NAGRA CDP

CD PLAYER

Nagra's CDP player is like no other CD player you have seen before, because the front panel display is built into the CD drawer, the front of which does not close flush with the front panel, as with most drawer-style CD mechanisms, but sits proud of it. It's also small… so small that the face of the remote control is almost larger than the front of the CDP.

Open the drawer and you'll see that it is not some piece of extruded plastic plucked from the shelf of an OEM manufacturer, or even a piece of stamped metal. It's a solid slab of aluminium alloy, through which protrudes the CD drive and laser assembly (a Philips CD-Pro2M). This thing is solid, with a capital 'S'—and very obviously assembled by hand.

Once you drop a CD over the drive, you then have to hold it in place by attaching a magnetic clamp. If you don't do this, the Nagra CDP will refuse to play… but it will give you a warning as to why it's not co-operating by showing the words 'No Clamper' in the front panel display.

You can close the drawer by simply pushing it in… though I recommend you don't do this. Far better to close it using the tiny spring-loaded Open/Close toggle switch that pokes through a slot cut in the front panel. The toggle switch you can see on the front panel just to the right of the disc drawer alters the brightness of the display (through six levels). Again, this is a spring-loaded, momentary-contact switch that protrudes through a slot cut into the front panel. The third toggle switch you can see on the front panel is used to fast-forward and fast-rewind through individual tracks, plus it also doubles as a track skip (forward/reverse) control.

The rotary control at the right of the front panel controls the Nagra CDP's other transport functions. It's a bar of aluminium that sits in a 6mm-deep recess in the front panel. In its horizontal (Off) position, it obscures a horizontal red bar underneath it that becomes visible when you rotate the bar clockwise, first to 'Stop', then to 'Pause' and finally to 'Play' (at which point the bar is vertical). The reason for the red bar is to show that the Nagra is 'On'. It's a technique that was used in the early day of electronics, pre-dating the adoption of pilot lights to indicate control status. The person operating equipment using this system only had to glance at, say, an instrument panel, to see which controls were 'On' and which were 'Off' by whether or not a red painted bar was visible.

Of course you don't have to use the Nagra's front panel controls at all if you'd rather not. The CDP (along with all other variants of Nagra's player, about which more later) comes standard with a Nagra RCU-II infra-red remote.

This thing is solid, with a capital 'S'—and very obviously assembled by hand…

This is a multi-function device that will also control other compatible Nagra components. In addition to allowing you to control the basic transport functions of the CDP it enables you to access more advanced playback functions, including programmed play, repeat track, repeat disc, A–B repeat, shuffle play and track scan. It's a very large remote (51mm wide, 25mm deep and 222mm long) and a very heavy one too (it weighs 310g). I particularly liked that I could stand it on its end, which makes it easy to store, easy to pick up, and overall means you're less likely to accidentally misplace it.

The chassis of the Nagra CDP is not moulded or pressed in any way, it's entirely constructed from thick flat sheets of aluminium that are bolted together. It's a technique that's often used to build prototypes, or products not many of which will be built, because it saves tooling costs. It does mean, however, that appearance of the Nagra CDP is like stepping back in time to the 1950s… or even the 1940s. It seems Nagra is celebrating this by deliberately using knobs, switches and controls that are also built in styles that hark back to these times.

If you were thinking that the front panel of the Nagra CDP looks a bit bare, it's because there are three different versions of this player available, and on the 'CDC' version the blank space is occupied by volume and balance controls and an output level meter… or, as Nagra prefers to call it, a 'double modulometer'. The 'CDT' version looks identical to the model reviewed here, but is only a transport and must be used in conjunction with an external digital-to-analogue converter (of which Nagra makes two, the 'Classic' DAC and the 'HD' DAC.)

The rear panel of the Nagra CDP has both balanced (via gold-plated XLR) and unbalanced (via gold-plated RCA) audio outputs as well as three digital outputs: SPDIF (via RCA), Optical (via Toslink), and AES (via XLR). But what's most notable is what isn't there: a 240V power socket. It doesn't have a 240V power socket because you need to use an external power supply to deliver power to the CDP, via a proprietary three-pin socket which is what you can see on the rear panel. It appears that Nagra does not want any high-voltage circuits anywhere near its digital circuitry or low-voltage analogue circuits.

