DISTORTION IN THAT AMPLIFIER, PLUS EFFECTIVELY GIVE IT A FAR HIGHER DYNAMIC POWER RATING. YOU GAIN ALL THESE ADVANTAGES BY USING THE ELECTRONIC CROSSOVER TO SEND ALL THE LOW FREQUENCIES TO A SUBWOOFER (OR IN THE CASE OF THE PARASOUND P5, UP TO TWO SUBWOOFERS) FOR AMPLIFICATION AND REPRODUCTION, AND ONLY THE C LEVER! THAT’S WHAT I CRIED OUT ONCE I’D FINALLY GOT MY HEAD AROUND THE SWISS ARMY KNIFE OF A COMPONENT THAT PARASOUND HAS CREATED WITH ITS P5 PRE-AMPLIFIER. THEN I THOUGHT TO MYSELF: ‘REALLY CLEVER!’ BECAUSE ALTHOUGH THE PARASOUND P5 IS A FULLY-FEATURED PREAMPLIFIER, AND A DIGITAL-TO-ANALOGUE CONVERTER, AND A HEADPHONE AMPLIFIER… AND A LOT MORE BE-SIDES… IT’S ALSO AN ELECTRONIC CROSSOVER, AND SO FAR AS I KNOW, NO-ONE HAS PREVIOUSLY THOUGHT TO INTEGRATE AN ELECTRONIC CROSSOVER INTO A PRE-AMPLIFIER. AND I, PERSONALLY, THINK THAT DOING SO IS AN ABSOLUTELY WONDERFUL IDEA.

THE EQUIPMENT
Why do I think incorporating an electronic crossover into a pre-amp is so wonderful? Because it means you can use it to prevent Doppler distortion in your main loudspeakers and effectively increase the power-handling ability of those speakers. And insofar as your power amplifier is concerned, it can reduce higher frequencies to your power amplifier and (therefore) main speakers. And yes, I know there are some subwoofers on sale that allow you to do this, but most don’t, and of the few subwoofers that do, not many do it well. Far better to perform the crossover function in the preamplifier section, as is done here...

So on the back of the P5 you’ll find two crossover outputs: a low-pass output with a rotary control and settings at 20Hz, 40Hz, 60Hz, 80Hz, 100Hz, 120Hz and 140Hz, and a high-pass output also with settings from 20Hz to 140Hz and calibrations at 20Hz intervals. Associated with both crossovers are slider switches that allow the crossovers to be bypassed, should you so desire.

Despite my enthusiasm for the idea of incorporating an electronic crossover in the P5, it appears this wasn’t really Parasound’s purpose in so doing. According to Parasound’s long-serving CEO, Richard Schram, the actual reason was: ‘to offer a true audiophile two-chan-
As a dedicated pre-amplifier, the P5 certainly offers tons of features and operational flexibility. In addition to the digital inputs (about which more later), the P5 has five line-level analogue inputs, four of which are unbalanced (RCA terminals) and one of which can either be balanced (XLR terminals) or unbalanced (RCA) — but not both at the same time… you can only connect one or the other! It also has a phono input with switching for both moving-coil (MC) and moving-magnet (MM) cartridges, with selectable loads at 20Hz, 1kHz and 20kHz.

As you can see from the front panel, the P5 has good old ‘old-fashioned’ (but very useful!) bass and treble controls, but if you’re not a fan of tone controls, you can press a button and take them out of circuit. A balance control (also useful, and inexplicably AVOL from a great many pre-amps and integrated amplifiers) is also a fixture on the P5, so it also gets a big tick from me. There’s a separate volume control for the subwoofer outputs, plus a global muting button. This muting button is not overly ‘smart’ in that it will turn off automatically (as it should) when the up or down buttons on the remote are pressed, but not if the front panel’s volume control is turned, which means it could be possible for your speakers to be blasted with sound at high volume levels if the front panel volume control is turned up while the amplifier is muted, and the muting then removed. Also, the P5 allows you to switch inputs while its output is muted, so if you switch to a source that has a substantially higher output than the source you switched from, you could again be ‘blasted’ by sound at high volume when you un-mute.

Interesting, although the muting button has associated colours that make its status clear (blue-coloured rear illumination when the muting is not active, and red-coloured rear illumination when it is), the tone on/off button isn’t nearly so intuitive, because it’s illuminated from behind with blue light when the circuit is active, but there’s no light at all when it’s off.

