P821 MDN TAPE

User Guide
Version 1.0

Marc Daniel Nelson: Biography

Marc Daniel Nelson is a **Grammy**-winning, **French Academy Award**-nominated mixing engineer, music producer and creative director. He has been mixing, producing and managing creative content for over 23 years.

His music credits include **Fleetwood Mac, Jason Mraz, Joni Mitchell, Colbie Caillat, Eric Burdon, Ben Harper, Need To Breathe, Robert Duvall, Ozomotli, John Fogerty, Reik** and more. As Protégé for both legendary producer/engineer Bill Schnee and Ken Caillat, Marc has carried the torch for impeccable quality sound and production.

His film credits include **Solo, Blade Runner, The Vietnam War, Mulan, The Expanse, Wild Horses, Point Break, No Manches Frida, Fractured, Amanda, Father Figures, Ya, Ty, Vin, Vona** and more.

His creative management credits include executive producing the 13-episode **PBS** television series, creating and executive producing the national video campaign for **Guitar Center**. Creative directing for **Alcon Sleeping Giant, ArtistMax, Produce Like A Pro, Inside Blackbird** and **Warner Chappell**.

https://www.marcdanielnelson.com/

IMDB: https://www.imdb.com/name/nm8392038/

MARC DANIEL NELSON

PULSAR MODULAR

Foreword by Marc Daniel Nelson

As an extension of my previous plugin release, the P455 MDN Sidecar, I wanted to embark once again on a journey down memory lane to talk about my history and passion for the sounds within music. This all started well over 25 years ago when I became obsessed with the magic and personalities of sonics—why some albums sounded more three-dimensional and dreamlike, while others felt more intimate and organic.

Albums like *Pink Floyd's The Wall*, *Steely Dan's Aja*, and *Fleetwood Mac's Rumours* all shared an incredibly open and beautiful sound. Though the music itself couldn't be more different, and each album was engineered by different people, there was a sense of space, character, and sheer sonic beauty that united them. Even before I learned that the same studios and tape machines were used on these projects, I could sense something uniquely captivating in their character and sonic landscape—something that moved me, even at a very young age.

In 2007, I was at The Mastering Lab in Hollywood with Bill Schnee, wrapping up a mastering session with Doug Sax. As we left through the back door into the parking lot, Bill pointed to a long, narrow building tucked to the side. "That was the Producer's Workshop," he said. "I recorded *Aja* in there." My jaw hit the ground. Not only was *Aja* recorded there, but so were *Pink Floyd's The Wall*, *Ringo Starr's Goodnight Vienna*, *Fleetwood Mac's Rumours*, and countless other historic albums. A small, unassuming room just off Hollywood Boulevard—yet it was filled with so much history and magic. Who would've thought?

My dear friend Clay Blair, who owns Boulevard Recording (formerly Producer's Workshop), and I have spent years tracking down every detail we could about the studio's storied past. His meticulous dedication to preserving its legacy continues to shine through to this day.

I had the opportunity of a lifetime to purchase one of the historic Stephens 821 24-track tape machines that lived at the Producer's Workshop throughout the '70s and '80s. People often say, "If these walls could talk." I'd say, "If this machine could talk..."

So, what is P821 MDN Tape exactly? After nearly two years of development, Pulsar Modular and I designed what I'd consider the closest emulation of an analog tape machine on the market. The Stephens 821's massive, expansive soundstage—a result of its minimal electronics and transformerless design—is perfectly captured in this plugin. With no aggressive compression or clamping down, this is the first plugin of its kind where you're truly hearing how tape reacts. Pure size for miles.

With all the choices of tape plugins out there, one has to consider why the P821 is so special. As Ken Caillat said about the Stephens 821 while producing Fleetwood Mac's Rumours, "This thing made me sound like a genius, and this new P821 plugin is just incredible".

Additional Foreword by Clay Blair

The Stephens tape machines have a long history with Producer's Workshop. In fact, when I took over the studio in 2010, that was one of the first things I was told by engineers who had worked there in its heyday. Bob Ezrin mentioned it was one of the main reasons he chose to do *The Wall* with *Pink Floyd* there. He had already worked on *Lace and Whiskey* with *Alice Cooper* in the early '70s, as well as with *Roberta Flack*, at the same studio. At some point during that era, he even purchased his own Stephens machine. It was a sound he became known for alongside his sleek rock productions.

