

esoterica

REVIEWED

No need to ask, OAD's preamp is a
Smooth Operator



Sound Travels

Inside Sound Gallery

A store with a story
that began 4,000
miles away...

OAD Ultrafidelity Padma

Preamplifier



- Superb imaging
- Clever dual mode operation
- Australian innovation



- Lengthy power-up
- Remote source selector
- Odd 'Mute' logic



SPOA

If you read the review in the last issue (Issue 530, March/April 2023) of the OAD Vajra stereo power amplifier that would be the ideal companion for this Padma preamplifier, you will already know something of how the all-Australian company Open Audio Designs not only designs its components in Australia but also builds them in Australia as well. In fact, they are built by hand. You will also know that the company's lead designer (and owner) is none other than Jon De Sensi, who has been designing and building high-end audio equipment for several decades, most of which were sold bearing the 'MusicLabs Australia' brand name.

De Sensi is also well-known for thinking outside of the box and not being a "me too" designer. The power supply he designed for the Vajra, for example, uses slit-foil capacitors, which he says is a first for any power amplifier anywhere in the world. He also used an unusual transistor topology in the Vajra's output stage — one that is rarely encountered in the world of high-power audio amplifiers. De Sensi claims his UP1 MM/MC phono amplifier has a greater gain range than any other available on the market, too. And in the Padma preamplifier on review here he has elected to use a full dual-mono design, and the balanced inputs are fully balanced right from the input XLRs to the output XLRs.

As for this preamplifier's seemingly unusual

name, it's not an Australian Aboriginal word, as you might have expected, but the Sanskrit word for the aquatic flowering plant we call a lotus. According to YogaPedia, "Padma grows from out of the mud, but blooms in perfect beauty above the surface of the water. Thus, it is often seen as a symbol for those who overcome ignorance and suffering in order to find enlightenment and self-realisation. It can be seen as representing purity of body, mind and speech, as it rises above attachment and desire, liberated and full of bliss."

The lotus plays an important symbolic role in many Indian religions, including Hinduism and Buddhism. And it is referenced in the well-known chant "*Om mani padme hum*", a mantra that is held to be the condensed form of all Buddhist teachings, though its precise meaning and significance are the subject of some debate by many Buddhist scholars. It is usually translated to mean "praise to the jewel in the lotus".

THE EQUIPMENT

As you can see, Open Audio Designs (OAD) has elected to follow a styling favoured by Marantz, where the controls on the front panel are balanced symmetrically around a central point — that point in this case being the large rotary volume control, though on the Padma, this control also optionally operates as a channel balance control.

The controls arrayed either side of the

volume/balance control are input source selector buttons, each with its own associated LED. The right-most of these six is designed for use with a home theatre setup, but OAD uses a system to implement this that I can't recall seeing previously. What happens with the Padma is that whenever it is switched on, any source that is connected to 'Input 6' will be routed to the 'Main' output, which would normally be connected to your home stereo amplifier. However, whenever you switch the Padma off, the source connected to that sixth input will instead be routed to the 'Home Theatre' outputs, which you'd connect to the amplifier in your home theatre system.

Although it looks like a standard rotary control, the one fitted to the Padma is most definitely anything but a 'standard' rotary control. Indeed the only thing it has in common with those devices is that it rotates! The volume control is motorised and its position is monitored magnetically. Once a specific position has been determined, the gain of the output stage is then controlled by digital circuitry that in turn controls resistor ladders using (supposedly) dual-buffered, laser-cut precision, low-noise, zero-induction resistors. This control schema allows the volume circuitry to be placed close to the input and output connectors to minimise the length of the signal path. De Sensi says the accuracy, linearity and dynamic range that results from this arrangement is much greater





than is possible by using stepped attenuators or potentiometers, and delivers “optimal purity”. It also means that both volume and balance can be adjusted in precise 0.5dB steps.

The only drawback to this unique arrangement is that it’s necessary to calibrate this circuitry every time the Padma is powered up. The drawback isn’t that this is an onerous process, because the Padma automatically calibrates itself, but that it takes one minute and forty seconds, during which time the volume control moves back and forth clockwise and anticlockwise and emits first a high-frequency tone, followed by a lower-frequency tone, and then finally a series of sounds not unlike those made by R2D2 in the Star Wars movies.