As for that external power supply, you have a range of choices because there are two different external supplies, plus the CDP can also get its power from some other Nagra components, such as the BPS phono preamplifier. Included in the price of the CDP is Nagra's ACPS II, a small single-rail stand-alone power supply that usually retails for $1,695.

You could also power it with a Nagra MPS Power supply, which retails for $9,295, and can supply 12V d.c. power for up to four Nagra components (but only three if one of them is the HD DAC, which requires two separate power supplies to itself). One advantage of using this unit is that it can be fitted with an optional Li-Ion battery, enabling total isolation from the 240V mains. The battery can power the CDP for up to 11 hours. Local distributor Advance Audio supplied the Nagra MPS Power supply for this review, but without the battery fitted, so mains power was used for all the listening sessions and for the testing by *Newport Test Labs*.

IN USE AND LISTENING SESSIONS

The very first thing you will notice about the Nagra CDP is that the disc drawer mechanism is noisy when it's moving inwards and outwards. Very noisy. This was a surprise in part because Nagra says the motor is: '*a state-of-the-art planetary reduction motor: a component developed by a NASA-approved supplier, whose products equipped the Mars Rover robot sent to the red planet.*' It was only after reading this that I realised that a motor designed for use in space doesn't have to be quiet, because you couldn't hear it in space… there's no atmosphere, so no medium for the transmission of sound waves. The only requirements for a motor used in a space program would be that it's accurate and reliable… the manufacturer really wouldn't care how noisy it was. The drawer motor is no doubt accurate (it's accurate to within two microns, according to Nagra) and I have no doubt it is also absolutely and completely reliable… but I do have to tell you that it's 'way noisy… but obviously, once it's done its job of opening the drawer or closing it, it's then as silent as space itself!

As noted at the beginning of this review, a magnetic clamp must be attached manually every time you load a CD. Nagra says that this clamp improves the centring and positioning of the CD on the transport, which is certainly true. However its primary function is to stop the CD from launching itself into the air when the transport spins it up to playing speed (which varies between 200 rpm at the beginning of disc and 500 rpm towards the end). The only issue about drives that use a clamping system is that you have to remember to remove both disc and clamp whenever you transport the player from one location to another. If you don't, it's possible for the clamp to become dislodged and fall inside the player, which in the case of the Nagra CDP will then require you to remove the six screws securing the top plate and extract it manually before you attempt to apply power. This is perfectly safe to do yourself, because there's no 240V power inside the CDP… just 12 volts.

I did appreciate the fact that Nagra has helpfully included some (red!) illumination in the drawer when it's open, which makes it easy to load and unload CDs in a darkened room, but I'd stab a guess that this feature was actually requested by Nagra's own dealers and distributors, who often do their demos in rooms that can be very dark indeed… such as the demo rooms at hi-fi shows!

Loading is quite quick, but the time it takes to load a disc is dependent on the number of tracks on the CD, varying from around six seconds for an 18-track disc to 24 seconds for a 99-track disc.

A state-of-the-art CD player, hand-built in Switzerland, that delivers outstanding sound quality

Once a disc is loaded, other operations (track skip, fast search and so on) are exceptionally fast, and the operations are also buffered, so if you flick the fast forward switch six times in quick succession, the laser will skip six tracks. The only quirk in the transport operation is that the Nagra 'locks out' the 'CD Open' toggle switch so that it won't work unless the transport is stopped, so if a disc is paused or is playing, pressing the CD Open toggle switch doesn't stop play and open the drawer as it normally would with other CD players. I guess that this quirk of operation is just down to the unusual front panel switching.

