) using our snazzy Digital Issues. But there's nothing like the proper print edition, landing in your letterbox sealed in shiny cellophane, ready for you to read at your leisure, at full size, in the order we intended, in the bath, if you like.

Get every issue of *Australian Hi-Fi* the way it should be.

Subscribe online, anytime @ mymagazines.com.au

YES! PLEASE SEND ME A SUBSCRIPTION TO AUSTRALIAN HI-FI

☐ 14 ISSUES (2 YEARS) $109 — SAVE OVER $30
☐ 7 ISSUES (1 YEAR) $59 — SAVE 15%
INCLUDES HOME CINEMA & HI-FI LIVING SPECIAL EACH YEAR

◯ New Subscription **or** ◯ Extend Subscription **or** ◯ Gift Subscription

◯ Mr ◯ Mrs ◯ Miss ◯ Ms

Your Name _____

Your Address _____

_____ Postcode _____

Daytime Phone ( ) _____

E-mail _____

Please provide phone or email in case of delivery issues

IF A GIFT SUBSCRIPTION ◯ Mr ◯ Mrs ◯ Miss ◯ Ms

Recipient's Name _____

Recipient's Address _____

_____ Postcode _____

Daytime Phone ( ) _____

E-mail _____

MYMAGAZINES.COM.AU

SYDNEY (02) 9901 6111
TOLLFREE 1300 361 146

SUBSCRIPTIONS
PO BOX 3355
ST LEONARDS NSW 1590

PAYMENT DETAILS

I enclose a cheque/money order for $ _____

payable to Next Media Pty Ltd **OR** Charge my credit card:

◯ Mastercard ◯ Visa ◯ American Express

Name on Card _____

Expiry Date ____/____ CVV: _____

Cardholder's Signature _____

Terms and conditions: Price offer available to Australian and NZ residents. Expires 27/12/15. Includes GST. Savings based on total cover price. Overseas Airmail 14 issues A$195 or 7 issues A$99. Australian Hi-Fi subscription comprises of 7 issues PA – 6 regular issues and 1 special issue. This form may be used as a Tax Invoice. nextmedia Pty Ltd ABN 84 128 805 970. Please tick if you do not wish to receive special offers or information from nextmedia or its partners via ☐ email ☐ mail. Please refer to www.nextmedia.com.au for the full Privacy Notice.

MA/HF