



QUAD II-eighty

Monobloc Power Amplifier

If I had to name a perennial brand that truly represented the birth of high-end audio, QUAD (Quality Unit Amplifier, Domestic) would be the first brand that would come to mind. From the ever-evolving and fanatically-treasured ESL-57 electrostatic speaker—first introduced in 1957 and considered by many to be the best-ever speaker—to the recently revived and revamped Quad II-eighty amplifier, the Quad brand can accurately boast of having designed ‘true classics’.

Old is New Again

The Quad II-eighty is a revitalised and more powerful version of Quad founder Peter Walker’s 1950s original classic, the Quad II (a current version of that amplifier, known as the Quad II ‘Classic’, is available with very a similar output power rating), but now given a circuit make-over and a strong dosage of steroids via valve wonder-engineer Tim De Paravicini. De Paravicini’s way with valve designs is world-renowned, not only for what he’s done here for Quad, but also by way of products issuing from his own highly-respected design house; Esoteric Audio Research (EAR).

Tim has done away with the original Quad II’s KT-66 output valves and has adapted the KT-88 into the re-worked circuit to up the power output from round-about 12-watts to 80-watts. The original industrial design of the original has been retained—even down to the chassis colour and layout—but it now benefits from contemporary assembly and finishing methods, upgraded internal componentry, and higher-grade connecting hardware.

Quad’s current flagship valve design has some pretty decent specifications based on the four KT-88s per channel, driven by a pair of 6SH7s and rectified by a single 5U4G valve. The new high-power KT-88 output stage is rated at 80-watts and the input sensitivity is 1 volt RMS. Rated frequency response is a quite impressive 10Hz to 30kHz –0.5dB. THD is quoted at 0.5% at the rated power. Input is via high-quality single-ended RCA terminals and the speaker outputs source from independent transformer taps at 4Ω and 8Ω via gold-plated multi-way banana-capable terminals. A standard earthed 240V IEC receptacle with integrated mains fuse allows the use of after-market power leads. I must mention here that the fit and finish of these units is immaculate and very retro-chic.

Performance

The Quad II-eighty embodies all of what *aficionados* have come to expect and love from these classic valve designs. Let’s start at what I rate as the biggest strength at hand here; the sublime midrange. Valve amplification, at its archetypal best, has been treasured for its palpable and life-like presentation of vocals and instruments that live within the midrange of the frequency spectrum. Well, the Quad II-eighty manages to retain this cherished quality in spades.

Whack a male or female vocal track on the CD player (or turntable for those on the Dark Side) and be prepared to be surprised and then delighted by the way the Quad II-eighties can re-create the presence of a voice—in terms of

body, image size, and perspective—within the confines of your listening room. Janis Ian’s growling tone in *Breaking Silence*, B’Jezus lead singer BJ’s nicotine-blues huskiness in *Kangaroo Street Part 2*, and David Sylvian’s almost desperately-profound howl in *God’s Monkey*, come across the divide of time and space to seemingly appear between the speakers—the rest of the system permitting.

Similar degrees of clarity and presence were to hand when playing musically complex music; the amplifier’s alacrity and vividness combine to present an unravelled and yet resolved mix of instruments that was always musically satisfying. Yet this high level of resolution comes teamed with a warmth that enhances the body of the music without turning it into a ‘sugary’ mush.

Sonic excellence continues up higher in the frequency range, with the Quads’ refined sound making all treble information come across cleanly and without a trace of hardness or grain. Treble harmonics, as heard within the post-note decay of cymbals and bells, seemed unimpeded in terms of extension and clarity.

I have always maintained that two of the most important elements that help create a more believable facsimile of reality are dynamic contrast and accuracy in instrumental and vocal tonality. From top to bottom, the Quad amplifiers’ delivery of timbre is spot-on. Instruments sound like the ‘real thing’. What’s more, be it guitar, piano or percussion, the sound is lush and vividly textured.

The Quad II-eighty’s handling of bass fre-

be sure, but I'd be willing to bet they'll lack midrange and top-end magic—areas where this design excels.