The sound I heard from the Nagra CDP CD player was outstandingly good. Low frequencies were tight, powerful, and bouncily tuneful, no matter what I played, and the sonic quality of the bass was totally organic… nothing unnaturally electronic here. Listening to well-recorded cello, for example (Steven Isserlis playing Bach's *Cello Suites*) I found the Nagra's pitching was spot-on and the string sound was gloriously real, allowing me to totally appreciate the gorgeous sound Isserlis is able to extract from his cello. If you've passed on these suites in the past for being too ponderous, you'll love Isserlis' faster tempi. Also, the way he is able to voice the chords is truly astonishing… and reproduced to perfection by the Nagra CDP.

But even when reproducing electronica-style bass, with programmed drums and synths and looped bass, the sound was convincingly and realistically 'live', and with rawer, rock-driven sounds, such as Rachel Maria Cox's 'Untidy Lines', the Nagra CDP was able to deliver the true emotion behind the songs, easily demonstrated by listening to the ripping guitar work on *Emotionally Untidy* or the slow burn of *Constellation*.

The clarity and illumination of the Nagra's midrange made listening to large-scale choral works an even-greater pleasure, for the way it made it easier to follow the different sections when singing along, or enjoy the cohesiveness of the whole when just listening to lift the heart, both of which I often do when playing Handel's 'Messiah'. Of all the versions I own, my 'go-to' work is Stephen Layton's wonderful reading for Hyperion… and it's home-grown here in Oz! The delivery of high-frequencies by the Nagra CDP was outstanding, with beautifully intonated upper violin sound on every CD I auditioned… the authenticity of the sound a far cry from the screechy violin delivery of some compact disc players. As for the sound of Simon Barker's shakuhachi on his superb solo album, 'Descalzo', well it was as if the angels were playing in heaven.

CONCLUSION

Nagra obviously would prefer you to partner its CDP CD player with other Nagra components, such as its Classic Preamp and Classic Power Amplifier, but unless you're one of those audiophiles who insists that all the components in your system have to look the same, there is absolutely no reason why you should do this if you have other preferences or priorities for amplification.

So if you'd like a state-of-the-art CD player, hand-built in Switzerland, that delivers outstanding sound quality and has a user interface that will have you smiling with satisfaction every time you interact with it, the Nagra CDP CD player is the one for you.

Andreas Park

Readers interested in a full technical appraisal of the performance of the Nagra CDP CD Player 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.

CONTACT DETAILS

Brand: Nagra
Model: CDP
RRP: $22,195
Warranty: Two Years
Distributor: Advance Audio Australia
Address: Unit 8, 509–529 Parramatta Road
Leichhardt NSW 2040
T: (02) 9561 0799
E: info@advanceaudio.com.au
W: www.advanceaudio.com.au

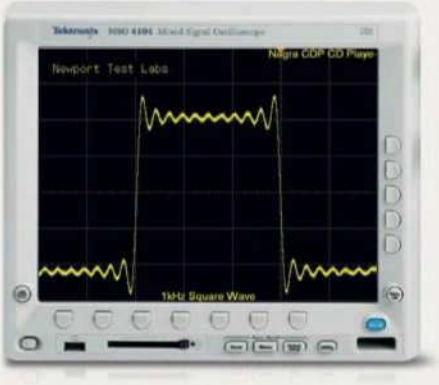
- Great sound
- Truly unique build
- Made in Switzerland

