Neutron Core NDX Profile pack for NAM

NC-DRV-RUSMUFF-NDX

User Manual

Neutron Core Pedal Pack for Neural Amp Modeler

These profiles have been designed for use alongside other Neutron Core components, and recorded to deliver realistic results in modular signal chains.

Each pedal was captured across a range of settings to allow faithful recreation of the sound and behaviour of the original hardware. The profiles in this pack are full quality NAM A1 Standard architecture compatible and should work in all plugins and devices that will load that format.

What you will need:

The Neural Amp Modeler plugin or standalone app, or a compatible device or plugin capable of loading standard architecture NAM A1 full quality files. The official NAM plugin for PC and MAC can be obtained for free at the following link: https://www.neuralampmodeler.com/

NC-DRV-RUSMUFF-NDX

This pack contains 28 profiles of the **Electro-Harmonix “Black Russian” Big muff** — a cult-classic fuzz/distortion pedal produced by Electro-Harmonix in Russia during the late 1990s and early 2000s. Known for its darker voicing, enhanced low-end response, and nearly infinite sustain, it delivers a thick, saturated tone ideal for creating a wall of sound.

This pedal was famously used by Steve Turner of Mudhoney, whose 1988 debut EP *Superfuzz Bigmuff* was named after the Univox Super-Fuzz and the Electro-Harmonix Big Muff pedals, highlighting their significance in shaping the band's signature "dirty" sound.

Due to its sensitivity to input impedance, the “Black Russian” Big Muff Pi was profiled using the **Neutron Inductor** to accurately capture its authentic tonal behavior and feel. The result is a faithful recreation of its crushing, woolly tone — just as it sounds when played with a real guitar plugged directly in.

The Black Russian muff features a **non-linear style gain curve** so the gain increases very quickly and then adds sustain. For this reason, in addition to the usual 0, 5, and 10 gain positions, we have also included the gain(sustain) knob at 2 so you can get all the variations of the circuit.

Profile Naming

Each profile in this pack uses the following naming format:

NC-DRV-RUSMUFF-NDX-01-D-T****

Where:

- **NC-DRV-RUSMUFF-NDX** is the pack name
- **XX** is a numerical prefix to ensure correct sorting in the NAM interface
- **D**** refers to the Sustain control setting: 0 (Min), 2(Gain Zone), 5 (mid), or 10 (Full).
- **T**** refers to the Tone control position, based on common user positions: 0, 2, 4, 5, 6, 8, or 10.

Example:
A file named NC-DRV-RUSMUFF-NDX-26-**D10-T06**
means: sustain at maximum (10) and tone set to 6.

To clarify what these numbers mean, see the reference image included below showing the knob position layout. The file numbers correspond to physical positions on the Black Russian muff's controls as labelled on the pedal.

Drive Behaviour and Input Sensitivity

This pack includes four sustain settings per tone: **D10** (maximum), **D5** (medium), **D2** (Start of Drive Zone), and **D0** (minimum). These were selected to cover the full usable gain range of the pedal, with intentional overlap between them.

You can use the **Input control in NAM** to fine-tune the amount of drive in a musically accurate way:

- Start with the **D10** profile, and reduce the Input level in NAM to access all real-world gain behaviours between **maximum and mid-gain** settings.
- Then use the **D5** profile, again lowering the Input level, to reach everything between m**id-gain and 2.**
- Finally, use the **D2** profile, again lowering the Input level, to reach everything between **gain zone position and 0**
- The 0 Gain position allows a 100% accurate reproduction of the minimum gain position.

This approach recreates the full sweep of the pedal's gain control using just four highly accurate snapshots per tone setting — preserving the pedal's natural dynamics, clipping character, and response to playing intensity and removing the need for 100s of profiles.

Input/Output Calibration

All profiles in this pack contain input and return level calibration information where relevant. If your chosen plugin or device does not read this information do not worry, its not necessary to use the profiles. To enable the calibration feature on the NAM plugin, enable “Calibrated” mode in the NAM plugin settings and enter your own input calibration level in the box provided and turn on “input calibration”. We create our sounds at +6dbU = 0dbFS. If your plugin or device does not support auto-calibration, either manually adjust your input to this level, or as a rough guide you can simply strum your guitar equipped with a humbucker and set your input level on your soundcard/device so that the signal peaks around -6db on your meter, or for a single coil guitar this should be around -12db. Add or remove gain from there to taste. We recommend setting the **output** calibration mode to “Normalized”.

NAM Input Meter: Avoiding Clipping

To maintain the most accurate and authentic reproduction of the captured gear, monitor your input levels carefully in NAM.

- **Keep levels below 0 dBFS** at all times
- Avoid clipping — it can cause unnatural behaviour or distortion
- If chaining NAM instances, adjust the output of one to avoid overdriving the next

Mix & Match Ecosystem: Combining Profiles for Maximum Flexibility

The Neutron Core system, like all Neutron products, is designed as a highly versatile, modular platform that allows you to mix and match profiles to suit your creative needs.

Core pedal and amp packs scale from simple setups — a single AIO profile with pedal, amp and speaker in one profile — to full modular chains that rival the realism of multi-instance plugin rigs or complex studio workflows.