Here is a revamped and re-engineered version of an amplifier with an enviable heritage; the Quad II. Tim De Paravicini has taken the classic Peter Walker design, modernised the assembly and cosmetics, elevated the power output and updated its sonic qualities. Effectively, De Paravicini has retained the legacy midrange magic and has improved the overall sonic and physical package to an extent that would make Peter Walker proud. With the Quad II-eighty, excellence has become truly immortal. **Edgar Kramer**

Edgar Kramer

Readers interested in a full technical appraisal of the performance of the Quad II-eighty Monobloc Power Amplifier 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.

Brand: QUAD
Model: II-eighty
Category: Power Amplifier
RRP: \$14,499 (Pair)
Warranty: Five Years
Distributor: Audio Visual Revolution Pty Ltd
Address: 30/398 The Boulevard
Kirrawee, NSW 2232
T: (02) 9521 4844
F: (02) 9521 4222
E: info@avrevolution.com.au
W: www.avrevolution.com.au



- High power
- Sublime mids
- A true classic



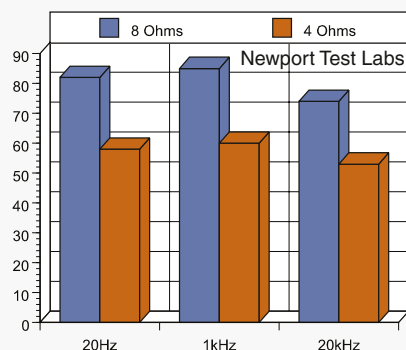
- Power-hungry
- Hot casing
- Pricey

Test Results

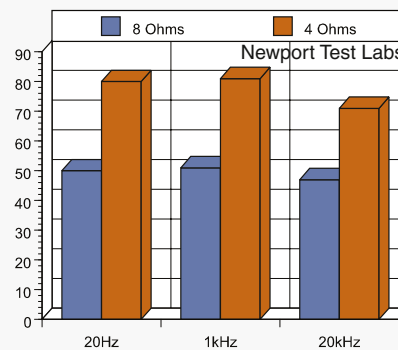
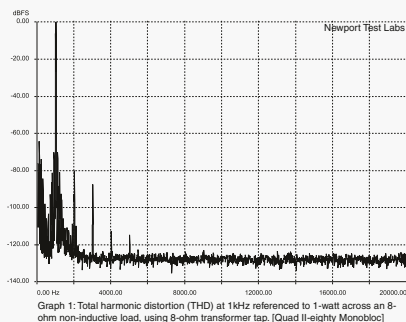
There can be no doubt that Quad has ramped up the power output considerably over the original Quad II, with the new Quad II-eighty delivering slightly more than its rated output of 80-watts continuous per channel at 1kHz into both 4Ω and 8Ω loads. You can see that for an 8Ω load connected to the 8Ω transformer tap, the Quad II-eighty we tested delivered 85-watts. For a 4Ω load across the 4Ω tap, the Quad II-eighty delivered 81-watts. *Newport Test Labs* discovered that under the same conditions, the Quad II-eighty delivered 82-watts at 20Hz (8Ω) and 80-watts at 20kHz (4Ω). Output fell slightly at the other frequency extreme, with the Quad II-eighty delivering 74-watts into 8Ω (8Ω tap) and 71-watts into 4Ω (4Ω tap) at 20kHz. You can see from the dBw columns on the table that the difference is a mere 0.3dB for the 8Ω figure, and 0.5dB for the 4Ω figure, so in practical terms, it would be impossible to detect any difference in output level merely by listening. Note that the lab also ran extra sets of results to show power output in the event of a transformer tap/speaker load impedance mismatch. This shows that to maximise power output, you're better to use the Quad's 8Ω terminals, even if your speakers are rated at 4Ω. It's only if your speakers' nominal impedance is less than 4Ω that I would recommend using the 4Ω tap.

The frequency response of the Quad II-eighty was flat and extended. The tabulated figures show the -1dB response extended from 4.2Hz to 41kHz (which could be otherwise written as 4.2Hz to 41kHz ± 0.5 dB) and that the -3dB response (also known as the 'half power' response) was 2.4Hz to 68kHz. The graphed performance (shown in *Graph 7*) reflects this, though the exaggerated vertical scaling means that you can't see the tabulated down points. The red trace on this graph shows the Quad II-eighty's frequency response when driving a load that simulates that of a loudspeaker, rather than into an ordinary non-inductive resistive load (the black trace). You can see the usual interaction you'd expect from an amplifier with a high output impedance—which a valve amplifier certainly is! However, you can also see that the variation between 5Hz and 30kHz is no more than ± 0.25 dB (the peaks at 70Hz and 2kHz) on the positive side, and that on the negative side the trace falls to just -0.9dB (5Hz) and -0.5dB (30kHz). This is excellent performance.

