



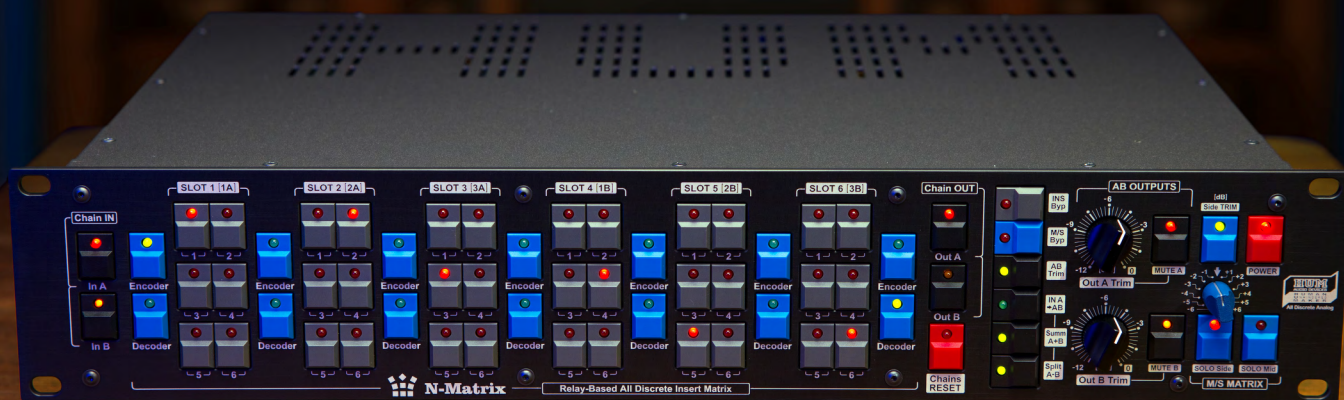
Back to The Nature of Sound

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N-Matrix™

Relay-Based All Discrete Insert Matrix



Unhindered Maker's MASTERING SERIES

The Perfect Simplicity. Made for Man.

N-Matrix is a fully analog, all-discrete insert matrix with enormous capabilities and great simplicity of use. It is, in fact, much more than insert matrix. It is absolutely unique and allows for real freedom of work. You won't be overwhelmed by increasingly complex technology, but quite the opposite: N-Matrix is very intuitive and pleasant to use. It allows you to work fast and simply. You will focus on the creative process itself, while ultimately solving all advanced 'insert' tasks you may encounter in your daily work as a mastering or mixing engineer.

N-Matrix will not alter your perfectly worked-out master in any way, so you can always use it with the utmost confidence. This is the way it should be.

A beautiful and inspiring classic look is accompanied by a friendly and innovative approach to working with an insert matrix processor. It helps to bring back the pleasant feeling of communing with what is close to every human being by nature: the beauty of pure analog sound. It fits fully into the HUM Audio Devices philosophy - to truly care about the user, as do all our devices, including the famous LAAL Look Ahead Analog Limiter and the N-Trophy All Discrete Analog Console.

This is really the maximum sound quality we could achieve these days.



Carefully handcrafted in Poland

How did we do it? The idea behind the N-Matrix.

The N-Matrix processor is an expanded concept of the passive insert matrix used in the N-Trophy All Discrete Mastering Console (i.e., the centre section of the N-Trophy All Discrete Analog Console).

We were encouraged to build it by the mastering engineers and producers, following the well-received launch of our mastering console at AES NY 2024.

Talking to sound engineers, we all felt there was a serious shortage of truly analog equipment for advanced insert work on the market.



This is how the N-Matrix was born...

We felt a real need to design a completely new insert matrix, with a different approach, for which HUM Audio Devices is known. One that would be all-discrete, analog, lossless, passive, and at the same time offer much more than other available insert switchers, enabling fast and intuitive operation. One that would be user-friendly and fully satisfy the ideas and needs of sound engineers.



N-Trophy Mastering Console premiere at AES NY 2024...

To build the N-Matrix, we used almost 300 top-class, hermetically encapsulated relay switches with gold-plated contacts.

