Audio Art No 444 - Master Fidelity NADAC L Review

How can the sound quality be so beautiful!
By Liu Hansheng

Master Fidelity NADAC L
Type: Analog high-level crystal preamplifier
Release Date: 2025
Input Connectors: XLR x 4, RCA x 2 (Input Impedance: 500k ohms)
Output Connectors: XLR x 3, RCA x 1 (Output Impedance: 200 ohms balanced, 100 ohms unbalanced)
Bandwidth: 10Hz-200kHz, less than +/-0.08%
THD+N: 0.00012% @ -3dB Gain/1kHz Tone/10Hz–20kHz BW
Signal-to-Noise Ratio: 142dBA @ -40dB Gain REL-IN/10Hz–20kHz BW
Dimensions (WHD): 435 x 95 x 390mm
Weight: 9.7kg
Recommended Retail Price: NT$830,000
Import Agent: Taiwan Gaokong (02-23631120)

Reference Software
"Martha The CD "Argerich Festival" features her live performances from her own music festival, featuring collaborations with Capuçon, an orchestra, and others. The music is beautiful and the recordings are excellent.

Highlights
① Crafted by a professional manufacturer.
② Suitable for both home and professional use.
③ Utilizes an in-house developed ASIC for audio control.
④ Rich sound quality and realistic instrument and vocal performances.

Recommendations
Compatible with a variety of active speakers.

The NADAC name first appeared at the 2015 Munich Audio Show, initially referring to a digital-to-analog converter. However, it is now a brand, part of Master Fidelity. To understand its history, we must begin with Merging Technologies, a company specializing in recording technology.

From the Beginning

Merging Technologies was founded in Switzerland in 1990 by Claude Cellier. Prior to founding Merging, he spent ten years at Nagra Kudelski, specializing in recording equipment development. He led the development of the Nagra IV-S and T-Audio TC. Since Nagra was represented in Taiwan by Aberle, it was logical for Merging to initially be represented by them as well. Merging initially launched the Pyramix Virtual Studio, a DSD digital recording workstation, which you'll see in many record recording manuals.

Merging also collaborated with Philips to develop the DXD (Digital eXtreme Definition, 24-bit/352.8kHz) format. This format overcomes the problem of DSD signals being difficult to edit and post-process, and is a high-resolution audio standard sought after by many audiophiles. Merging also adopted AoIP (Audio over IP) technology as early as 2012. This is an essential network connection mechanism for digital studio recording and is now gradually being used in home theaters. However, Merging was sold to Sennheiser in 2022, continuing its research and development in the professional field.

Master Fidelity Enters the Scene

The story now turns to Master Fidelity. NADAC, short for Network Attached Digital to Analog Converter, was originally a product from Merging's home division. It used the Ravenna/AES 67 network audio protocol to transmit digital signals over the Internet, avoiding the shortcomings of USB transmission and also supporting DSD and DXD. After Merging was sold to Sennheiser, the NADAC division was initially slated for discontinuation. Fortunately, Merging Fidelity, a team Merging had previously partnered with, took over and changed the company name to Master Fidelity. It is currently headquartered in Vancouver, Canada.
NADAC currently has three key figures. One is Swiss Dominique Brulhart, who joined Merging Technologies in 1992. He was originally Merging's CTO and head of software design, was a minority shareholder, participated in the design of the Pyramix workstation, and is the product manager for NADAC. In short, he handles all technical issues.
The other is Chinese-born Xu Weisheng, the current CEO and founder of Merging Fidelity. He is a veteran Chinese sound engineer, serving as the lead recorder and sound director for the TV series "Dream of the Red Chamber." He also previously worked for Canada's CBC. The third person, Chen Qinan, is an audio systems engineer, professor at the Beijing Film Academy, and advisor to the China Music and Audio Expert Committee. He has served as Merging's Chief Engineer in China and, after Master Fidelity was established, also served as NADAC's technical advisor in China.

