



C 510 Direct Digital Preamp/DAC



The C 510 Direct Digital™ Preamp/DAC promises to redefine hi-fi separates. For decades, audiophiles have organized their systems with a source component, such as a CD player, along with a preamplifier and a power amplifier driving a pair of speakers. This has recently changed and today, the CD player might be replaced by a computer or dedicated music streamer connected to the Internet or local Network Attached Storage. The best of these are capable of streaming high-res 24-bit studio master recordings, which are now readily available. Thanks to the incredible convenience and stunning sound quality of computer audio, many music lovers have completely replaced all physical media with digital music files. It is for this purpose that the C 510 Direct Digital Preamp/DAC was created.

HDMI



> No Noise, No Distortion

Unlike a traditional analogue preamplifier, the C 510 Direct Digital Preamp/DAC does not produce any noise or distortion that can obscure detail and limit the performance of many systems. By performing preamp functions like volume and source selection in the digital domain, the C 510 shortens the signal path and opens up new system possibilities. Whether driving your favourite power amplifier or feeding active loudspeakers, the C 510 has the requisite drive and finesse to get the best possible performance.

> NAD Direct Digital™ Innovation

Built using the incredible processing power and precision of our own Direct Digital™ architecture, the C 510 ushers in a new era of affordability for state-of-the-art performance. The C 510's dynamic range, the accurate portrayal of music's subtle nuances from soft to loud, betters other DACs and preamplifiers by about 20dB! That is a thousand times more accurate. And you can hear it in both the precision micro-dynamics and the dead silence of this remarkable device. Because the volume level is controlled by mathematics in the digital domain, there is no mechanical or electrical imprecision—all volume levels have exactly the same circuit conditions. Of course, this requires very high resolution, which is provided by the 35-bit architecture of the C 510; even 24-bit files are not truncated until well below the threshold of audibility.

> Well Connected

The C 510 includes connectivity for a wide variety of digital sources including a USB Type B port for direct connection to your PC or Mac. This port operates in asynchronous mode, meaning that the C 510 provides the precision clock for the USB data rather

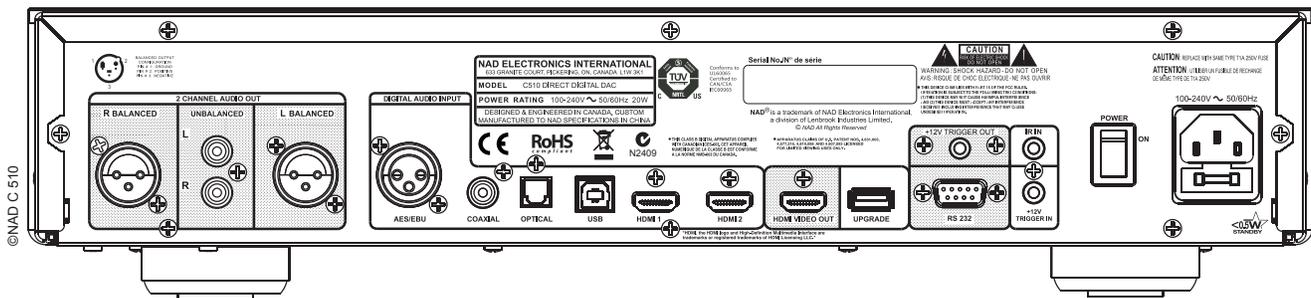
than the often imprecise clock in the computer, plus it supports sampling rates of up to 192kHz and 24-bit depth. Two HDMI inputs with a video pass through provide a secure encrypted path for High Res Audio, and allow the C 510 to perform a limited role as a video switcher. The 2-channel PCM audio track that is present on all video programming is stripped from the HDMI input with the video passing untouched to a connected video display—there is no surround decoding. We have also included 3 SPDIF inputs—all 24/192 capable—in Optical, Coaxial and AES/EBU formats.

> Thoughtful, Simple Design

The analogue output operates in true balanced mode driven by a Class A biased operational amplifier. Both Balanced XLR and single-ended outputs are provided to get the best performance with any amplifier. As with all NAD products, we have taken special care designing the power supply and critical circuit layout to optimize the performance of the premium parts used extensively throughout the C 510. A 12V trigger and RS-232 port allow for system automation interface. The control interface couldn't be simpler with Power, Input Selection and Volume Control on both the front panel and the supplied IR remote. Selected input and incoming sample rate are displayed on the front panel display.

> All Digital, All Day Long

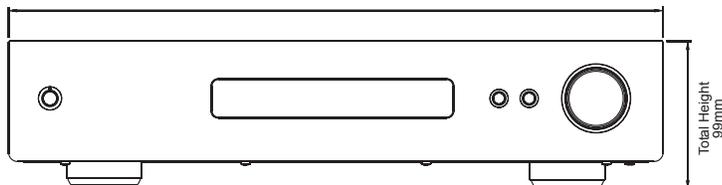
As a pure digital device, analogue inputs have not been included. This purity of design and singleness of purpose is in the very best tradition of high-end audio. Like all NAD products, the C 510 Direct Digital™ Preamp/DAC offers exceptional value and a remarkable level of performance. The C 510 is the perfect centrepiece to a cutting edge high-resolution digital audio system.



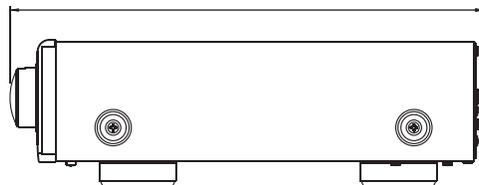
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Total Width 435mm

Total Depth 309mm



Total Height 99mm



Specifications

	C 510
Rated Distortion (THD+N with AES 17 filter)	<0.0005% (0dBFS) <0.002% (-60dBFS)
IMD Distortion	0.0001%
Signal/Noise Ratio	<-123dB (ref. 0dBFS 2V out)
Channel Separation	>-115dB (ref. 0dBFS Volume -1dB)
Sample Rate	32kHz to 192kHz (USB and digital S/PDIF)
Frequency Response	±0.5dB (ref. 20Hz - 96kHz @ 192kHz sample rate)
Output Level	2V (ref. input 0dBFS)
INPUT	
AES/EBU	XLR
SPDIF	Coaxial x 1 Optical x 1
HDMI x 2 (2-channel PCM)	
USB Class 2 Audio: asynchronous 24/192 support	
IR In	
Trigger In	12V ±20%
OUTPUT	
HDMI Video Out (3D video pass through)	
Analogue	Unbalanced 47 ohms Balanced 110 ohms
Trigger Out	12V ±20%
GENERAL	
AC Supply	100-240V AC ~ 50/60Hz
Standby Power	<0.5W
Idle Power	16W
Unit Dimension (WxHxD) - Gross*	435 x 99 x 309mm 17 1/8 x 3 15/16 x 12 3/16 inches**
Net Weight	4.7kg (10.4lb)
Shipping Weight	5.6kg (12.3lb)

* Gross dimensions include feet, extended buttons and rear panel terminals.

** Non-metric measurements are approximate. NAD Electronics will not assume any liability for errors being made by retailers, custom installers, cabinet makers, or other end users based on information contained in this document.

Note: Installers should allow a minimum clearance of 55mm for wire/cable management.



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