The shape of the power on/off and mute buttons is strange, presumably so they can be rear-illuminated more effectively. They’re lozenge-shaped and protrude from the panel on a stalk that makes them look almost mushroom-like… if you can imagine a lozenge-shaped mushroom. They do work beautifully though… a very ‘positive’ feel with great tactile feedback.

The remote control isn’t particularly flash, and you don’t get any additional features when using the remote, so it’s really only for the convenience of operating the unit from a distance.

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the comfort of your listening chair. It’s supplied with a set of ‘Titen’ (sic) AA batteries. Don’t even think of installing these in the remote… chuck ‘em and install a decent set of Eveready alkalines that are guaranteed not to leak!

The exterior of the P5 is thick, solid metal, and the assembly and build quality is excellent, but it’s not exactly pretty. It looks like it’s been built to slide into a professional equipment rack, or be tucked away in a cupboard rather than as a display piece. (And, since you can indeed order the P5 with rack-mount handles, I’m probably not too far wide of the mark with this description.)

PARASOUND A23 POWER AMPLIFIER

The circuitry for the A25 was designed by John Curl, whose name is legend in audioophile circles. Although Curl was already well-known in professional audio circles for his work with Ampex Corporation, and with musicians for his work with The Greatful Dead, he didn’t really come to the attention of the audiophile fraternity until he worked on the JC1 and JC2 amplifiers for Mark Levinson (and if you didn’t know that, you now know what the initials of those Mark Levinson products stood for). Curl eventually left Levinson to found his own high-end amplifier company (Vendetta Research) but has since 1989 been consulting for Parasound in San Francisco, primarily developing the Halo series amplifiers for the company, but also working on other Parasound projects. At Parasound, Curl is insistent that his designs use the finest parts possible, avoids the use of capacitors and inductors in the circuit path, and continues to use balanced circuits, despite the additional costs. Schram once said of Curl: ‘He wouldn’t last a week in a mass-market factory… the accountants would probably reject every part he picked because it cost too much. At the same time, he knows how to make a very, very good product at what we consider to be a reasonable price.’ Despite being lauded for his amplifier designs, Curl, at age 72, is still chasing perfection.

‘We have never yet been able to make a completely perfect amplifier at any price… the challenge is to make very good amplifiers in a way that is cost-effective,’ he says.

As you can see for yourself, the front panel of the Parasound A23 is almost devoid of controls, pretty much as you’d expect for a power amplifier, but if you look at the rear of the A23, you can see it has far more controls and features than you’d expect. It has both balanced (via XLR) and unbalanced (via RCA) inputs, plus a loop-through so you can route an input signal to an additional amplifier if you like. There are also two volume controls—one for each channel—so not only can you adjust volume, you can also adjust channel balance. These controls have a smooth action, rather than a ‘click-stop’ action, so if you need precise level adjustments, you’ll likely have to use test equipment to get the levels perfect, unless you set both controls to maximum (labelled as ‘Reference/THX’).

Three toggle switches are provided for Ground Lift (which can be used to prevent ground loops that might otherwise result in audible mains hum), balanced/unbalanced input selection and selecting between ordinary stereo operation and bridged mono operation. As the name suggests, this means you can use the A23 as a standard two-channel stereo amplifier, in which mode it’s rated to deliver 125-watts into 8Ω loads, or you can switch it for single-channel monobloc operation, in which case the A23 is rated to deliver 400-watts into the single 8Ω load.

At the left of the rear panel is a suite of options for turning the A23 on (and off). You can elect to do this manually, or you can have the Parasound auto-sense the presence of an audio signal and switch on automatically (in which case it will switch off automatically once it no longer detects an audio signal). You can also have it triggered remotely via the usual 12V d.c. system used by home theatre (and home install) components. To ensure there isn’t any ‘nuisance’ switching, the A23 waits for around five minutes after it no longer detects a signal before switching itself off. Switch-on is instantaneous.

The speaker terminals are certainly serviceable, and they’re gold-plated multi-way types, so they’re not exactly ‘budget’ terminals, but if there’s a MkII version of the A23, I would really like it if Parasound could allow Curl a bit of extra budget to improve the terminal quality. However, since the A23 has been in continuous production since the turn of the century, I can’t see there being a MkII anytime soon!

