

# esoterica

## CAPRI: A CLASS ACT

Jeff Rowland wows once more



**The story of Helix**  
Today's most accurate  
audio playback device?



# Jeff Rowland Capri S2-SC

## Preamplifier



- Great looks & build
- Customisable
- Stunning sound



- Volume control
- Headphone output



RRP \$9,200

Jeff Rowland's products are unmistakable. First, they always stand out visually due to the beauty of their appearance and their obviously superb build quality. And their exemplary sound quality is another reason why they stand out, though the company's recent decision to concurrently produce both classic Class A/B power amplifiers and the newer Class D power amplifiers has divided opinions amongst the marque's many fans, with some decrying the move to include the latter and others applauding it. I guess Jeff Rowland's view is that those who approve of his Class D amplifiers can buy them, and those who disapprove can buy his Class A/B designs. It's actually a win-win scenario that shows how very easy it is to start a flame war on the internet...

### THE CAPRI S2-SC

Although the Capri S2-SC preamplifier doesn't have any Class D circuitry inside it, there is a tenuous design link to Class D: the designer who was responsible for the analogue and control circuitry in the Jeff Rowland Continuum S2, which uses Class D output circuitry designed and built by Pascal, was also responsible for the circuitry inside the Capri S2-SC. That designer is none other than Thomas Holm, whose day job is with Danish firm Holm Acoustics.

Jeff Rowland says of Thomas Holm's work for his company: "We worked together on the analog preamplifier circuitry of the Continuum s2. The Capri S2-SC uses the same circuitry and circuit boards as the Continuum S2 analog and control feature set. Thomas developed the

four-layer PCB layout with a lot of attention to achieving very low noise and distortion. There are not a lot of designers with his level of expertise in this and other critical design areas. He also developed the front panel control circuitry and overall microprocessor control circuitry for all of the operating functions."

Just in case you were wondering who from Jeff Rowland said that, it was actually Jeff Rowland himself, who not only still owns Jeff Rowland Design Group (JRDG) but also, after nearly 50 years, still works there almost every day. Indeed, he actually walks to work because his home is only around 500m from the JRDG factory in Colorado Springs, Colorado, USA.

Although all of JRDG's amplifier chassis are made in Colorado, from aluminium (precision-machined from solid blocks of aircraft grade 6061-T6 aluminium, no less), and all PCB assembly is done either in-house or somewhere else in Colorado, the company is now sourcing sub-assemblies from as far afield as Sweden, Denmark and Japan. Rowland is emphatic, however, that "final assembly is entirely at our headquarters... without exception."

Just in case it isn't clear from the images that accompany this review, the Jeff Rowland Capri S2-SC is tiny, measuring only 67x350x157mm (HWD). Despite these diminutive dimensions, it still tips the scales at 4.26kg... courtesy of all that solid air-craft grade 6061-T6 aluminium. And it's almost entirely due to that aluminium, because while the weight of the copper that's used to wind the power transformer usually contributes greatly to the weight of high-end hi-fi components, the Capri S2-SC's power supply does not use a power transformer but instead a

universal solid-state switch mode power supply.

Rowland says of this supply: "[the] low noise, high-current, dual-regulated switch-mode auto-sensing and auto-ranging power supply provides Capri with optimum performance at any worldwide mains operating voltage." It's also capable of efficient operation at either of the two mains frequencies in common use (50Hz and 60Hz). It also means that Jeff Rowland can claim the Capri S2-SC is 'green' despite being permanently powered on — did you notice that there's no power switch? — because the unit consumes only six watts of mains power. Also, since it's constantly powered up, there is no need for any warm-up time in order to achieve maximal musical performance. Finally, power consumption is so low that almost no heat is produced, allowing owners to operate the Capri S2-SC in an enclosed space if necessary.

The input source switching on the front panel is quite conventional, although the switches themselves are of insanely high quality. There are seven all up; the first four select the source you want to listen to, bearing in mind that you can optionally fit one of two different phono cards to get an input for a phono cartridge.