OAD’s manual says that this three-stage calibration process takes only 30 seconds, but each time I tried it, it took around three times that long. I should note that this calibration process only happens if you disconnect the Padma from the 240V mains supply. Leave it connected to the mains, only turning it off by switching it to

The stereo imaging was perfection, the instruments all correctly placed... the soundstage was rendered exactly

standby mode when you aren’t using it, and no calibration is required.

According to the company, there are three steps in the calibration process, all of which are solely concerned with the operation of the volume knob mechanism. In the first step, the Padma finds the position of the maximum and minimum end stops of the volume control and checks the range of motion. In the second step, the process calibrates the volume knob’s position sensor. And in the final step, the knob is moved to its maximum position and then stepped back in the other direction, visiting each volume position in turn to recheck the sensor calibration. At the end of the calibration procedure, the Padma automatically selects ‘Input 1’ as the active source input and sets the volume at minimum.

As stated previously, the Padma’s volume control also acts as a balance control. In order to switch its operational mode, you need to press and hold down the active source selector button for three seconds. We found that method a little strange, but it prefaced the stranger things that were to come...

When you release the source selector button, the knob rotates to show the currently selected balance, so if you have not adjusted the balance, it will rotate to the 12 o’clock position, after which the LED on the knob will glow. This indicates 0dB — equal volume in both channels. If you then manually rotate the knob back to the 9 o’clock position you will feel ‘detents’ as you rotate, with each detent indicating a 0.5dB change. When you get to the 9 o’clock position, the left channel will be 6dB louder than the right. Go in the other direction, and when you reach the 3 o’clock

position the right channel will be 6dB louder than the left.

The strangeness comes if you try to rotate the control further left than 9 o’clock or further right than 3 o’clock. You can do either, but when you release the control, it will auto-rotate itself back to either 9 or 3 o’clock. It’s a bit like the control has a mind of its own (which I suppose it does)! You exit the balance mode by pressing any one of the front panel’s controls or the power button on the remote control. Whatever balance setting you select is memorised in EEPROM.

As you will have realised from the previous paragraph, the Padma comes with an infrared remote control, the six buttons on which not only duplicate all of the functions available from the front panel but also add a mute function.

When the Padma is muted, the volume buttons on the remote are locked out, but not the volume control on the front panel. This means that if the front-panel volume control is turned to the right, when the amplifier is un-muted (by pressing either the mute or power buttons on the remote, or any of the source buttons on the front panel), the volume will be louder than when the amplifier was muted. Perhaps far louder. It would have been preferable to have locked out the front-panel volume control, as well as the volume buttons on the remote, or have the amplifier un-mute itself in the event that volume is adjusted upwards, via either means of volume adjustment. However, I have to state for the record that almost all manufacturers’ mute circuits operate exactly the same way as the one in the Padma.

A peculiarity of the remote control is that the two source select buttons fitted do not cycle

through the inputs continuously so that if you are playing from the first input you'd have to press the 'Source Up' button once to get to second, and again for third and so on. Once you get to the sixth and final input, pressing 'Source Up' again will not cycle you back to the first input — you instead have to press the 'Source Down' button five times in order to access it. Cyclic controls are more efficient and therefore preferable, but pressing a button a few times more than you'd otherwise need to is hardly arduous and certainly not a dealbreaker!

As you can see from the images that accompany this review, the Padma's rear-panel layout is clean and neat, with more than enough room for even the bulkiest of interconnect cables and plug types. You should also be able to see that although 'Input 3' through to 'Input 6' are only available as unbalanced (single-ended or SE) inputs, the first two inputs can be accessed via a balanced (XLR) or unbalanced (RCA) connection.

Using the balanced inputs would be my preferred option in all situations — not least because of the superior electrical contact enabled by the use of XLR connectors — but in this case it would be my *even more* preferential connection method because of the all-balanced, dual-mono nature of the Padma's circuitry.

I should note, by the way, that if you use the Padma in conjunction with the Vajra, the Padma's remote control will switch both machines on and off (actually, in and out of standby) and, so long as mains power remains connected, all settings active at switch-off will be restored at switch-on.