Internally, the most visually impressive component is the massive custom-made 1kVA encapsulated toroidal power transformer with its independent secondary windings for each channel. Storage and smoothing is by way of four 10,000µF/80V electrolytic capacitors, for a total of 40,000µF. (Parasound specifies a total of 48,000µF, so presumably there’s been some slight modifications to the circuit over the years the A23 has been in Parasound’s line-up… the PCB on our review sample, for example was last revised in 2002.) The amplifier topology is that of a complementary MOSFET driver stage and JFET input stage, with the final output being via twelve beta-matched 15-amp, 60MHz bipolar output transistor pairs—Sanken C3519/ A1386 types, to be precise. There are two big internal aluminium heatsinks running down either side of the PCB, so there’s no need for any noisy fan-cooling. The amplifier is well-protected from misadventure thanks to the use of d.c. servos, relays and fuses, along with thermal protection. Rather unusually, all the individual components on the PCB are ‘old-school’ through-hole types… there’s not a surface-mount component in sight!

IN USE AND LISTENING SESSIONS

It wasn’t until I had mounted the Parasound P5/A23 combo on my equipment shelving that I really took any notice of the red power lights that indicate each component’s power status. Each centrally-located light is a rectangular section of black plastic that’s embossed with a metallic ‘P’. These glow a fairly bright red when the Parasounds are operational,
and a soft muted red when they’re in Standby. I found that on close inspection the design wasn’t really to my taste, being a little too ‘American’ in style… but that’s very much a personal call.

Operationally, everything worked perfectly, though the rotary controls used for bass, treble and balance felt a little stiff under my fingertips. The input source encoder, on the other hand, is a delight under the fingertips, rotating smoothly and with the sound automatically and momentarily muted during switching. The relays that do this are a tad noisy, but this is of no import. Blue LEDs light to show the selected input, unless you’ve selected ‘Bypass’ which is instead indicated by an orange LED.

The motorised volume control works reliably and well no matter whether you use the remote or turn it manually. If you turn it manually there’s no backlash, so you can set volume levels easily and repeatedly, and if you use the remote, you can see where the volume knob is set to thanks to a white line scribed on it.

One of the first tasks I set myself with the Parasounds was to use them to seriously audition a young(ish) pianist of whom I previously was not aware, and had been recommended to me by a friend who said that I would ‘enjoy her unique Bach interpretations’. Well I don’t know about ‘enjoy’ bit but I was certainly in no doubt about the ‘unique’ because I don’t think I’ve ever heard any pianist use the same phrasing or dynamics. But that was what most people thought when they first heard a young Glenn Gould’s take on the Goldberg Variations. And it was Gould’s performance that triggered a worldwide re-evaluation of Bach’s work. His recording, in 1955, was amongst the very few recorded versions available at the time, and the first of the few to gain any prominence. But as a direct result of Gould’s performance, I can tell you that as of 2015 there are now 213 versions available, across multiformat instruments… including—I’m told but don’t quite believe—a version for jaw harp.

So think what you will of Simona Dinnerstein’s interpretations, if her performances inspire others to investigate Bach’s work, that’s a great outcome. However, lest you think I’m being too hard on her, I’ve been leading you on for literary effect, because I absolutely love her playing, not only for the inner voices she found that I’d not previously heard, but also because her interpretations made me go back and re-evaluate other, different versions… also a good thing. When listening, I had ample opportunity to appreciate what the Parasound PS/A23 duo was bringing to the party. The first and most obvious contribution was the dynamism that’s on tap, with the A23 able to effortlessly deliver Dinnerstein’s most thunderous crescendos… and they are thunderous, because she has powerful fingers and an even-more powerful technique, allowing her to extract major SPLs from any piano she plays—in this case a restored 1903 Steinway Model D. Her ‘not quite staccato’ attack on the keys in Variation 1 is miraculously good, as is her tonal shading. The ritardando at the conclusion is perfect. In fact, Dinnerstein’s Goldberg (Telarc CD80692) is now my third favourite version of this work, my favourites being Gould’s 1955 and 1981 versions. What Gould absolutely nails when playing Bach was to my mind identified perfectly by Norwegian pianist Leif Ove Andsnes, who in an NPR interview said: ‘The miracle of Gould is for me his touch, and the floating quality of his polyphonic playing, where the vertical and horizontal elements in the music are in perfect balance. And the millions of nuances within each voice in a four-part fugue, for instance—it’s like four brilliant minds working at the same time. That part of Gould was pure genius, and makes both his early and his late Goldberg Variations desert island recordings.’