If you install either of the two optional plug-in phono cards you will have the choice of three gain and loading options, which between them will be sufficient to accommodate moving-magnet, moving-coil and high-output moving-coil cartridges with varying degrees of adjustability depending on whether you install the 'standard' phono card or the 'high performance' (HP) card. Adding the standard phono module will bump the recommended retail price up to \$9,850 while adding the HP module will punt it up to \$11,200.





(Note that you may find information on the internet stating that there is an optional plug-in DAC card available for the Capri S2-SC. However, according to Absolute Hi-End, Jeff Rowland's Australian distributor, Absolute Hi-End, there is no such card for the Capri S2-SC.)

Obviously, if you take up either of the phono options you'll be left with only three line-level inputs. Three should be enough for most users, though it may not be, in which case you will be pleased to learn that the next button in that row of seven that is labelled on the front panel as a 'Bypass' input does not actually have to be a bypass input at all!

When used as a bypass input, this button allows the Capri S2-SC to be installed as a part of a multi-channel home theatre or surround sound system whose volume is controlled not by the S2-SC's own volume control (which is bypassed, hence the descriptor) but instead by whatever external multi-channel processor you are using.

If, however, you have no use for the Capri S2-SC's bypass function, you can convert it to a conventional line-level — one that does not bypass its volume control. Doing this does require you to access the inside of the case and change a jumper connection on the printed circuit board, though this is easy enough to do and full instructions are provided in the Jeff Rowland's excellent owners' manual.

**... the front-panel buttonry is superb, with just the right tactile feel to leave a lasting impression**

If you don't feel confident doing this yourself, I'm sure that whoever sold you your Capri S2-SC would be happy to do it for you.

Immediately to the right of that bypass button is one that allows you to invert the phase of both channels. This could be very useful if you are sensitive to absolute phase and one of your components (most likely your CD player or DAC) inverts phase. In this case, the button allows you to instantly restore the signal so that you are hearing exactly what the producer intended.

The last button on the row of seven is a mute button that, naturally, mutes the amp's output when pressed. (There's also a mute control on the supplied remote). The logic of the mute circuit is excellent, because if the Capri S2-SC is muted, it will stay muted if you switch inputs but will disengage itself automatically if you touch either the volume dial on the front panel or the volume buttons on the remote — which almost eliminates the possibility of potentially damaging your loudspeakers. This is excellent, but even more excellent is that the muting circuit ramps up rather more slowly than it ramps down, which is much kinder on the ears than muting circuits that are either muted or not, with no inbetween. However, I think I would prefer the option of having the circuit mute volume instantaneously but then ramp up slowly.

The tell-tale LEDs under each front-panel button are all orange, including the bypass button — except for the one underneath the mute button, which glows red. It's only a small thing but I think the LED under the bypass button should also have been red, as a warning that the front panel volume control was no longer in circuit. (Though since this would not make sense if the bypass was configured as a conventional input, Thomas Holm might have made the right call. Then again, if a chameleon LED had been used, it could've changed colour according to how it had been configured!)

As you'd expect, the Capri S2-SC implements the same input selection schema as the brand's Continuum S2, in that there are no wires from the rear panel inputs to a PCB. Instead, all the rear panel inputs fix directly to the PCB. Also, all input signals run through two Swedish 'Lundahl' LL1545A transformers (one per channel) before being sent to the amplifier section.

Of this transformer-coupling technique, Rowland says: "Transformer-coupled input circuitry provides universal component compatibility and virtually eliminates ground loop noise and radio frequency interference and electromagnetic interference. [It also] ensures integrated overall gain when using unbalanced input adaptors. Other benefits include ground noise isolation and excellent common mode noise rejection from all sources."

The rotary volume control at the far right of the Capri S2-C2's front panel is a 'dual rate' type, meaning that if you move it very slowly it will adjust volume very slowly in 0.5dB increments, whereas if you move it quickly it will instead adjust in 5dB increments. Self-evidently then, it is not a conventional potentiometer but actually an optical encoder. Jeff Rowland says that its operation "allows noiseless precision level adjustments over a 99.5dB range while maintaining the same tactile feel, accuracy and channel balance at all settings."