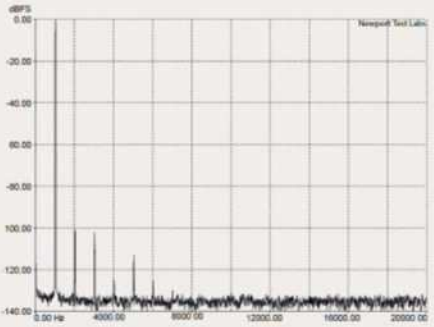
- Noisy drawer mechanism

LABORATORY TEST REPORT

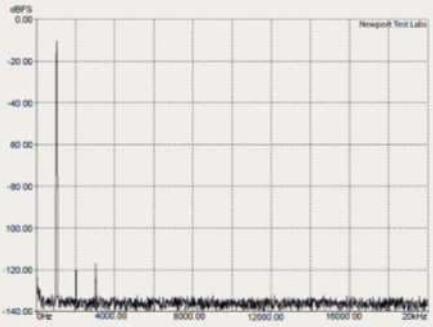
Newport Test Labs measured the output voltage of the Nagra CDP's unbalanced outputs as just over 1 volt, as you can see from the tabulated test results. This will be more than sufficient for all integrated amplifiers, but if you intend to drive a power amplifier directly, you should check that its input sensitivity is lower than 1 volt, otherwise that amplifier won't be able to deliver its rated output power. The output voltage balance between the left and right channels was excellent, at just 0.019dB, and the phase error between the channels was particularly low: only 0.03° at 16Hz and 0.01° at 20kHz. At 1kHz it was perfect: there was no phase error at all between the channels.

The frequency response of the Nagra CDP CD player as measured by *Newport Test Labs* was excellent, with response between 20Hz and 20kHz shown in Graph 9, and you can see it's ruler-flat from 20Hz up to 2.5kHz, after which there's a very gradual roll-off until the trace is 0.18dB down at 20kHz. This puts the normalised frequency response within the audio band as 20Hz to 20kHz ±0.09dB.

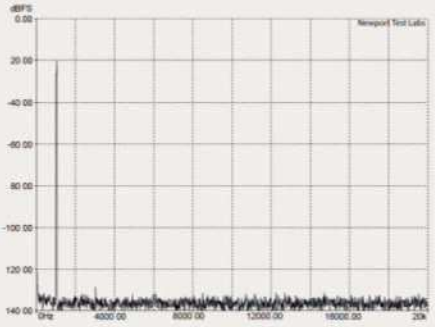




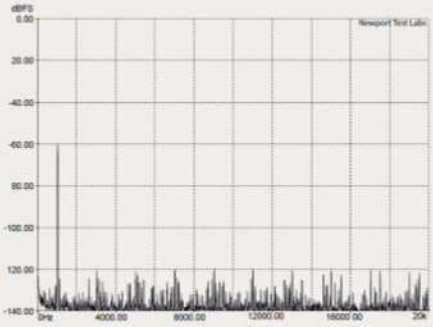
Graph 1. THD @ 1kHz @ 0dB recorded level.



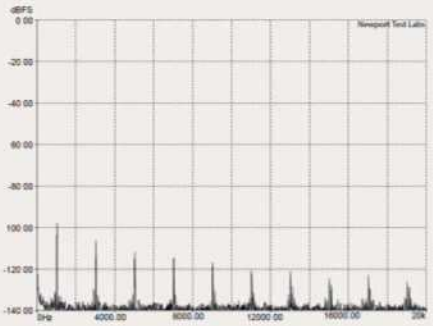
Graph 2. THD @ 1kHz @ -10dB recorded level.



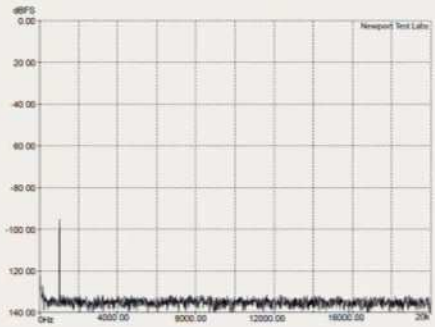
Graph 3. THD @ 1kHz @ -20dB recorded level.



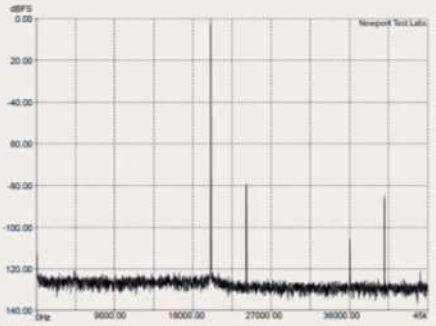
Graph 4. THD @ 1kHz @ -60dB recorded level.



