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MUSIC MAESTRO PLEASE!

We review Audio Analogue's Maestro Anniversary

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AUDIO ANALOGUE MAESTRO ANNIVERSARY INTEGRATED AMPLIFIER

It's an amplifier of lights, but not a light amplifier. A cryptic clue? No, just a prosaic introduction to this review of the Audio Analogue Maestro Anniversary, reflecting the fact that all its operating functions are indicated by lights and light patterns glittering on the front panel and that the amplifier is exceedingly heavy, weighing in at 31kg. As for the name, the 'Anniversary' celebrates both Audio Analogue's twentieth anniversary as a company and the 15th anniversary of the first Maestro amplifier.

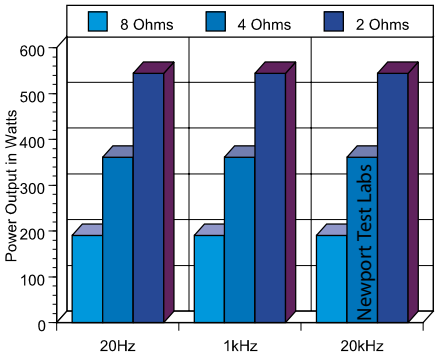
THE EQUIPMENT

Its weight alone should indicate that the Maestro Anniversary is a 'classic' Class-AB design, using a linear power supply equipped with transformers and large storage capacitance… to be precise, two 600VA transformers and a total capacitance of 67,200µF, plus rectification managed by discrete ultra-fast diode bridges with 50-amp ratings.

Although it's a stereo amplifier, the two channels are totally electrically separate from each another. The only circuit they share is the volume control circuit, and this is optically isolated from both of them. In other words, a true 'dual mono' integrated amplifier.

Air Tech, which designs and manufactures Audio Analogue equipment entirely in Italy, near Pisa (the one of the famous leaning tower), says the Maestro Anniversary is '*based on the Puccini Anniversary amplifier's circuitry*', except that internally it uses fully balanced circuitry from the input to the power stage, after which an unbalanced signal is used to drive the loudspeakers. According to Air Tech, the power stages use four pairs of transistors per channel in an inverted cascode arrangement that eschews global feedback and is held stable by d.c. servo circuitry.

The Maestro has five line-level inputs. Inputs numbered 1, 2 and 3 are unbalanced and accessed via gold-plated RCA sockets. Inputs 5 and 6 are balanced and accessed via XLR inputs. Input selection is accomplished via the huge rotary controller/volume control on the front panel, or by using the supplied remote control. If using the front panel control, you push and hold for three seconds, after which it can be rotated to choose input. Push for too long (five seconds) though, and you'll turn the amplifier off, after which a short push will be required to turn it back on. If you rotate it to increase volume, the line of LEDs to the right will switch on, and form a line whose length is indicative of the volume level. The scaling of the length of the LED 'string' can be switched through four different options, one that will suit most speakers, another specially for high-efficiency speakers, yet another one that gives more control over volume at the midpoint of operation and one that switches volume linearly in dB. (There is a 'fifth' option, but it's direct mode, and operates at maximum output continually, so really not an option at all.)



Power Output Test Result Graph: Single channel driven into 8-ohm, 4-ohm and 2-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [Audio Analogue Maestro Anniversary Integrated Amplifier]

The same LEDs also show other functions, including balance and LED brightness setting (three levels available). But the most interesting LED function is that if the amplifier goes into self-protect mode, the particular LED that illuminates will show the specific reason the protection circuit operated. If the first and/or second LEDs glow, for example, the problem was over-temperature. The third and fourth LEDs glowing mean the problem was direct current at the output, the fifth LED indicates an issue with the positive power supply on the right channel, the sixth suggests an issue with the negative power supply… and so on.

The five LEDs to the left of the volume control show the selected input, while the sixth LED, at the extreme left, shows power status (standby/on) by glowing red (standby) or extinguishing (operational).

The remote is very, very classy, being carved from a block of solid aluminium and nice and chunky, yet small enough (45×140×23mm) to nestle in the palm of your hand. It takes two AAAs, and Air Tech fits good-quality alkalines as standard. The remote has buttons for input switching and volume control, plus a 'Mute' button, a 'Standby' button and a 'Set-up' button. This last is used to set the volume scaling, LED brightness, and channel balance.

Our photograph does not really give a sense of the size and scale of the Maestro Anniversary. It's huge! To hang some numbers on that, it measures 168×450×550mm (HWD) and weighs 31kg. This not-inconsiderable weight, combined with the very sharp heat-sink fins running down either side of the amplifier mean it's very much a 'two-person' job to lift and position, whether on a floor or on a rack, not least because Air Tech provides no handles of any kind.