Volume level is displayed on the front-panel display in the form of green-yellow digits approximately 12mm tall. Although this is a perfectly innocuous colour that matches the displays of several other of Jeff Rowland's components, it has caused some consternation amongst a number of Jeff Rowland owners because some of the company's components have displays with blue-ish digits (Corus preamplifier) and champagne-coloured digits (Daemon CD player), which means if you use multiple Jeff Rowland components in your system, the displays might not match. My immediate uncharitable thought was that those complaining should get a life. My considered thought was even more uncharitable. I mean, matching display colours? Really?

However, if you are one of those who are really, *really* concerned about mismatched display colours, I have a solution for you: turn the display off! OK, so the Capri S2-SC doesn't actually have a front panel button that will turn the display off (though you can do this with the remote control, about which more later), but you can actually make an internal adjustment to the circuit board that will turn the display off, after which it will come on only when you touch one of the front panel controls (or one of those on the remote), after which it will go off again after five seconds.

This is a simple adjustment you can make yourself, though if you do undertake it, know that Jeff Rowland will take no responsibility if

you make a mistake! To quote the manual: "If you as an end user choose to attempt these adjustments yourself, Jeff Rowland Design Group cannot be held liable for any damage that may occur to your Capri S2 preamplifier because of your actions. Further, accessing the interior of your Capri S2 Preamplifier by removing the bottom cover can expose you to dangerous, potentially lethal electrical voltages. Thus, Jeff Rowland Design Group cannot be held liable for any injury you may sustain should you undertake any of these adjustments yourself."

Speaking of internal adjustments, the Capri S2-SC is the newest version of the Jeff Rowland Capri S2, with the 'SC' standing for 'SuperCapacitor' to indicate that this model is fitted with expensive, high-end super-capacitors rather than standard capacitors. The good news is that if you own one of the older Capri S2 models, it can be factory-upgraded to this newer 'SC' version for \$1,500 (plus labour costs).

## REAR PANEL

On the rear of the Capri S2-SC you'll find both unbalanced (via rhodium-plated, copper RCA sockets) and balanced (via silver-plated Neutrix XLR sockets) input connectors. At first glance it may appear that Jeff Rowland is giving you a choice for each separate input, but closer examination shows that this is not the case. Inputs 1 and 2 are accessed via the unbalanced RCA terminals, and Inputs 3 and 4 by the balanced XLR terminals. All inputs have an input impedance of 48 ohms, which is very low. Most line-level inputs have an impedance of around 10k ohms. The bypass input (optionally a fifth

line-level input, remember) also has an input impedance of 48 ohms.

You have the choice of using unbalanced outputs (via gold-plated RCA terminals) which have an impedance of 40 ohms, or balanced outputs (via gold-plated XLR terminals) with an impedance of — yep, you guessed it! — 80 ohms. Obviously, the balanced outputs would be your go-to option.

## REMOTE CONTROL

The infra-red remote supplied with the Capri S2-SC is quite small — just 145mm long, 37mm wide and 16mm deep — so it's very easy to cradle in your hand. It's made in Korea, powered by two AAA batteries and, I have to say, is nowhere near the same build quality as the Capri S2-SC... not even close! Also, it has only six operational functions — display on/off, volume up/down, input selection, mute on/off, phase switching, and channel balance.

If you look closely at the remote, you'll see that the button that controls the display says 'Dim', though it doesn't dim it at all; it turns it off completely — along with all the LEDs, as I mentioned earlier — and this includes the warning light for the mute function!

As for channel balance, control over it is implemented via two push-buttons. The manual says that these offer balance adjustments of 0.5dB, but if I pressed +0.5dB on the right channel on my sample, the left channel's output automatically reduced by 0.5dB, and *vice versa*. This means you're actually getting 1dB increments in balance between the channels, rather than the 0.5dB increments claimed.