After many enjoyable hours with Bach I resurrected an old warhorse: ‘Don’t Smoke in Bed’ by the Holly Cole Trio… or for me a new warhorse because somehow I lost my original copy a few years ago. (I probably left in a loaner CD player I returned to the distributor of Ben Watt’s (from Everything but the Girl) it is. Actually, every single track on this CD is a great version, whether it’s Cole Porter’s Get out of Town, Willard Robinson’s Don’t Smoke in Bed or Casey Scott’s Cry (If You Want To). Through it all, the Parasound duo was audibly invisible… all I was hearing was the music, being delivered better-sounding than I ever remember it. For me, there is no greater proof of a superb amplification chain.

During my listening sessions I used three different speaker set-ups: a floorstanding pair of speakers, the same pair but with a subwoofer, and a smaller pair of bookshelf speakers also both with and without a subwoofer. The Parasound combo worked brilliantly across all four speaker combinations, but simply excelled when the subwoofer was in the mix, particularly with the floorstanding speakers, because I could set the crossover at such a low frequency that the subwoofer integrated perfectly, so I was getting full range from the floorstanders and only the sub-bass from the subwoofer. So if you haven’t previously considered a 2.1 system for stereo, now is the time to start thinking about it… because it really works a treat!

**CONCLUSION**

Parasound is one of the very few companies in the world that has a reputation for state-of-the-art sound quality and engineering as well as a reputation for delivering superb value for money, and in looking at this duo, it’s easy to see why: buy this pair and you’ll be getting an awful lot of power and incredible performance for what, quite frankly, are ridiculously low prices. And that’s true no matter whether you buy the P5, the A23, or both. —greg borrowman
LABORATORY TEST RESULTS

First up, I want to make it clear that very, very few of these results can be compared against Parasound's specifications because whereas Parasound spec's each amp separately, Newport Test Labs tested the P5 and A23 as a pair so, for example, the distortion results are the sum of the P5's THD and that of the A23. So each individual component would have lower levels of distortion than is shown here. [Editor's Note: I requested the testing be done this way because in practise, this is the way most people will use their Parasound combo in real life.]

Looking at the frequency response first, you can see that the overall bandwidth of this pre/power combo is very wide, being just 3dB down at 4Hz and 116kHz. Even if you constrain the dB limits, the overall response extends from 9Hz to 57kHz ±0.5dB. Across the audio band (20Hz to 20kHz) the response is even flatter again, as you can see from Graph 6, where the black trace (the response into a standard non-inductive 8Ω laboratory-grade load) is just 0.3dB down at 20Hz and 0.1dB down at 20kHz so, normalised, the performance is 20Hz to 20kHz ±0.15dB. The other trace is 20Hz to 20kHz ±0.1dB down at 20kHz so, normalised, the response does come with one proviso, which is that the tone controls circuit needs to be detented (the middle '0' position). As you can see, although the lower (red) trace shows the response with the tone control circuit active, but with the bass and treble controls at their nominal 0° position. You can see, although the frequency response is still relatively flat (1.2dB down at 20Hz and 0.85dB down at 20kHz), it’s not in the same league as the response above it. Note that because of the overall differences in absolute levels between the two traces, output volume will increase when the tone controls are switched out of circuit, which will tend to make this setting sound ‘better’ than the other, simply because it’s louder, and it’s a peculiarity of human hearing that we tend to judge louder sounds as being ‘better’… even if they’re otherwise identical to the quieter sounds against which they’re being compared.

Very few amplifiers are capable of this high standard of performance

Almost every two-way loudspeaker system… in other words, a ‘real-life’ load.

You can see that the performance of the Parasound is virtually identical to that into an 8Ω load, meaning the A23 in this case will sound the same no matter what speakers they’re being compared. Very few amplifiers are capable of this high standard of performance.