> *The Maestro absolutely revelled in delivering the music so that it was always paced 'just right'*

IN USE AND LISTENING SESSIONS

Installation is straightforward, not least because the Maestro has excellent speaker terminals that make wiring very easy. (Don't take the colour-coded wing-nuts off though, because these are the only way of identifying the '+' and '–' terminals. Air Tech should look at engraving this important information into the rear panel.)

Using the front panel volume control is very tricky, because it has a super-smooth highly-polished surface that slopes away from your fingers, so there's nothing to help you turn it… and if you apply pressure to help turn it, you can potentially inadvertently turn the amplifier off, or switch the control to its 'input selection' mode. I found it so tricky to use that I ended up using the remote control exclusively… but you may have a more delicate touch than me, or 'stickier' fingers.

However, using the remote was also occasionally frustrating. The 'mute' button does exactly what it says, muting the volume (by 75dB, so not a complete mute, but close enough) but while the amplifier is muted, you can't switch inputs, adjust volume or go into set-up mode. You can go into standby mode while the amplifier is muted, but coming out of standby restores 'normal' operation (i.e., it disables the muting). Another frustration is that there's no front-panel indication that muting is enabled. Surely one of those 21 LEDs could have been assigned this task? (The volume LEDS do extinguish when the amplifier is muted, but this doesn't help if the volume is set to zero when you mute, because there'd be no LEDs showing in the first place). A final minor frustration I had is that when using the remote, it took around one second to switch from one input to another, because you have to wait for relays to settle before the microprocessor accepts a second

The Maestro Anniversary is a 'classic' Class-AB design, using a linear power supply equipped with transformers and large storage capacitance... to be precise, two 600VA transformers and a total capacitance of 67,200µF, plus rectification managed by discrete ultra-fast diode bridges with 50-amp ratings.

> *The Maestro is a magnificent amplifier in every sense of the word.*

push of the Input '+' or Input '–' buttons.

But I accept this tiny delay frustration is more of a 'reviewer' issue than an 'owner' issue, because only reviewers want to switch rapidly from input to input.

I kicked off my sessions with the Maestro by continuing my listening affair with Amarillo's debut album 'Eyes Still Fixed', all of whose nine tracks deliver gorgeous soundscapes, some of which are decidedly Ry Cooder-ish (some reviewers describe the band's style as 'Americana'). Underpinning everything are Nick O'Mara's guitar-playing (I just love the sound of his lap steel) and the voice of Jac Tonks, but not forgetting Alex Rogowski (percussion) and Trent McKenzie (bass). Tonks' wordless vocals on the title track are perfectly pitched and the way the layers build, both of her voice and the accompanying instruments, is mesmerising… and all delivered perfectly transparently by the Audio Analogue Maestro Anniversary.

Jumping into to an even-more complex soundscape, the Maestro absolutely excelled itself re-creating the music of the late Murray McNabb, whose life has been recently celebrated on a double LP (plus digital download) titled 'The Way In is The Way Out'. New Zealander McNabb was across all genres and you get a great cross-section of his work on this album: solo, with his trio and in other settings. The Maestro absolutely revelled in delivering the music so that it was always paced 'just right' and tonally immaculate. Turning the volume up just increased the feeling of emotional involvement with the music to live performance levels and the Maestro was never found wanting, no matter how dynamic the music became… and there's a lot of enthusiastic percussion here, from Frank Gibson Jnr and others… including Adam Nussbaum, no less!

CONCLUSION

Italians are famous for their idiosyncratic designs, and they certainly make Italian products unique. And yes, some of the design choices on the Audio Analogue Maestro Anniversary are definitely idiosyncratic—not least that 'hard-to-turn' volume control, but they're all idiosyncrasies you could learn to love, because the Maestro is a magnificent amplifier in every sense of the word.