IN USE AND LISTENING SESSIONS

One aspect of the reviewing process I always find surprising, even though it happens so often that I should not be surprised at all, is how one aspect of a component's performance can leap out right at the very start of the auditioning process. In the case of the OAD Padma, it was the soundstage that it created instantaneously — I didn't even have to wait for it to warm up!

The stereo imaging was perfection, the instruments all correctly placed. The height, width and depth of the soundstage was rendered exactly. It helped that I was playing an album that was so sonically beautiful. Listening to the surreal tones that open *Telegraph Road*, the lead-in track to the masterpiece that is Dire Straits' 'Love Over Gold', I marvelled at the atmospherics too, and when *Private Investigations* came in, the accuracy of the placement of the guitars and shakers was, in a word, perfect.

The interplay between Mark Knopfler's guitar and Mike Mainieri's marimba were rendered perfectly by the Padma too. I always have a chuckle listening to *Industrial Disease*, undoubtedly Dire Straits' funniest song — indeed a comic classic — as well as admire the band's

ability to use it to seamlessly deliver an in-joke when the doctor diagnoses the disease Brewer's Droop, a slang term used to describe erectile dysfunction brought on by heavy drinking. (The in-joke is that both Knopfler and Straits' drummer Pick Withers once played in a UK band named after the condition, though interestingly not at the same time).

The title track allowed me to hear how well the Padma spaced and placed Alan Clark's keys against Knopfler's guitar and the background of Withers' drums. The amplifier so clearly revealed John Illsley playing a fretless bass and also laid bare the differences in tonality and texture between Mainieri's marimba and his vibraphone.

Closing track *It Never Rains* has Clark playing around with his various keyboards (Hammond C-3, piano, Farfisa, etc), and the revealing Padma differentiates them wonderfully, but one wonders why the band ever chose to close with this song, because it's by far and away the weakest on the album. Its saving grace is the superbly eclectic wah-wah-rich extended solo by Knopfler. (A Kiwi TV gardening show loved this song so much it used its opening melody as its theme music.)

The depth and cleanliness of the bass delivery from the Padma was more than ably demonstrated when it was fed Daft Punk's 2013 classic 'Random Access Memories'. The solidity of the bass I heard listening to opener *Give Life Back To Music* was second to none, and the depth of the impact was such that I feared for my bass drivers! Despite the duo's electronic history, the strings on this album are almost entirely analogue. I loved Kitty Empire's line about this: "Throughout, the strings on RAM are made of catgut, not 1s and 0s." Empire wrote in *The Guardian*, "and on Fragments of Time there may even be a lap steel guitar sighing". How gorgeously descriptive!

The sonic quality of this album is extraordinary, not least because of the unique recording method, which used a parallel signal chain where every sound was simultaneously recorded twice, both directly into Pro-Tools and also onto 24-track analogue tape, enabling them to use the sound that best-suited the song for the final mix. Producer Mick Guzauski's personal take on the differences between the two was: "The digital was slightly crisper and the transients were better, but in some cases we needed the more laid-back sound of the analogue. The important thing was they had that choice for the entire project." But there was indeed a price tag attached to delivering this extraordinary sonic quality — industry experts say it cost Daft Punk (and Sony) upwards of one million dollars to produce the album.

The Padma is also super-quiet — a highly desirable attribute for an amplifier, of course. That was proved when the listening session moved on to 'Spilt Milk', a truly marvellous and

totally underrated album by a US pop-rock group called Jellyfish that had a brief flirtation with success in the 90s and spawned two albums (of which 'Spilt Milk' was the best). Listening to opener *Hush*, I could easily bask in the silences between the notes and the lush Queen-like vocal harmonies. The lovely silences are again heard on the following track, *Joining a Fan Club*. On *all* of the tracks, however, I could admire how accurately the Padma renders the tonal qualities of the instruments, which were captured perfectly by producer Alby Galuten (famous not only for creating the first commercial drum loop but also for his work on 'Saturday Night Fever'). Apparently the album's title came about because the album was both over budget and behind schedule. (And as an aside, it's interesting how many bands have called themselves Spilt Milk.)