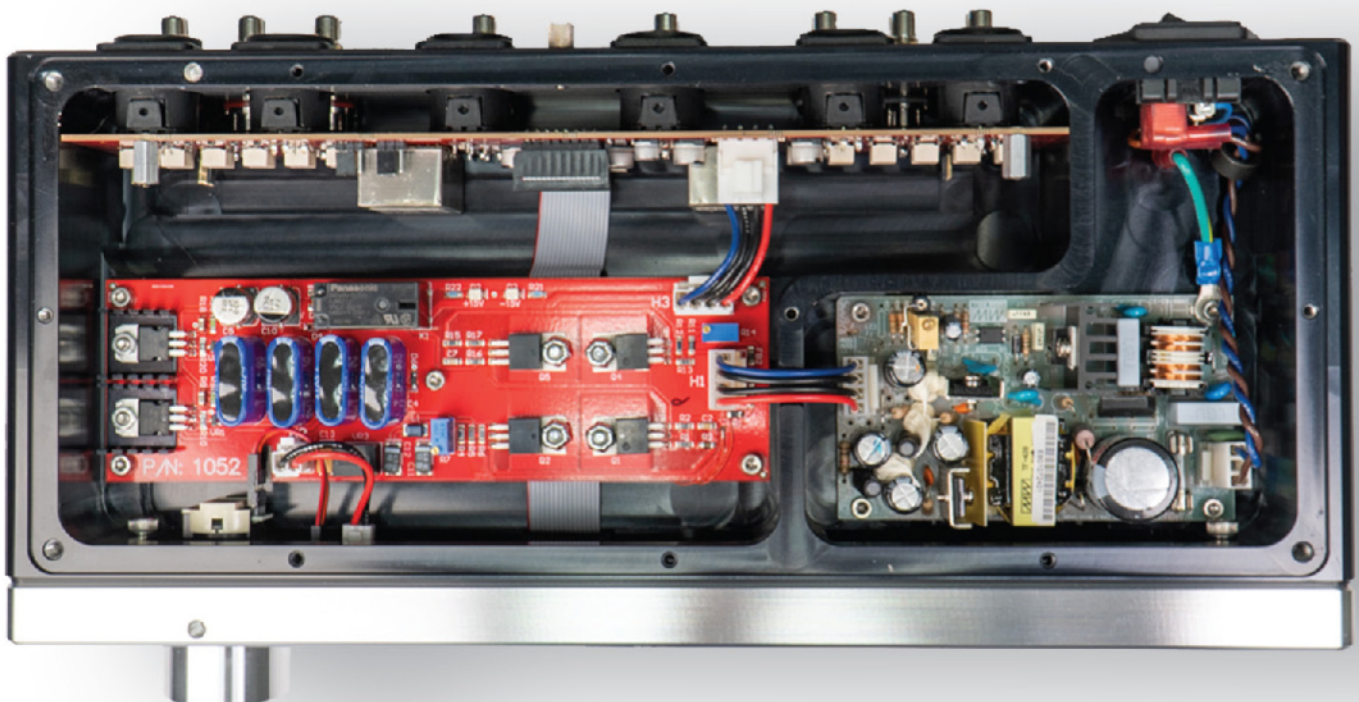
This was a bit annoying, but what I found even more annoying was that you can't actually check on where you've set the balance without actually adjusting whatever balance you had set in the first place. So if you'd set it to 0.5dB, checking it with the one button would take it to 1dB and checking it with the other would take it to 0dB. That said, you can adjust balance to favour the left or the right channel respectively to a maximum of 3dB.

However, in reality, you'd be setting channel balance by ear and not by using the display anyway, so I suppose we should just be grateful that Jeff Rowland saw fit to provide a balance control at all — many manufacturers make no provision for adjusting balance, yet a balance control is often essential in order to ensure that the stereo image is located exactly at the listening position.

## LISTENING SESSIONS

Before starting the results of my listening sessions, I have to describe what it's like to use the Capri S2-SC, because the 'hands-on' experience (or, if you want me to make it sound more technical, the 'kinaesthetic' experience) is a very important part of the total 'pride of ownership' experience. If, for example, a component has a scratchy control, it's rather like having a thorn in one's side.

So I have to say that the front-panel buttonry is superb, with just the right tactile feel to leave a lasting impression. And as for the Capri S2-SC's volume control, it's one of the silky-smoothest ones I've ever used. The way it works, too, where rotating the volume knob slowly causes the





volume to increase or decrease in those small, precise 0.5dB steps, but rotating it quickly forces it to switch it to its larger (5dB) steps so that you can make large changes in volume very quickly, is almost miraculous.