To many, these records changed the pop world forever, and a Stephens machine was used on them all. The studio was renowned for its clean electronics, consoles stripped of transformers, transformerless line amp tube mics, and the neighboring Mastering Lab, which released many cuts on its Sheffield Labs label for hi-fi aficionados to test their setups.

I've often been told the Stephens 821 is "the best sounding tape machine ever made," and now I understand why, though not for the reasons you might expect. Every tape machine up until that point used a discrete or tube design, loaded with transformers and complex electronics. These were the "Rolls Royce" of tape machines, representing the best money could buy. But with so many components in the audio path, John Stephens set out to create something much more pure and unique.

Using rejected parts from NASA and other local aerospace manufacturers, he pursued a vision to build one tape machine to rule them all. He started by modifying 3M machines, pushing them to meet his standards. Some of the earliest models even used 3M Isoloop transports. Eventually, he developed his own take on the Isoloop design. This design removed the capstan and pinch rollers, which were often harsh on tape after prolonged use, and instead relied on light sensors, which allowed the tape to move much more freely. Additionally, Stephens designed a proprietary input/output amp that worked without transformers.

The result was the 821A, the first transformerless multitrack tape machine without a capstan or pinch roller—a free-flowing tape path with no resistance and nothing to degrade the audio signal.

For the first time, engineers and producers could hear the physics of the recording process without interference from excessive electronics. They experienced the unaltered sound of tape and could present their clients with a clearer representation of what was captured on the studio floor.

Hearing this plugin recreate that same experience, without any electronics interfering with the sound, is a joy. It's truly incredible and unlike anything else out there.

Preface

Emulating tape is a complex challenge. It is far more nuanced than even the most advanced application of frequency response and harmonic distortion; there is an expansive world of dynamic interplay that takes place between machine, medium, and signal. Tape speed, head alignment, and the physical properties of the particular tape itself shape its character. Despite major advancements in DSP, true tape emulation has remained elusive. Many attempts capture snapshots of its sound but break down under varying signal levels and source material.

Our approach is different. Rather than relying on static sampling techniques, we used algorithmic modeling, which we honed over the years, to recreate tape's complex behaviors in real time. The result is a more faithful and responsive reproduction of its subtle intricacies.