CONCLUSION

The build of the OAD Ultrafidelity Padma is superb. The fit and finish are equally flawless. And, most importantly, its sound quality is very hard to find fault with. Like the company's Vajra, the Padma truly is a jewel of an audio component. And if you get the chance to hear the two in unison, do yourself a favour and seize the opportunity with both hands.

— Greg Borrowman

SPECIFICATIONS

Frequency response: 0Hz–650kHz –3dB

S/N ratio: >110dB A-weighted

THD: <0.001%

Gain: –63dB to +9.7dB

Gain resolution: 0.5dB

Input sensitivity: 80mV

Input impedance: 20kΩ

Output impedance (unbal): <47Ω

Output impedance (bal): <100Ω

Main output level (unbal): 0.775V

Main output level (bal): 1.55V

Maximum output: >20VRMS

Overload margin: 40dB

Dimensions (hwd): 126 x 438 x 353mm

Weight: 13kg

CONTACT INFO

Brand: OAD (Open Audio Designs)

Ultrafidelity

Model: Padma

RRP: \$POA

Warranty: Three years

Distributor: OAD Ultrafidelity Pty Ltd

Address: Lawson Way

Endeavour Hills

Vic 3802

T: 0468 473 229

E: oad@oadultrafidelity.com

W: www.oadultrafidelity.com

Laboratory Test Report

Readers interested in a full technical appraisal of the performance of the OAD Padma preamplifier should continue on and read the LABORATORY REPORT published on the following pages. 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.

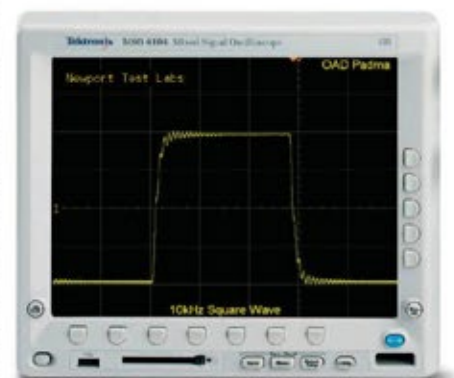
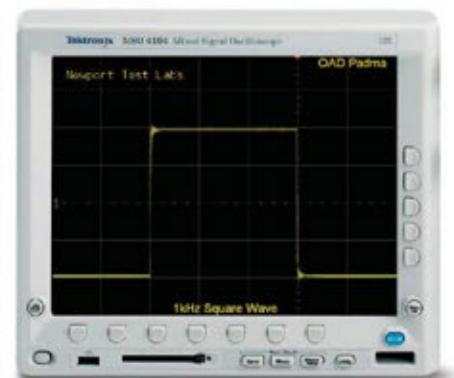
Graph 1 shows the THD of the OAD Padma when it's delivering one volt out (at its balanced outputs). As you can see for yourself, all distortion components except for the third harmonic, which is sitting at -99dB (0.0011%), are more than 100dB down (0.001%). Indeed, the second harmonic is at -111dB (0.0002%), the fourth harmonic is at -115dB (0.00017%), and all other harmonic distortion components are more than 120dB down (0.0001%).

The other 'spikes' (signals) you can see on the graph are not related to the test signal and appear to be sub-bands from a signal outside of the audio band — you can see the pattern repetition most obviously in the way groups of three equally spaced signals appear on the graph between 4kHz and 6kHz , then again between 6kHz and 8kHz , and again between 8kHz and 10kHz , and between 10kHz and 12kHz . None of these would be audible as they're too low in level to be above the noise floor of your listening room. And, as you can see from the tabulated figures, the overall THD was measured at 0.008% (again, at one volt).

Graph 2 shows CCIF intermodulation distortion, with the two test signals (at 19kHz and 20kHz) as the peaks to the right of the centre of the graph. All intermodulation distortion products are more than 100dB down (0.001%), and the difference signal at 1kHz is down at -116dB (0.00015%) which is much lower than usual. Again, there are sub-band signals present in the output; here they're almost entirely more than 110dB down (0.0003%) and so also would not be audible above the noise floor of your room.