The PCB boards containing relays for left and right channels are completely separated from each other for the best audio performance.

We carefully selected the highest quality components and designed audiophile-grade discrete analog circuits. As always, when choosing components, we conducted many hours of listening tests and measurements in our studio and lab to get the perfectly transparent sound.

Twenty-five years of sound engineering experience were invaluable here.



Independent PCB boards for left and right channels...

Each unit is hand-built in our lab to the highest standards, like all other HUM Audio Devices equipment. Because we are truly passionate about what we do, we pay attention to every detail, even the most subtle ones.

After building, each unit has to pass a long-term burn-in process, rigorous measurements and calibration, and at the end - final listening tests in our studio.



Careful calibration at HUM Audio Lab...

Creative tools you will find in the N-Matrix.

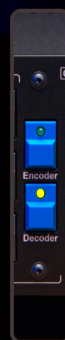
N-Matrix offers maximum quality possible in the analog domain that you can expect from a mastering-grade insert processor. The entire audio signal path is fully balanced from inputs to outputs.



N-Matrix opens a whole new world of possibilities...

All switching and routing is passive, based on top quality relays, and the audio path is as short as it can be. The only active discrete circuits are those responsible for M/S encoding, decoding, Side trimming, stems summing, and output level trimming - if you switch them on, of course.

In each mode, the N-Matrix is fully transparent in sound, and offers massive headroom, allowing you to manipulate the sound of your connected devices in any way you like.



N-Matrix M/S processing circuits are of the same top quality and use a similar concept to that used in our famous LAAL Look Ahead Analog Limiter.

These circuits work in a more musical way and sound very natural compared to similar processors.

The M/S Encoder and Decoder effectively serve as two additional inserts to the chain.

Simplicity...



N-Matrix is so easy and pleasant to use... What you see is what you get. Everything is on the surface. There are no hidden functions, and the internal structure of the insert matrix is so elaborate that it does not restrict you in any way from freely selecting the order of your devices.

Freedom...

Not only does the N-Matrix allow you to program any order of your six devices in the insert chain, but it also allows you to split the main six-slot chain into two three-slot sub-chains [A] and [B].

N-Matrix's different working modes enable parallel processing, serial processing, cascading, stereo stems summing, M/S encoding and decoding at any point in the chains, soloing, output level trimming, and even stereo width expansion between chosen slots.

The possibilities are immense. This is indeed an engineer's dream come true for an all-analog top-of-the-range insert matrix processor.

Inspiration...

All N-Matrix features are easily controlled on the comfortable-to-use front panel with an inspiring classic design. Solid machined aluminium knobs and top-class vintage-style buttons complete the premium feel.



Pleasant and inspiring classic design...

When 1+1>2 ...

The internal structure of the N-Matrix has been meticulously designed to handle even the most sophisticated applications. When you put your hands on your N-Matrix, you will be amazed!



In many situations, you will not need an external summing mixer...



The stereo stem summing feature is particularly powerful. The summing bus is implemented using discrete HUM op-amps, which are also used in the LAAL mastering limiter, among other devices.

When you cascade more than one N-Matrix, you can get a multi-stem summing system with level control. But that's just the beginning. You can have chains or sub-chains on individual units in different parallel or series modes, as well as M/S encoding and decoding done on separate N-Matrix units. That can, for example, extend the encoded part of the insert chain by significantly more than 6 slots. This opens up enormous creative possibilities.

Each N-Matrix remembers its last settings when powered off. You can always quickly reset them by pressing the RESET button. This deactivates all slots, which effectively equates to putting them into Hard Bypass mode.

Connections and studio integration.

N-Matrix is a 2U device with balanced, discrete XLR analog inputs and outputs on the back panel. The entire signal path of the N-Matrix is fully balanced, from inputs to outputs. We decided not to use the DB25 connectors because of their poor reliability compared to XLR sockets. XLR connections also give you much more flexibility, especially when the N-Matrix is not used in fixed studio environments.