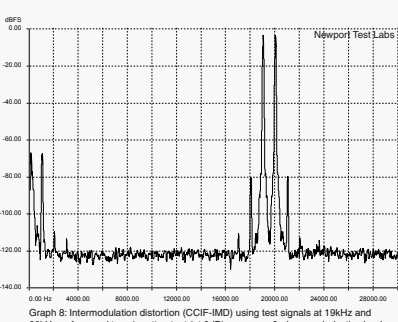
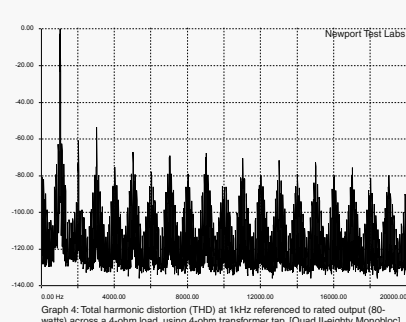
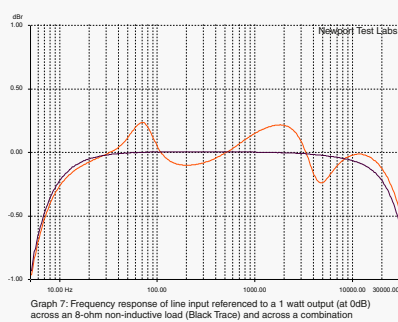
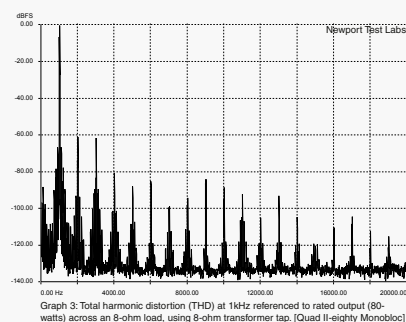
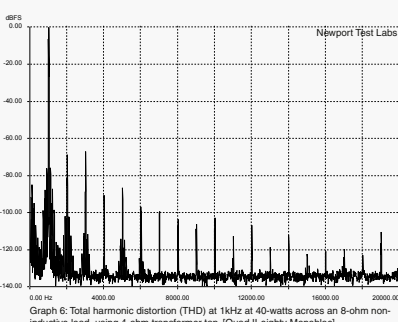
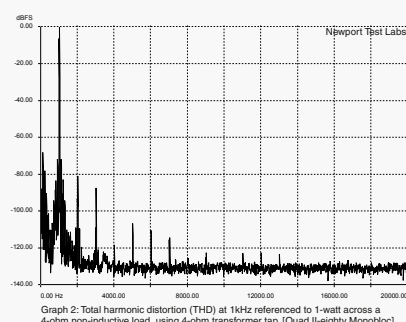
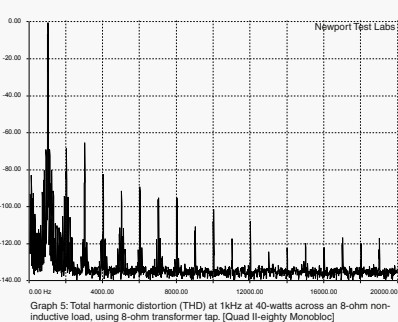
Distortion at 1kHz at 1-watt was relatively low, for both 8Ω and 4Ω loads, as you can see from *Graphs 1 and 2*. The spectral 'fingerprint' was also virtually identical, with a second harmonic component at -80dB (0.01% THD) and a third harmonic at -88dB (0.003% THD). There are two higher harmonics visible on *Graph 1*, but both are more than 110dB down. *Graph 2* shows a few more harmonic distortion components, but all save for the 5th (at -108dB) are also more than 110dB down.



Power Output with Quad II-eighty driving 8-ohm and 4-ohm loads from 8-ohm transformer tap.



Power Output with Quad II-eighty driving 8-ohm and 4-ohm loads from 4-ohm transformer tap.