How fast does the volume change? Faster than a speeding bullet! Or, to be precise, just 10 seconds to go from one extreme to the other if you use the front-panel volume control. And if you use the remote, you'll be able to get it from whoa to go in just two seconds!

If you think that providing two-speed operation makes sense, I need to tell you that most manufacturers who use optical encoders as volume controls (as here) do not bother to provide this functionality, so you have to spin their versions of the control about a gazillion times to get from minimum to maximum volume — especially those ones that use loudness tapers. On the Capri S2-SC one single 360-degree rotation of the dial will take you from an indicated '0.00' to an indicated '99.5'. (And if you're wondering why Jeff Rowland didn't go the extra '0.5', think for a few seconds more...)

I have to say, however, that the control can be a bit touchy when you're trying to make those tiny, 0.5dB adjustments. I found that I would accidentally overshoot by 1 or 1.5dB, no matter what direction I was going (i.e. increasing or decreasing volume). This wasn't really an issue in terms of volume level, because the differences were small; it was mainly a matter of frustration that I couldn't get it right first go. But maybe you're more manually dextrous than me and so won't experience this.

About the time I started this review, I heard the sad news that legendary Greek composer Evángelos Odysséas Papathanassiou (better

known as 'Vangelis' for obvious reasons) had died, which caused me great grief because he composed the music for the soundtrack to my absolute all-time favourite movie, *Blade Runner*. His soundtrack is so integral to the movie that I really can't even imagine it without it. So of course I kind of imitated what Paul Simon did in his song *The Late Great Johnny Ace* and played my two CDs of the *Blade Runner* soundtrack through the Capri S2-SC in memory of him. (The other CD being the orchestral rendition released in 1982 by the New American Orchestra.)

I know *Blade Runner* isn't everyone's cup of tea, so you could also choose to remember Vangelis by playing the iconic theme music for the movie *Chariots of Fire*, for which he deservedly won an Oscar. The movie's producer Lord Putnam said: "I think Vangelis created a new landscape, a new musical landscape, that many other composers have taken advantage of." (He may have been thinking of Hans Zimmer, who did such a wonderful job on the soundtrack to the sequel *Blade Runner 2049* here. Or not.)

Vangelis used a lot of synthesised sounds in the soundtrack — mainly those from an analogue Yamaha CS-80 — but he also used a great many real instruments, including piano, gamelan, tubular bells and a variety of orchestral percussion. The Capri S2-SC was not only able to deliver the intensity and depth of the multi-layered score, but was also able to instantly reveal when real instruments were played, rather than synthesised ones. This is a rare talent. The purity of the high-frequency sound effects in *Blush Response* was impressive, as too was the ability to deliver deep low frequencies simultaneously with extreme highs while also maintaining the exact tonality of the human voice (*Rachel's Song*).

Following in the same memory theme for departed musicians, I also span up Jeff Beck's album 'Blow by Blow', from 1975, which has some of his greatest performances on it, such as *Freeway Jam*, *You Know What I Mean* and, of course, *Cause We've Ended As Lovers*, which is why it was Beck's best-charting album (it reached No 4 on *Billboard*). I note for the record, however, that he actually only wrote one song on this album on his own (*Constipated Duck*) — several others were co-written with Max Middleton, while the best two (*Cause We've*

*Ended... and Thelonious*) were written by Stevie Wonder. *On Freeway Jam*, the Capri S2-SC reproduced Richard Bailey's percussion work brilliantly well, revealing how well it worked against Beck's soloing, and the beautiful way he reintroduces the theme.

*Cause We've Ended...* is a beautiful tune. I'd kind of forgotten just how beautiful. The Capri S2-SC transmitted the beauty perfectly, but this track also requires superb channel separation and channel matching to best work its magic, and the fact that the magic was right up there with Penn & Teller greatness proved to me that the Capri S2-SC is a brilliant performer in both of these essential areas.