- **IN A Right, IN A Left:** Stereo line inputs/outputs to the path [A]. Dependent on the N-Matrix operating mode, they are active (used as a chain or sub-chain) or not.
- **OUT A Right, OUT A Left:** Stereo line inputs/outputs to the path [A]. Dependent on the N-Matrix operating mode, they are active (used as a chain or sub-chain) or not.
- **IN B Right, IN B Left:** Stereo line inputs/outputs to the path [B]. Dependent on the N-Matrix operating mode, they are active (used as a chain or sub-chain) or not.
- **OUT B Right, OUT B Left:** Stereo line inputs/outputs to the path [B]. Dependent on the N-Matrix operating mode, they are active (used as a chain or sub-chain) or not.
- **INSERT 1... INSERT 6** Input/outputs for six stereo inserts. They are activated by numbered switches in the chain insert slots.
- **AC IN:** Main power socket. In the production model, it ensures automatic switching in the range 100-240V 50/60Hz AC.



Back panel with balanced XLR sockets...

N-Matrix Feature Summary:

N-Matrix is designed with the highest sound quality, ease of use and unique features in mind. It complements the line of HUM Audio Devices mastering equipment, together with the famous LAAL Look Ahead Analog Limiter. Like all other devices, N-Matrix is carefully hand-built in our lab in Poland.

- Mastering Patchbay/Switcher/Insert Processor.
- Fully analog, all-discrete audio signal path.
- Very high headroom, wide band, and very low noise (+/-24V int. powering).
- Fully balanced signal flow, from inputs to outputs.
- All-passive, lossless signal switching, based on top-quality relays with gold-plated contacts.
- Perfectly transparent sound, no matter what settings or operating mode you use.
- Two independent stereo inputs and outputs A and B.



User-friendly and comfortable to use front panel...

- Six-slot stereo main inserts chain.
- Possibility to split the main chain into two three-slot sub-chains [A] and [B].
- Five modes of operation, with linear or parallel processing, splitting and stems summing.
- Possibility to sum two stereo input stems flowing through two parallel chains.
- Summing is based on discrete op-amps we designed for our famous LAAL limiter.
- Cascading two or more N-Matrixes opens up even more incredible possibilities for multi-stem summing and processing.



High mechanical and operational reliability...

- All-discrete M/S Matrix with lots of features.
- M/S Encoder and Decoder effectively serve as two additional inserts and can be used at any point in the inserts chain.
- Output section with Out A, Out B, and Side signal trimming, muting, and soloing.
- Rotary stepped control for outputs and for Side signals trimming.
- All inputs/outputs use balanced XLR sockets.
- 2U chassis, classic design with top-quality buttons and solid machined aluminium knobs.
- Custom-made shielded AC cord.



Specifications:

Measured with the Prism D-Scope III Audio Analyzer.



Pristine audio quality in every aspect...

We believe you will have as much fun using your N-Matrix as we did designing and building it for you.

Be the true Unhindered Maker! Draw on true Inspiration and create your next masterpiece joyfully and without compromise, with a vital and full-of-life sound. This is the idea that guides us.

Your hard work deserves that.

Your HUM Audio Devices team.

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For more info and demoing, please contact us or our authorized distributors.

Check the actual distributors list on our website, and look for further inspiring High End products.

Audio:

Audio voltage rail:	+/- 24V
Self Noise A-weighted:	-112 dBFS
THD+N:	0.001% (1kHz / 1dBV)
Frequency Response:	10Hz - 30kHz (+/- 0.1dB)
Max Input Level:	+25dBu
Max Output Level:	+25dBu
Input XLRs:	balanced, impedance 30k Ohm
Output XLRs:	balanced, impedance 300 Ohm

Powering:

AC Voltage:	automatically switchable 100V/240V - 50/60Hz
Power Consumption:	max. 45 Watt

Weight: N-Matrix 7.1 kg (8.8 kg shipping)

Dimensions: N-Matrix (2U) Width: 484 mm
Height: 88.9 mm
Depth: 314 mm
(housing with sockets & knobs)

Shipping box Width: 620 mm
Height: 250 mm
Depth: 420 mm

Package contains: - N-Matrix processor
- Custom-made shielded AC cord.



Have a great time with your new N-Matrix processor !



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