Considerable distortion is visible in the two graphs showing the output spectrum at rated output, but the main contributors to overall sound would be the first few harmonics. In *Graph 3*, the second and third harmonics are around -60dB (0.1% THD) while the upper harmonics fall between -80dB and -100dB ($0.01\text{--}0.001\%$). *Graph 4*, which shows output into 4Ω , has the third harmonic at -55dB (0.17%) and the upper harmonic components falling between -70dB and -80dB ($0.03\text{--}0.01\%$). The myriad vertical lines on both graphs reveal that the power supply is working very hard when delivering these high power levels, and particularly so at 4Ω , because of the additional current required by the lower load impedance.

Reducing the output to 40-watts resulted in the output spectrums shown in *Graph 5* (8Ω) and *Graph 6* (4Ω). You can see that the power supply isn't under nearly so much stress, but that the spectral fingerprint remains

creating a signal at 1kHz at -50dB (0.31%). Overall THD+N was lower than specified for the Quad II-eighty, coming in at 0.04% for an output at 1-watt and 0.08% at rated output. The A-weighted signal-to-noise ratio referenced to rated output was an excellent 100dB , but the disparity between this and the unweighted figure indicates the presence of low levels of residual mains hum.

Input sensitivity figures were excellent, with the voltage required for rated output coming in virtually bang on specification, and only 115mV required to deliver 1-watt across 8Ω . However, the Quad II-eighty will use quite a lot of your 240V mains power, no matter how loud you're playing your music—indeed even if you're not using it at all, but have merely left it switched on. You can see from the power consumption figures that the Quad will draw between 210 and 235-watts no matter what you're doing. Remember also that these figures are for a mono amplifier—you'll

for more than an hour), the protective caging above the valves became far too hot to touch. I subsequently discovered that although it doesn't get this hot under normal day-to-day use, it certainly becomes sufficiently warm that you wouldn't want to leave your hand on it for more than a couple of seconds!

The square wave performance of the Quad II-eighty was excellent. The 100Hz wave shows the expected tilt (you're not going to get d.c. out of a transformer!) and only the very slightest curvature indicating some phase shift. The 10kHz wave is laudable for its extremely fast rise time—amazingly good performance from a valve amplifier and the 1kHz wave only a little ringing. Performance into a highly capacitive load was something of a surprise—I am not used to seeing such pronounced initial overshoot from a valve amplifier (to almost half wave-height), but it was quickly damped and subsequently fully controlled.

Power Output	Load (Ω)	100Hz	1kHz	10kHz	20kHz	THD+N	THD+N
(Watts)		(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
40	8	92	91	85	80	10.7	10.7
20	4	84	83	77	72	10.7	10.7
10	8	80	79	73	68	10.7	10.7
5	4	76	75	69	64	10.7	10.7

Test	Measured Result	Units/Comment
Frequency Response @ 1 watt	4.2Hz–41kHz	–1dB
Frequency Response @ 1 watt	2.4Hz–68kHz	–3dB
THD+N	0.04% / 0.08%	1 watt/rated o/p
S/N Ratio (unweighted/weighted)	64dB/80dB	dB re 1 watt output
S/N Ratio (unweighted/weighted)	83dB/100dB	dB re rated output
Input Sensitivity	115mV/1.03V	(1 watt/rated o/p)
Power Consumption	N/A/208 watts	Standby/On
Power Consumption	210 watts / 235 watts	1-watt/Rated op
Mains Voltage Variation	239–247 volts	Min–Max

essentially the same as it is when the amplifier is operated at rated power. Many audiophiles claim that it's this 'spectral footprint'—along with the inevitable valve microphony—that is responsible for the sonic superiority of valve amplifiers over their solid-state counterparts. Another reason for perceived sonic difference is evidenced by the result shown in *Graph 8*, where intermodulation effects have resulted in the two test signals (at 19kHz and 20kHz)

have to double them for stereo. My advice is to switch the amplifier(s) off whenever you're not using them to conserve power, and to extend the life of your valves.

Switching the amplifiers off will also stop you from contributing to global warming, because *Newport Test Labs* added a notation to the test result sheet to the effect that during the power output tests, (which require the amplifier to deliver rated output continuously

Having recently tested a vintage Quad II (completely restored) I am in the happy position of being able to report from personal experience not only that the performance of this new Quad II-eighty is in every way improved over the original, but also that the Quad II-eighty delivers excellent performance for any valve amplifier... period.

Steve Holding