However, the linearity of the frequency response does come with one proviso, which is that the tone controls circuit needs to be defeated to achieve this response. The reason is shown in Graph 6, where you can see the top (black) trace, with the tone controls switched out of circuit, is very flat (note the different vertical scale compared to Graph 8) whereas the lower (red) trace shows the response with the tone control circuit active, but with the bass and treble controls at their nominal 0° position. As you can see, although the frequency response is still relatively flat (1.2dB down at 20Hz and 0.85dB down at 20kHz), it’s not in the same league as the response above it. Note that because of the overall differences in absolute levels between the

If you are using the tone controls, I’d suggest ering on the side of caution, because the bass tone control offers far more boost (and cut) than most tone control circuits—around 17dB, compared to the more usual 10–12dB. The treble circuit also offers an unusually high level of boost, and one that doesn’t appear to be particularly well shelved. However, so long as you use modest levels of boost
Channel separation was good, but not particularly so, particularly at high frequencies, where it was measured at 49dB. This result might have been improved by using balanced wiring connections between the P5 and the A23: Newport Test Labs for some reason best known to itself used the unbalanced connections. Cable length and routing would also affect this result. That said, the result is more than will be required for this pair to deliver audibly excellent stereo imaging and channel separation. Level matching between channels was slightly less accurate than I am used to seeing, but the 0.5dB mismatch is tiny and will be completely inaudible, not least because it will certainly be less than will inevitably be introduced by your loudspeakers. Plus, of course, you could match the channels perfectly using either the balance control on the P5 or the volume controls on the rear of the A23. Interchannel phase errors were low, particularly at low frequencies.

Distortion levels were very low across the board, and particularly low at lower output levels, which will be where this powerful amplifier will be operating most of the time in normal domestic applications. Graphs 1 and 2 show THD into 8Ωand 4Ω loads at an output level of 1-watt and you can see that very few harmonic distortion components are present in the output, and the few that are present are low-order (and therefore sound pleasant to the human ear) and very low in level, so their contribution to the overall sound would be barely perceptible (if at all). The 8Ω result is clearly the better of the two, with a second harmonic at –96dB (0.00158%), a third harmonic at –100dB (0.00031%), a fifth harmonic at –115dB (0.000177%) and a sixth at –118dB (0.0001259%). The noise floor is significantly more than 120dB down over most of the audio band, increasing only at very low frequencies, where you can see it’s at around –100dB. This put the overall THD+N figure at a very good 0.01%, as you can see in the tabulated results.

Distortion levels increased with increasing output but even at full rated output—125-watts into 8Ω (Graph 3) and 200-watts into 4Ω, (Graph 4)—all harmonic distortion components were more than 90dB down (0.0031623%) and most were more than 100dB down (0.001%). Although higher-order distortion components are now present in the output, it is the lower-order components that dominate. Note that the noise floor has dropped down closer to –140dB across most of the audio band, though the very low-frequency noise (mains and mains-related) still sits at around –100dB.

### Parasound A23 Power Amplifier — Power Output Test Results

<table>
<thead>
<tr>
<th>Channel</th>
<th>Load (Ω)</th>
<th>20Hz (watts)</th>
<th>20Hz (dBW)</th>
<th>1kHz (watts)</th>
<th>1kHz (dBW)</th>
<th>20kHz (watts)</th>
<th>20kHz (dBW)</th>
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<tbody>
<tr>
<td>1</td>
<td>8 Ω</td>
<td>159</td>
<td>22.0</td>
<td>159</td>
<td>22.0</td>
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<td>2</td>
<td>8 Ω</td>
<td>147</td>
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<td>21.7</td>
<td>147</td>
<td>21.7</td>
</tr>
<tr>
<td>1</td>
<td>4 Ω</td>
<td>254</td>
<td>24.0</td>
<td>254</td>
<td>24.0</td>
<td>254</td>
<td>24.0</td>
</tr>
<tr>
<td>2</td>
<td>4 Ω</td>
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<td>230</td>
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<td>1</td>
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<td>23.0*</td>
<td>378</td>
<td>25.8</td>
<td>378</td>
<td>25.8</td>
</tr>
<tr>
<td>2</td>
<td>2 Ω</td>
<td>200*</td>
<td>23.0*</td>
<td>325</td>
<td>25.1</td>
<td>325</td>
<td>25.1</td>
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</tbody>
</table>

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

* Protection triggered. Auto-resetting once power level reduced.