Jutta Dziwnik

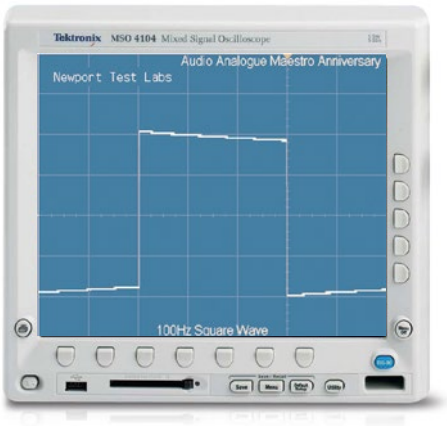
AUDIO ANALOGUE MAESTRO ANNIVERSARY INTEGRATED AMPLIFIER

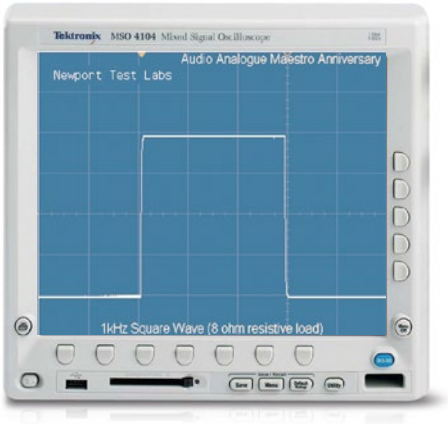
Brand: Audio Analogue
Model: Maestro
Category: Integrated Amplifier
RRP: $12,300
Warranty: Two Years
Distributor: Absolute HiEnd
Address: PO Box 370
Ormond VIC 3204
T: (04) 8877 7999
E: info@absolutehiend.com
W: www.absolutehiend.com

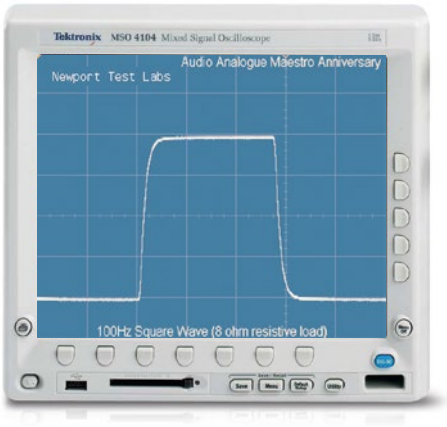
Gorgeous sound
Splendid appearance
Superb build quality

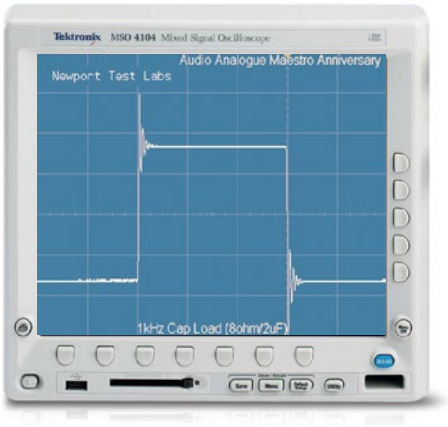
Volume control
Speaker terminal ID
Muting indication

LABORATORY TEST REPORT









The Audio Analogue Maestro Anniversary revealed its 'dual mono' topology during the power output testing, where *Newport Test Labs* found that both channels delivered exactly the same output power, irrespective of whether one or both channels were driven. So for the sake of brevity, I'll mention only the 'both channels driven' power output results, which you can also see in the accompanying power output table and also view in bar graph format.

At 1kHz, with both channels driven, the Audio Analogue Maestro Anniversary delivered 190-watts per channel into 8Ω, 361-watts into 4Ω and 544-watts into 2Ω. All are good results and all are above specification. But if you look at the results at 20Hz and 20kHz, you'll find that the Maestro was also able to deliver exactly the same very high output levels at the frequency extremes. This is very rare—particularly at 20Hz—and so is a truly outstanding result for this amplifier.

Distortion at 1kHz at an output of one watt is shown in Graph 1 (for an 8Ω load) and in Graph 2 (for a 4Ω load). The distortion is obviously lower into the 8Ω load, with just a second harmonic at –94dB (0.0019%), a third harmonic at –87dB (0.0044%), a fifth at –95dB (0.0017%) and a seventh at –102dB (0.0007%). The noise floor is for the most part down at around –110dB, though the signals at the extreme left show some low-frequency noise components related to the amplifier's power supply. Interestingly the noise floor drops to –120dB when the amplifier is driving the 4Ω load, but many more harmonic distortion components are evident, the most significant of which is the third harmonic at –60dB (0.1%). The other low-order components are all hovering around –90dB (0.0031%) while the sixth and higher-order harmonics are all below –100dB (0.001%).