Neutron Core profiles are built to combine seamlessly in both serial and parallel configurations, enabling users to recreate real-world recording setups with natural, believable results.

Combining Profile Types

1. **Pedal Profiles:**
   Place at the front of the signal chain to add compression or gain shaping before the amp stage.
2. **Preamp Profiles:**
   Found in Neutron Core amp packs. Combine with PowerPack profiles and Quantum Speaker captures to recreate rich, realistic behaviour and gain extra control of the sound.
3. **Power Amp Profiles:**
   (Sold separately via Neutron PowerPack.) These simulate output stage saturation and speaker interaction, completing modular rigs.

4. **Quantum Speaker (QS) Profiles:**
    - **QuickStart Profiles:** Ready-to-use blends of classic mic placements.
    - **Discrete Mic Profiles:** Combine individual mics in parallel for custom blends.

Signal Chain Examples

- **Series:** Pedal → Preamp → Power Amp → Quantum Speaker
- **Parallel:** Combine multiple Discrete Mic profiles for realistic mic mixing

What Is Neutron Core?

Neutron Core is the foundation layer of Neutron Audio's profiling ecosystem. It provides highly accurate, modular profiles of individual components in the signal chain — including amplifiers, pedals, power stages, and more — all captured with an emphasis on preserving both detail and musical responsiveness.

Neutron Core profiles are fully compatible with the standard NAM format plugin and hardware ecosystem. They are designed to be mixed and matched: a user may choose a single All-In-One (AIO) profile for simplicity, or build a modular rig using multiple components — including pedals, preamps, power amps, and cabinets. Profiles are captured at consistent operating levels and behave predictably when combined, allowing for flexible signal routing without correction or compensation.

Each Neutron Core pack is the result of a process that combines **technical precision with recording industry expertise**. The capture process is **true to the source**, delivering an accurate representation of the gear's **sound, behaviour, and character**. The result also reflects the decisions made by experienced engineers — gain staging, signal flow, mic selection, balance, and response — shaped using high-end equipment and decades of professional studio knowledge.

The goal is to provide users with an **authentic, recorded guitar sound** — the kind of result they would expect if they walked into a professional studio and worked with skilled engineers using the best available gear. Every profile reflects Neutron Audio's core philosophy: **truth to the source**, and the belief that **technology fused with recording industry expertise** creates exceptional results.

What Is NDX?

NAM was already the most accurate profiling solution available in terms of frequency content. NDX (Neutron dyNAMix) is Neutron Audio's bespoke NAM training process — a combination of software, hardware and expertise developed by us to include an additional, deeper layer of time-based dynamic realism. In short, it adds more Dynamics to NAM profiles.. hence the name "dy NAM ix" or NDX for short. The easiest way to hear this clearly in action is by checking out our compressor packs where you will clearly hear extreme, long time-domain compression in action. That was previously not possible with the standard NAM trainer or architecture, NDX adds this extra information to all of our profiles made with it.

NDX allows the authentic profiling of more complex compression, transient recovery, saturation

bloom, and time-based level-dependent changes — these are the time-based responses which affect how real gear feels and reacts, not just how it sounds in the frequency domain. NDX also helps to reduce some of the aliasing-like artifacts you can often find in high-gain NAM profiles, as the increased time-domain information reduces frequency averaging for a more natural result; increasing both realism and fidelity across the board.

Historically, this has only been achievable using custom architectures with increased CPU demands and limited compatibility. NDX encodes this extra time-based dynamic information directly into standard format NAM profiles. They will work on any plugin or hardware that natively loads full NAM profiles.
It applies equally to compressor, pedal, amplifier, poweramp, and speaker profiles — allowing all of them to behave more like reality and increasing overall fidelity in all cases.

All profiles in this pack are created using the **NDX Gen2 system**.

Neutron Inductor Technology

This profile pack was created using the **Neutron Inductor**, a custom-designed device that simulates the real electrical interaction between a guitar's pickups and the pedal being profiled.

Many pedals—especially vintage designs like treble boosters, fuzzes, and early overdrives—respond very differently depending on what drives them. Standard reamping fails to reproduce this crucial interaction, often resulting in tones that sound or feel wrong, even if the user can't immediately tell why.

The Neutron Inductor solves this. By recreating the pickup load in a precise, controlled way, it ensures the profiled pedal behaves exactly as it would when connected to a real guitar. This allows us to profile pedals previously thought too reactive or sensitive to capture accurately.

At Neutron Audio, we go beyond what others consider "close enough." Every one of our NDX packs captures the **sound** and **feel** of the original gear preserving both with total authenticity.

Support

If you need support or have questions about the Neutron Core Pack, you can:

- **Submit a request on our website**: https://www.neutronstudios.com/
- **Join our dedicated Facebook customer group**: https://www.facebook.com/groups/1712386306166179

Our Facebook group is the ideal place to ask questions, get updates on all our products, and connect with other Neutron Audio users.

We are on YouTube!

This manual aims to cover all aspects of using the pack comprehensively, however we have also made a video that explains the Neutron Core concept in detail here:

https://www.youtube.com/watch?v=kkE-U04qo2U

We also invite you to watch the other videos on our channel at::

https://www.youtube.com/@neutron_audio

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Neutron Audio – True to the source, Technology Fused with Expertise.