The frequency response of the OAD Padma preamplifier is shown in Graph 3. You can see that it's ruler-flat from 10Hz out to 4kHz , even with the graph's scale set at just 0.5dB per horizontal division. Above 4kHz it rolls off so slowly that the response is just 0.5dB down at 40kHz . This graph shows that the normalised tabulated audio band response measured by Newport Test Labs is 20Hz to $20\text{kHz} \pm 0.1\text{dB}$, and the 5Hz to 40kHz response is $\pm 0.25\text{dB}$. These upper and lower frequency limits are the limits of the analyser used to make the measurement and create the graph.

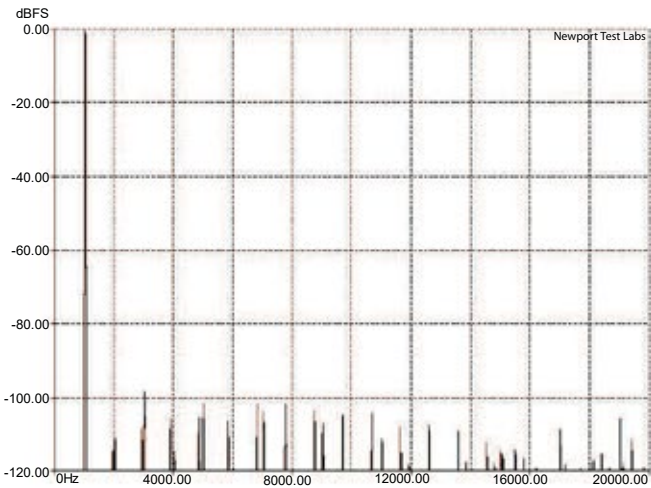
Channel balance was outstandingly good at just 0.005dB , which we think is the best we have ever seen



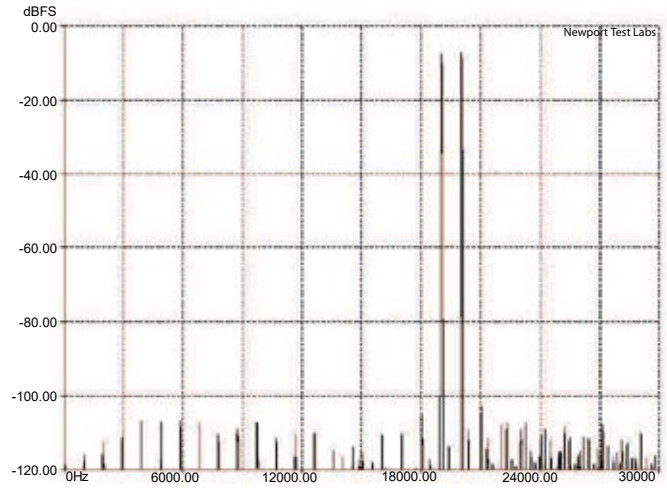
You can see from the tabulated results that the overall frequency response of the OAD Padma measured by the lab is $<0.5\text{Hz}$ to $50\text{kHz} -1\text{dB}$ and $<0.5\text{Hz}$ to $102\text{kHz} -3\text{dB}$. All of these frequency responses are excellent, being far more linear and extended than would ever be required, even for hi-res audio sources.

Graph 4 shows the Padma's response to a multi-tone test signal, where it's required to reproduce 20 different frequencies at exactly the same level, and you can see that it sailed through this difficult test. Note that the individual tones are not supposed to reach the 0dB point on the graph — they're all reproduced at the correct level. As you can see, although there are some unwanted sub-band signals, they are all higher than 2kHz in frequency and more than 100dB below the reference level.

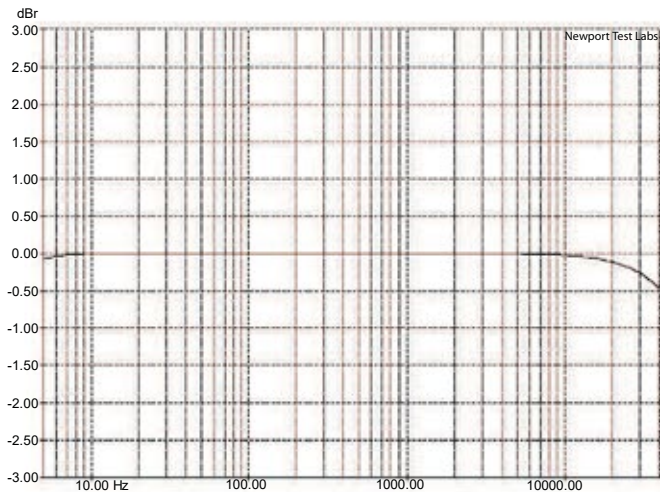
It wasn't only the Padma's frequency responses that were excellent, either. The