At rated output power the distortion spectrum is roughly the same for both 8Ω and 4Ω loads, so I'll look only at the 8Ω graph, which shows a second harmonic at –74dB (0.0199%), a third at –56dB (0.1584%) and a fourth at –81dB (0.0089%). The next 14 harmonic distortion components almost

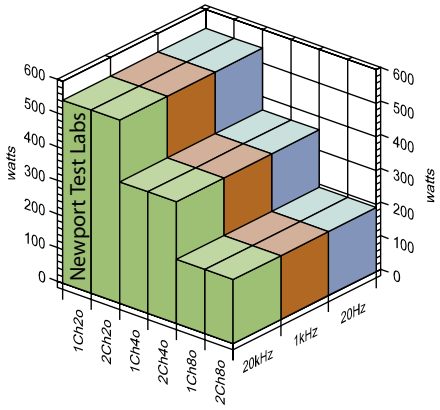
Audio Analogue Maestro Anniversary – Test Results – Power Output

Channel	Load (Ω)	20Hz (watts)	20Hz (dBW)	1kHz (watts)	1kHz (dBW)	20kHz (watts)	20kHz (dBW)
1	8 Ω	190	22.8	190	22.8	190	22.8
2	8 Ω	190	22.8	190	22.8	190	22.8
1	4 Ω	361	25.6	361	25.6	361	25.6
2	4 Ω	361	25.6	361	25.6	361	25.6
1	2 Ω	544	27.4	544	27.4	544	27.4
2	2 Ω	544	27.4	544	27.4	544	27.4

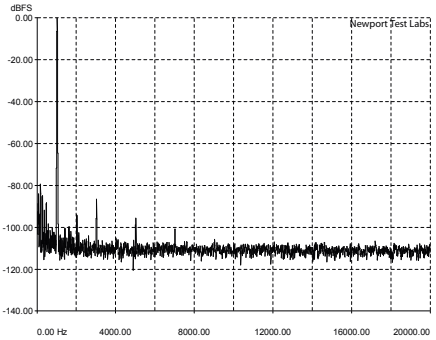
Note: Figures in the dBW column represent output level in decibels referred to one watt output.

Audio Analogue Maestro Anniversary – Laboratory Test Results

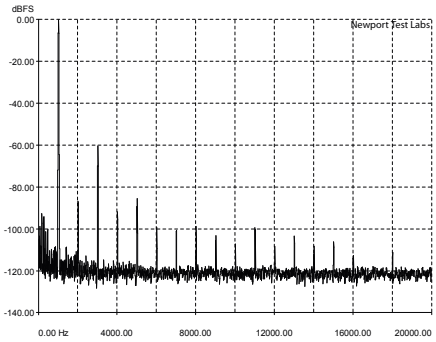
Test	Measured Result	Units/Comment
Frequency Response @ 1 watt o/p	5Hz – 51kHz	–1dB
Frequency Response @ 1 watt o/p	2.5Hz – 90kHz	–3dB
Channel Separation (dB)	105dB / 80dB / 71dB	(20Hz / 1kHz / 20kHz)
Channel Balance (Direct/Tone)	0.07	dB @ 1kHz
Interchannel Phase (Direct)	0.02 / 0.01 / 0.11	degrees (20Hz / 1kHz / 20kHz)
THD+N	0.01% / 0.01%	@ 1-watt / @ rated output
Signal-to-Noise (unwghted/wghted)	74dB / 80dB	dB referred to 1-watt output
Signal-to-Noise (unwghted/wghted)	92dB / 100dB	dB referred to rated output
Input Sensitivity	52mV / 635mV	(1-watt / rated output)
Output Impedance	0.16Ω	at 1kHz
Damping Factor	50	@1kHz
Power Consumption	0.96 / 117	watts (Standby / On)
Power Consumption	132 / 690	watts at 1-watt / at rated output
Mains Voltage Variation during Test	239 – 251	Minimum – Maximum



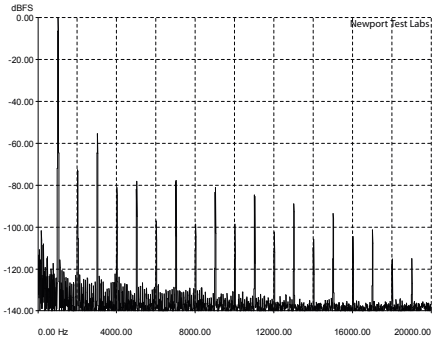
Power Output: Both channels driven into 8-ohm, 4-ohm and 2-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [Audio Analogue Maestro Anniversary Integrated Amplifier]



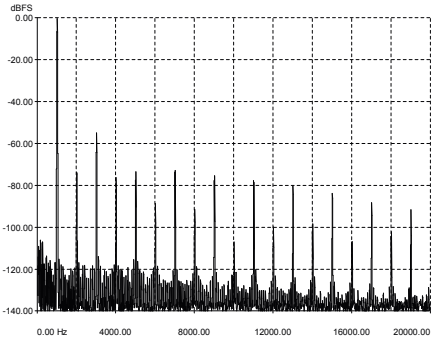
Graph 1: Total harmonic distortion (THD) at 1kHz at an output of 1-watt into an 8-ohm non-inductive load, referenced to 0dB. [Audio Analogue Maestro Integrated Amplifier]