## CONCLUSION

The Jeff Rowland Design Group's new Capri S2-SC preamplifier is a class act! It looks superb and sounds wonderful, offering incredible dynamics and zero background circuit noise.

— Greg Borrowman

## CONTACT INFO

**Brand:** Jeff Rowland  
**Model:** Capri S2-SC  
**RRP:** \$9,200 (base model)  
 \$9,850 (w/standard phono card)  
 \$11,200 (w/HP phono card)  
**Warranty:** Five Years  
**Distributor:** Absolute Hi End  
**Address:** PO Box 370  
 Ormond, VIC 3204  
**T:** (04) 8877 7999  
**E:** [info@absolutehiend.com](mailto:info@absolutehiend.com)  
**W:** [www.absolutehiend.com](http://www.absolutehiend.com)

Readers interested in a full technical appraisal of the performance of the Jeff Rowland Capri S2-SC preamplifier should continue on and read the LABORATORY TEST REPORT published on the following page. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

**On Freeway Jam, the Capri S2-SC reproduced Richard Bailey's percussion work brilliantly well**

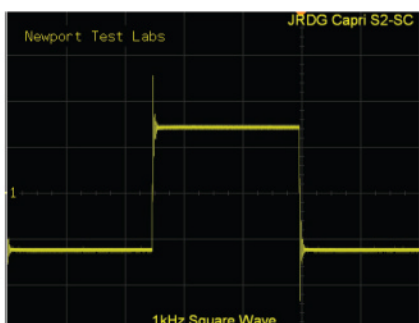
# Laboratory Test Report

Newport Test Labs measured the frequency response of the Capri S2-SC as extending from less than 1Hz right up to 277kHz -1dB, and from less than 1Hz right up to 301kHz -3dB, which is an incredibly extended frequency response — far more than you will ever need. The extension at high frequency was assisted by the fact that despite those 1dB and 3dB downpoints, the lab measured the frequency response of the Capri S2-SC as being flat-out to 100kHz, after which it started a slow rise that peaked at +5dB at 170Hz before falling to the tabulated down-points. If you combine the -1dB downpoints with the +5dB peak, this puts the overall normalised response at <1Hz – 277kHz ±3dB.

The frequency response of the Jeff Rowland Capri S2-SC within the audio band is shown in Graph 1, and you can see that it is essentially ruler-flat given the extreme vertical scaling used (0.5dB per division). The response is only 0.1dB down at 5Hz and 0.25dB up at 40kHz. Channel separation (not shown, but tabulated in the accompanying test result chart) was an extraordinarily good 130dB at 1kHz, and even at the extreme ends of the audio band was well into three figures, being 111dB at 20Hz and 114dB at 20kHz. You'll never, ever, need more separation between stereo channels than is on offer here!

Channel balance was also spectacularly good — one of the best the lab has ever measured, I believe — with a difference in gain between the two channels of only 0.002dB (at 1kHz). Interchannel phase was perfect at and below 1kHz, registering a perfect result, but was 0.4 degrees out at 20kHz. This is only of academic interest (and likely related to that high-frequency rise noted earlier) as it will have absolutely zero effect on sound.

Graph 2 shows the total harmonic distortion of the Jeff Rowland Capri S2-SC, as measured by Newport Test Labs. Although there are three distortion components visible at 2kHz, 3kHz and 4kHz, these are actually residual distortion components from the lab's signal generator, so the Capri S2-SC has added no distortion of its



own to the output. This means that any distortion components that may be present are more than 120dB down, which, when expressed in the usual percentage terms, means that each would contribute less than 0.0001% to the total. As for that total, Newport Test Labs measured THD+N at 0.002% — far, far lower than would ever be required for perfect music reproduction.

You can also see on Graph 2 that low-frequency mains noise (the almost invisible peak at the extreme left of the graph) is close to 100dB down, so it should not come as a surprise to see that Newport Test Labs measured the overall signal-to-noise ratio of the Jeff Rowland Capri S2-SC as 95dB A-weighted. This is an outstanding result, not least because it's referenced to a very low voltage (500mV). If the lab had used a higher reference, the S/N ratio would easily have exceeded 100dB.