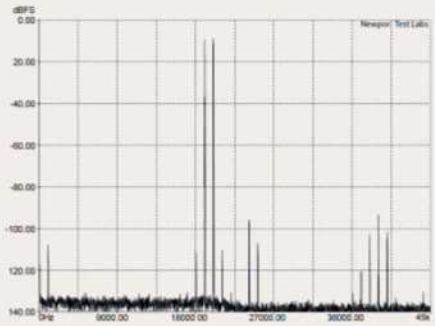
Graph 5. THD @ 1kHz @ -91.24dB recorded level. No Dither.



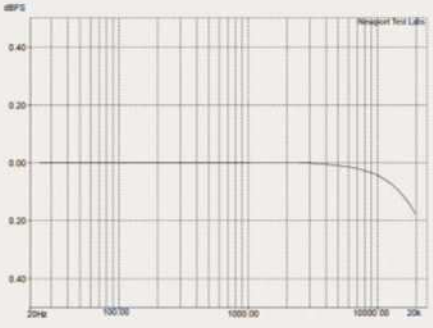
Graph 6. THD @ 1kHz @ -90.31dB recorded level. Dithered.



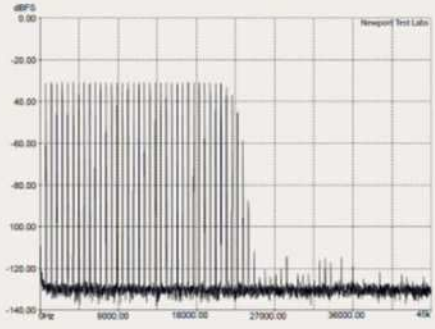
Graph 7. THD @ 20kHz @ 0dB recorded level.



Graph 8. CCIF Distortion (Twin-Tone Intermodulation) @ 0dB using 19kHz and 20kHz test signals in 1:1 ratio.



Graph 9. Frequency Response at @ 0dB recorded level.



Graph 10. Impulse Train. (One maximum amplitude positive sample every 70 samples (630 pulses per second).

You can see the roll-off above 20kHz is exceptionally steep from Graph 10.

Newport Test Labs measured channel separation as 122dB at 16Hz and exactly 100dB at 1kHz, both of which are excellent results. Channel separation at 20kHz was a little less than I am used to seeing at this frequency from a CD player, but it's still far more necessary in order for the Nagra CDP to deliver perfect stereo imaging.

Distortion with a 1kHz test signal at a recorded level of 0dB was low (Graph 1), but the presence of six harmonic distortion components in the output suggest that this distortion was related to the output stage, rather than to the digital-to-analogue conversion process, particularly since you can see that when the level of the test signal was reduced by 10dB (Graph 2) all but two of the distortion components disappeared. The two that remain, the second and third harmonics, are at levels of –120dB (0.0001% THD) and –114dB (0.00019% THD) respectively and would be completely inaudible (as would the six components at 0dB, since all are more than 100dB down, or less than 0.001% THD).

At a recorded level of –20dB, which is more representative of the levels music would be recorded on a commercial music disc, there's only a single harmonic distortion component visible in the output from the Nagra CDP, and it's at –131dB (0.00002% THD). An excellent result!

Graph 4 shows distortion at –60dB and this time the signals you see are all caused by errors in the digital-to-analogue conversion process. However, all the signals are more than 120dB down, or less than 0.0001% THD, so would not be audible.

The Nagra CDP CD player's performance at exceptionally low recorded levels is shown in Graphs 5 and 6, where the test signal has been recorded without dither (Graph 5) and with dither (Graph 6). Without the dither, you can see odd-order harmonic distortion components stretching out to 20kHz. Once dither is applied, however, all the distortion components disappear, leaving only the –91.31dB test signal at the far left of the graph. Because all music recorded onto CD is dithered, it is the performance that is shown in Graph 6 that is what the Nagra CDP will deliver in your hi-fi system. What's most notable here—apart from the complete absence of any distortion components at all, of course!—is the low level of the noise floor in Graph 6… it's down at 135dB right across the audio band, which is a truly excellent result, making the Nagra CDP quieter than most amplifiers.

Testing the Nagra CDP with a very high-level, high-frequency signal (a 20kHz