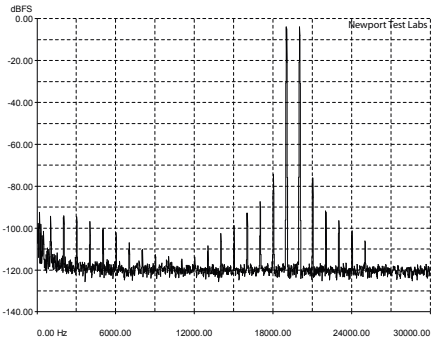
Graph 2: Total harmonic distortion (THD) at 1kHz at an output of 1-watt into a 4-ohmnon-inductive load, referenced to 0dB. [Audio Analogue Maestro Integrated Amplifier]



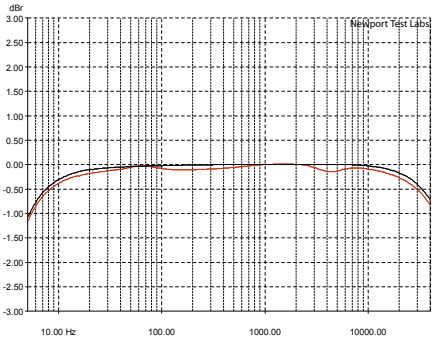
Graph 3: Total harmonic distortion (THD) at 1kHz at an output of 150-watts into an 8-ohm non-inductive load, referenced to 0dB. [Audio Analogue Maestro Integrated Amplifier]



Graph 4: Total harmonic distortion (THD) at 1kHz at an output of 300-watts into a 4-ohm non-inductive load, referenced to 0dB. [Audio Analogue Maestro Integrated Amplifier]



Graph 5: Intermodulation distortion (CCIF-IMD) using test signals at 19kHz and 20kHz, at an output of 1-watt into an 8-ohm non-inductive load, referenced to 0dB. [Audio Analogue Maestro Integrated Amplifier]



Graph 6: Frequency response of line input at an output of 1-watt into an 8-ohm non-inductive load (black trace) and into a combination resistive/inductive/capacitive load representative of a typical two-way loudspeaker system (red trace). [Audio Analogue Maestro Int. Amplifier]

alternate between –80dB/0.01% (odd order) and –90dB/0.0031% (even order). The noise floor has dropped to around –140dB at both impedances, except at low frequencies. The 'grass' on the noise floor reflects the stress on the power supply caused by the high output levels. Intermodulation distortion (Graph 5) shows a regenerated difference signal at 1kHz that's 95dB down (0.0017%), and the sidebands either side of the test signals are 75dB down (0.0177%).

Looked at in total, the slightly higher-than-normal distortion results (at least for a solid-state amplifier) are presumably because whereas most amplifier manufacturers use negative feedback to reduce distortion, Air Tech says it isn't using any feedback at all (the company claims the Maestro is a 'zero feedback' design).

Frequency response across the audio band was excellent, with *Newport Test Labs* measuring it as 20Hz to 20kHz ±0.13dB, no matter whether the amplifier was driving a standard non-inductive 8Ω laboratory test load (black trace on Graph 6) or a load that simulates one that would be presented by a typical loudspeaker (red trace). The frequency response was 1dB down at 5Hz and 51kHz, and 3dB down at 2.5Hz and 90kHz. This excellent performance is reflected in the results of the square wave testing, which also shows that the Maestro would be completely stable when driving highly reactive loads.

Channel separation was excellent, though the decrease at higher frequencies suggests some capacitive coupling, but it's immaterial, because 71dB at 20kHz is an excellent result for an integrated amplifier.

The A-weighted signal-to-noise ratio of the Maestro was measured by *Newport Test Labs* at 80dB referred to one watt and 100dB referred to rated output. Again, excellent.

The Maestro's output impedance was measured as 0.12Ω at 1kHz, leading to a measured damping factor of 50. This damping factor is still high enough that the Maestro will be able to control the behaviour of even the largest speaker cones. Again, the fact that the Maestro is a 'zero feedback' design is no doubt the reason the factor was not higher.

Audio Analogue's Maestro Anniversary delivered excellent performance on *Newport Test Labs'* test bench. The distortion levels, although higher than on amplifiers using high levels of negative feedback, are similar to that of valve amplifiers, and sufficiently low that they would not be audible, plus you need to factor in this amplifier's impeccable power output results, its extended frequency response, and its low noise, plus the fact that its build quality is simply superb.

Steve Holding