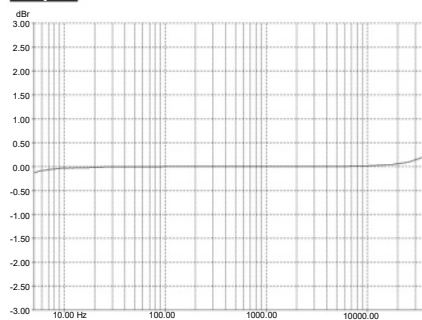
Graph 3 shows IMD, and you can see there are two sidebands to the test signals: one at 18kHz that's 115dB down (0.00017%) and the other at 21kHz that's 112dB down (0.00025%), while there are two difference signals down at 1kHz and 2kHz that are 113dB down (0.00022%) and 124dB down (0.00006%) respectively. Although the Jeff Rowland Capri S2-SC has levels of IMD that are measureable (just!), they're not levels that would be audible under any circumstances.

Newport Test Labs also measured the Capri S2-SC's response to a 1kHz square wave, the result of which is shown graphically below as an oscillogram. As you can see, there's an overshoot caused by that peak in the high-frequency response at 170kHz, but otherwise the square wave is perfectly reproduced.

Newport Test Labs measured input sensitivity as being 99mV for 500mV out, which puts gain at 14.1dB (Jeff Rowland specs it as 14.0dB). In a rather clever move, Jeff Rowland has arranged the circuitry so that when the volume control is set to 85.5 there is no gain applied at all (so 0dB gain). Therefore, 100mV at the input will give 100mV at the output.

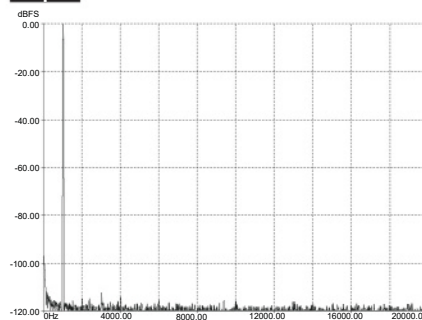
The review sample of the Jeff Rowland pulled nearly 15 watts from the 240V wall socket, which is around three times what the company

Graph 1



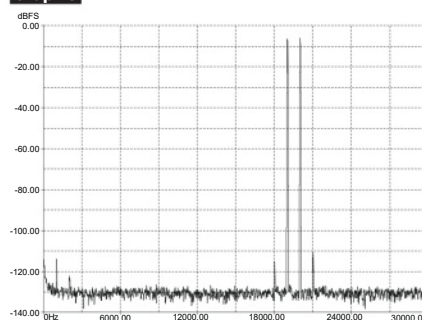
Frequency Response at 500mV out

Graph 2



THD (1kHz) at 500mV out

Graph 3



CCIF-IMD (19kHz/20kHz 1:1) at 500mV out

specifies. That said, the preamplifier still ran cool enough that it could safely be used in an enclosed space.

Overall, the Capri S2-SC delivered exemplary results on Newport Test Labs' test bench. It's an outstanding performer. **— Steve Holding**

## Jeff Rowland Capri S2-SC Preamplifier – Laboratory Test Results

Test	Measured Result	Units/Comment
Frequency Response @ 1 volt o/p	<1Hz – 277kHz	-1dB
Frequency Response @ 1 volt o/p	<1Hz – 301kHz	-3dB
Channel Separation (dB)	111dB / 130dB / 114dB	(20Hz / 1kHz / 20kHz)
Channel Balance	0.002dB	dB @ 1kHz
Interchannel Phase	0.00 / 0.00 / 0.4	degrees (20Hz / 1kHz / 20kHz)
THD+N	0.002%	@ 1-volt
Signal-to-Noise (unweighted)	89dB	dB referred to 500mV output
Signal-to-Noise (A-weighted)	95dB	dB referred to 500mV output
Input Sensitivity	99mV	(for 500mV out)
Output Impedance	80Ω	at 1kHz
Gain	14.1dB	@1kHz
Power Factor	+0.493	watts (Standby / On)
Power Consumption	14.47	watts
Mains Voltage Variation during Test	241 – 245	Minimum – Maximum