### Parasound P5 Preamp & A23 Power Amplifier — Test Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Measured Result</th>
<th>Units/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response @ 1 watt o/p</td>
<td>9Hz – 57kHz</td>
<td>–1dB</td>
</tr>
<tr>
<td>Frequency Response @ 1 watt o/p</td>
<td>4Hz – 11kHz</td>
<td>–3dB</td>
</tr>
<tr>
<td>Channel Separation (dB)</td>
<td>67dB / 66dB / 49dB</td>
<td>(2Hz / 1kHz / 20kHz)</td>
</tr>
<tr>
<td>Channel Balance</td>
<td>0.5</td>
<td>dB @ 1kHz</td>
</tr>
<tr>
<td>Interchannel Phase</td>
<td>0.04 / 0.11 / 2.02</td>
<td>degrees (2Hz / 1kHz / 20kHz)</td>
</tr>
<tr>
<td>THD+N</td>
<td>0.01% / 0.004%</td>
<td>@ 1-watt / @ rated output</td>
</tr>
<tr>
<td>Signal-to-Noise (unweighted/weighted)</td>
<td>78dB / 85dB</td>
<td>dB referred to 1-watt output</td>
</tr>
<tr>
<td>Signal-to-Noise (unweighted/weighted)</td>
<td>97dB / 102dB</td>
<td>dB referred to rated output</td>
</tr>
<tr>
<td>Input Sensitivity (Bal or Unbal Input)</td>
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<td>(1-watt / rated output)</td>
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<td>Output Impedance</td>
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<td>@1kHz</td>
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<tr>
<td>Damping Factor</td>
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<td>@1kHz</td>
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<tr>
<td>Power Consumption</td>
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<td>watts (Standby / On)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>86.21 / 478</td>
<td>watts at 1-watt / @ rated output</td>
</tr>
<tr>
<td>Mains Voltage Variation during Test</td>
<td>238 – 245</td>
<td>Minimum – Maximum</td>
</tr>
</tbody>
</table>
Thanks to the reduced noise floor, overall THD+N was measured at 0.004%.

Intermodulation distortion was very low, as you can see from Graph 5, which shows CCIF-IMD using test signals at 19kHz and 20kHz. The resulting IMD components at 18kHz and 21kHz are around 80dB down (0.01%) and those at 17kHz and 22kHz are nearly 100dB down (0.001%). There is a small signal regenerated at 1kHz, visible at the far left of the graph, but it’s around 92dB down (0.0025119%).

Speaking of noise, it was very low, as you can see from the tabulated figures. Referenced to an output of 1-watt, Newport Test Labs measured S/N ratio at 78dB unweighted and 85dB weighted. Referenced to rated output, these figures improved to 97dB and 102dB respectively—outstanding results both.

Absolutely outstanding was the A23’s damping factor, which Newport Test Labs measured at 800, off the back of an output impedance of just 0.01Ω. This means the A23 will be able to control even the most undisciplined loudspeaker cones, thanks to a damping factor that, according to speaker guru Floyd E Toole, is ten times greater than will ever be actually required.

The same could also be said of power output, because the Parasound A23 proved to be able to deliver far more power than most audiophiles will ever require—no matter how inefficient their loudspeakers—with Newport Test Labs recording ‘both channels driven’ power outputs of 147-watts into 8Ω loads, 230-watts into 4Ω loads and 325-watts into 2Ω loads. The fact that the Parasound will deliver even higher output levels when only a single channel is driven means that it’s capable of even higher levels of ‘dynamic’ power, so you’ll get even more power again on musical transients. As a result—and in conjunction with its proven performance into 2Ω loads—the Parasound A23 will be completely stable into even the most difficult and demanding loudspeaker loads.

Input sensitivity testing returned the voltages I’d expect, but I was surprised to find that the sensitivity of the unbalanced inputs—31mV required for an output of 1-watt, and 345mV in order for the amplifier to deliver its rated output—was almost identical to that of the balanced input.

Mains power consumption was fairly high no matter what power levels the amplifier is delivering, and peak at 478-watts, but I’d plan on the pair drawing an average of around 100-watts from your mains in day-to-day use, so less than a couple of light bulbs.

In standby, the pair drew only 0.77-watts, so if measured individually each one would easily meet the Australian standard for stand-by power consumption.

Overall, the Parasound P5 and A23 perform synergistically as an outstanding pre/power duo, with particular kudos due the A23.

The Parasound P5 and A23 perform synergistically as an outstanding pre/power duo, with particular kudos due the A23.
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