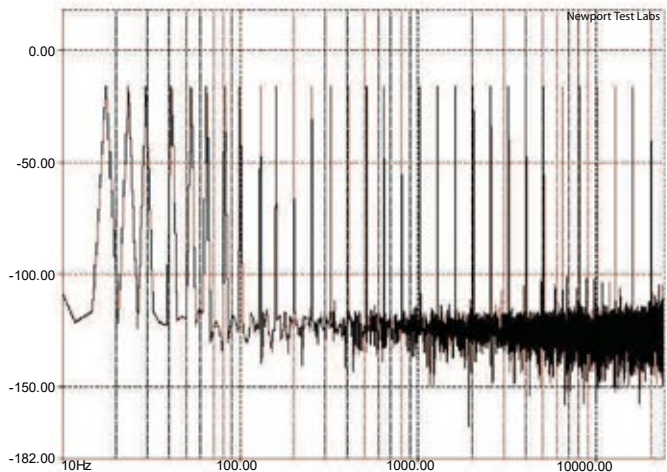
Graph 1. Total Harmonic (THD) at one volt out.



Graph 2. Intermodulation Distortion (CCIF) 19kHz/20kHz 1:1 at one volt out.



Graph 3. Frequency Response at one volt out.



Graph 4. Multitone Response (Logarithmic) at one volt out.

channel balance was outstandingly good at just 0.005dB, which we think is the best we have ever seen. The channel separation was also outstanding, with the OAD Padma returning

results of 125dB at 20Hz, 123dB at 1kHz and 112dB at 20kHz. These results are all good, but the one at 20kHz is exceptionally good. Inter-channel phase errors were very, very low,

being virtually non-existent at 20Hz (0.01°) and just 1.13° at 20kHz.

Newport Test Labs' results for signal-to-noise ratios are well below OAD's claim of 110dB, most likely because the company is referencing its measurement to the Padma's maximum output voltage, whereas *Newport Test Labs'* results of 84dB unweighted and 90dB A-weighted were obtained with a one-volt input and a one-volt output (unity gain), while its results of 90dB unweighted and 96dB A-weighted were obtained with a two-volt input and a two-volt output. If *Newport Test Labs* had referenced to the maximum output voltage it measured the Padma as being capable of delivering (17.2 volts), the A-weighted signal-to-noise ratio would have been 114.6dB.

The input sensitivity of the OAD Padma for an output of one volt was measured as being 129mV using the balanced inputs and outputs, which means overall gain was 17.8dB.

Power consumption during operation was low, with *Newport Test Labs* measuring it as 9.49 watts. Power factor was +0.707.

Steve Holding

OAD Padma preamplifier – Laboratory Test Results

Test	Measured Result	Units/Comment
Frequency Response @ 1 volt o/p	<0.5Hz – 50kHz	-1dB
Frequency Response @ 1 volt o/p	<0.5Hz – 102kHz	-3dB
Channel Separation (dB)	125dB / 123dB / 112dB	(20Hz / 1kHz / 20kHz)
Channel Balance (Direct/Tone)	0.005	dB @ 1kHz
Interchannel Phase (Direct)	0.01 / 0.06 / 1.13	degrees (20Hz / 1kHz / 20kHz)
THD+N	0.008%	@ 1-volt
Signal-to-Noise (unwghted/wghted)	84dB / 90dB	dB referred to 1-volt output
Signal-to-Noise (unwghted/wghted)	90dB / 96dB	dB referred to 2-volts output
Input Sensitivity for 1-volt out	129mV	(Balanced In/Out)
Gain	17.8dB	@1kHz
Maximum Output	17.2V	@1kHz
Power Consumption	9.49	watts (On)
Power Factor	+0.707	
Mains Voltage Variation during Test	239 – 242	Minimum – Maximum