Three Products

Currently, Master Fidelity offers only three products. The NADAC D is a digital-to-analog converter

based on the Merging Horus and Hapi architectures. It's a true 1-bit DAC (Philips previously released the TDA1547 1-bit DAC chip). This custom DAC is MF's own ASIC (Application Specific Integrated Circuit) design and supports both Ravenna/AES 67 and USB interfaces.
The NADAC C is an external clock with femtosecond accuracy and 10 MHz and Word Clock outputs. Finally, the NADAC L is a pure analog preamplifier with digital control. This ASIC-based preamplifier is the subject of this equipment review. The preamplifier I'm writing about is numbered number two. I heard it was specially produced for the Grand Hyatt Hotel Audio Show, and it's clearly a hot new product. At the Guangzhou Audio Show in November 2024, Master Fidelity only exhibited two models: a clock and a DAC. These two models were also showcased at the Munich Audio Show in May 2024 and the Beijing International Audio Show in June 2024.

NADAC D and C

Although the NADAC D was reviewed by Hong Ruifeng in the August 2025 issue of "Audio Forum," I'd like to summarize it here: First, its inputs include AES, USB, and Network. Second, it features Clock Data Recovery, which regenerates the clock signal from the incoming digital signal. Third, it can upsample 1-bit DSD and DoP signals, converting them to DSD256 before sending them to the digital-to-analog conversion circuitry. PCM 44.1-96kHz is converted to DSD128, and 176.4-384kHz is converted to DSD256 before being sent to the digital-to-analog converter. Fourthly, and of course most importantly, is the aforementioned in-house developed ASIC DAC. Fifthly, the power supply is divided into four groups, providing independent power supplies for the DAC, upscaling, clock, and analog.

The NADAC C external clock utilizes an SC-cut crystal pre-aged for 120 days, a hydrocarbon ceramic printed circuit board, and resistors and capacitors specifically designed for pulse applications. An internal temperature control system ensures high clock accuracy and low jitter.

NADAC L Launched

As mentioned earlier, let's return to the NADAC L, the subject of this review. The NADAC L is a digitally controlled analog preamplifier. Meaning the display is digitally controlled, but the volume adjustment and other circuitry are analog. Its appearance is identical to other digital-to-analog converters and external clocks, with the only difference being a volume knob on the right side of the NADAC L panel. The L stands for Line Stage or Line Level. The feel of turning the knob is truly unique, like stirring melted chocolate—smooth yet with a viscous resistance. Besides real-time volume control, this knob also allows for preset volume levels. Below the volume control knob is a small hole that receives the infrared remote control signal. The three units' identical design clearly allows them to be stacked together to save space. While the cabinet is small, it's built solidly. The MF and NADAC L logos on the front and back panels are engraved, giving it a commanding

presence.

Configurable Display

The NADAC L's touchscreen display (854x480) is active whenever the power is turned on. It displays information such as input and output group, screen brightness, input level, output level, settings (please consult the manual), mode selection (five settings), and trim. Trim is only enabled in Modes 4 or 5. Honestly, these displays wouldn't affect the preamplifier's operation. Removing the display would likely better emphasize the NADAC L's pure analog nature. However, perhaps for ease of operation, and perhaps for integration with other digital-to-analog converters and external clocks for studio use, the preamp also features an LCD display.

Numerous Inputs and Outputs

On the back, you'll find four sets of XLR inputs and three sets of XLR outputs, in addition to two sets of RCA inputs and one set of RCA outputs (labeled 1, 2, 3, and 4). Why so many inputs and outputs? A two-channel system only needs one set of inputs and outputs, right? Apparently, this is for professional studio use, hence the inclusion of so many inputs and outputs. Because of this abundance, the NADAC L can be set to five modes, each with a different input and output combination.

Five Modes

I need to explain the modes, otherwise, I won't be able to play the sound properly. Mode 1 is the most basic mode, with all inputs and outputs enabled and no presets. Mode 2 is for bi-amping with two-way speakers. In this mode, two balanced outputs are enabled, and you can add an additional balanced output or an unbalanced output. At this point, the volume control is still only real-time, with no preset memory. Mode 3 is for tri-amps and three-way speakers. All inputs are active, and the outputs are either three balanced or one unbalanced output. Volume control remains the same as before. Mode 4 is specifically designed for advanced NADAC L use. All four outputs are active and programmable, with individual preset volumes stored. In this case, volume control follows the preset volume. Mode 5 is a simplified version of Mode 4: all inputs are active, and the outputs are assigned to one of the four groups, all sharing the same preset volume.

Multiple Sources, Multiple Amplifiers

In short, when selecting Modes 1, 4, and 5, only one output group is active at a time. In other words, no matter how many input groups are fed into the system, only one output group can be active at a time. In Mode 2, Outputs 1, 2, and 3 can operate simultaneously, sending signals to

different output devices such as amplifiers, recording equipment, and headphones. When Mode 3 is selected, Outputs 1 and 2 can be activated simultaneously, but Outputs 3 and 4 cannot be activated simultaneously. Only one pair can be selected at a time, and they cannot operate simultaneously with Outputs 1 and 2. This means that Mode 3 can use both Outputs 1 and 2 simultaneously, or Outputs 3 or 4 independently. When Outputs 3 or 4 are in use, Outputs 1 and 2 are disabled.

These five modes may seem a bit complex, but they are actually designed for studio recording. If you're just using a normal stereo amplifier, Mode 1 will suffice. I used Mode 1 exclusively for my audition. This functionality explains why Master Fidelity launched the NADAC L: it's designed not just for home two-channel systems, but also for studio use. Furthermore, because it's intended for studio use, the display shows both input and output levels.

Specially Selected Cores

Opening the top cover reveals a simple interior, revealing a large volume control circuit board, a linear power supply, and a switching power supply. Additionally, there are numerous buffer stage circuits and input and output circuit boards, but no amplifier circuitry; it's a purely attenuated preamplifier, giving it a clean appearance. The transformer used within the NADAC L is custom-made, featuring a core hand-selected from the highest-grade material. Each batch is limited to just 10 NADAC L units. Furthermore, an ideal rectification method is employed to minimize losses during AC-DC conversion. Filtering utilizes a large, neutral, high-quality capacitor array. Combined with multi-stage linear voltage regulation, this reduces noise and improves transient response.

Specially Treated Inputs

All XLR input and output terminals feature differential amplification circuitry, and the output stage utilizes a high-linearity, high-current architecture. The inputs feature a Permalloy Audio Transformer, providing high isolation for the music signal, ensuring interference-free operation. Furthermore, the inputs utilize AC-coupling, isolating the DC voltage while allowing the AC signal to pass through. The capacitors used are high-quality film capacitors with ultra-low tangential losses, and they are precisely matched. The NADAC L preamplifier's volume control is unique, employing a custom JFET-like CMOS ASIC (custom IC) to control the volume. The benefits include no clicks, two-channel balance of less than 0.1dB, and 1dB adjustment steps.

Is chip development worth it?

You might ask: Is it worth developing a large, expensive custom chip for a preamplifier? Two key members of MF's R&D team were chip design engineers and audio enthusiasts before their retirement. Furthermore, this ASIC volume control chip can be used in many future MF products, making it a worthwhile investment. Incidentally, the NADAC L's volume control has a slight clicky

relay click at -8dB. This is because -8dB is a low-volume range that's rarely used. The R&D team, drawing on the "gear shifting" concept of professional measuring instruments, uses a relay switch in this position to ensure ultra-low noise performance even at high attenuation.
As mentioned earlier, the NADAC L lacks an amplifier circuit; it's a purely attenuating preamplifier. Why this design? The output levels of today's digital sources and phono amplifiers are so high that the preamplifier no longer needs to perform the traditional 10x amplification. Having the preamplifier simply perform signal attenuation avoids deterioration in sound quality.