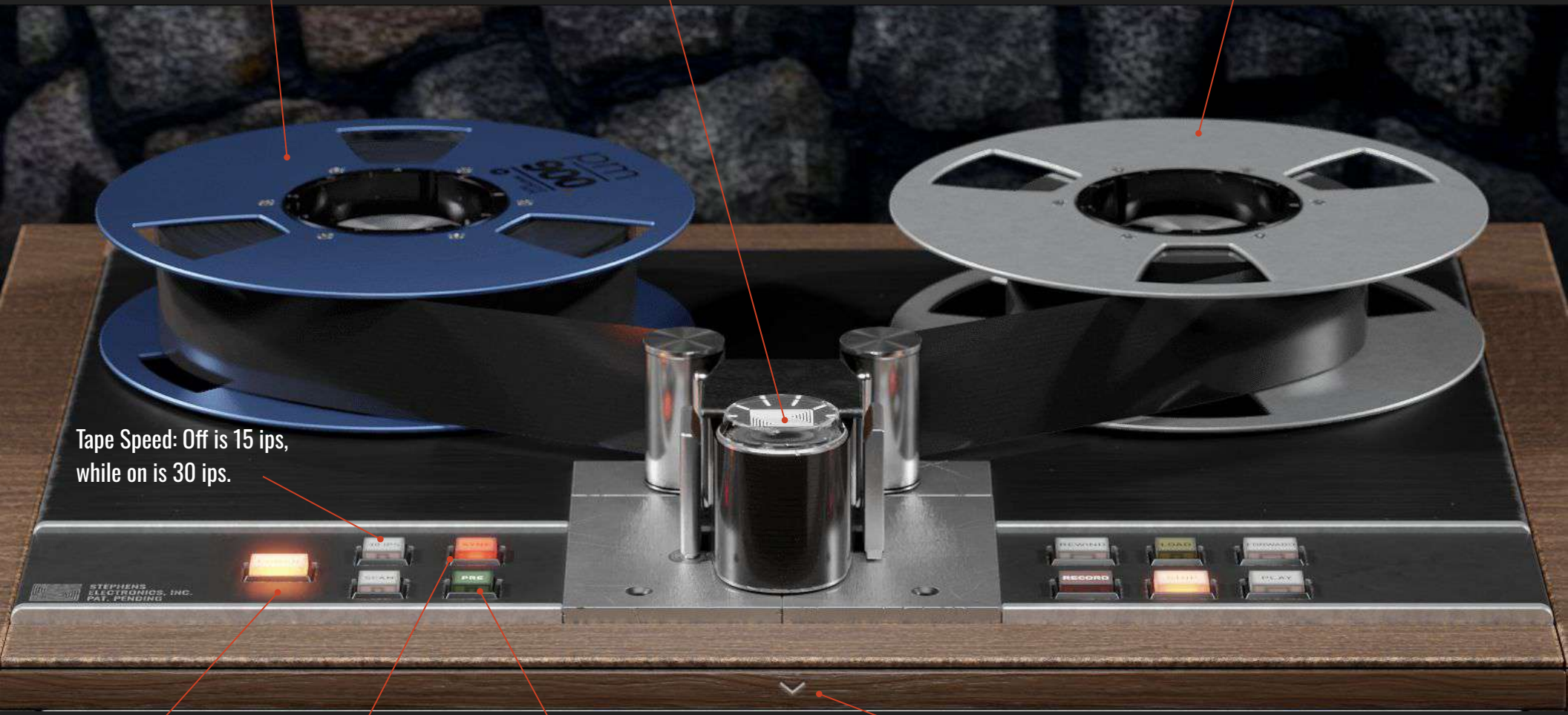
P821 MDN Tape is the culmination of extensive R&D, hands-on experience and long listening sessions. Our goal has been to distill the essence of the tape machine and the tape formula (transient shaping, saturating, limiting, and subtle non-linearities) into an experience that feels both authentic and unwaveringly musical across a wide range of sources and signal levels.

Its creation was a collaborative, iterative process. Every feature was designed, tested, and refined to create a tool that is both musically inspiring and technically precise. Getting the emulation right required more than technical precision; it demanded a deep, almost instinctive connection to the tape era. That connection, shaped by firsthand experience with reel-to-reel machines, was amplified through the collaboration between Marc Daniel Nelson and myself. We trusted each other fully, even through uncertainty, approaching development as if crafting a record rather than coding a plugin. We brainstormed, tested, listened, refined, and repeated the process until we captured the spirit of tape.

The result is a plugin that integrates seamlessly into modern production workflows while preserving the timeless qualities of tape. Whether you're seeking subtle enhancements or bold transformations, the P821 MDN Tape is designed to provide a reliable and versatile tool for your creative process.

P821 MDN Tape is certain to become a permanent fixture in studios around the world. We can't wait to hear how it shapes your unique creative signature. Share your work with us; there's nothing more fulfilling than hearing your creativity come to life.

Ziad Sidawi
Audio Equipment Designer & CEO
Pulsar Novation LTD



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Expand/collapse the transport section animations

Fixed frequency shelving EQ (pre or post)

RMS input (black needle) and output (red needle) metering

Glowing LED border reflects input intensity and saturation response

Tape formula 456 & 900 imparts two distinct sonics to your audio

Low and high bias tuning

Choose between tape and thru (bypasses tape)

Lock in/out for gain compensation

Tape hiss

Speed at which tape moves during recording or playback

Internal gain staging is critical to controlling dynamic and transient response across the different tape formulas and tape speeds

Expand/collapse the wow & flutter and tape delay section

Level match the input signal

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Lo-fi, when activated, delivers tighter bandpass constraints and a presence boost around 1 kHz

Modulation Circuit on/off

HPF the delayed tape signal

LPF the delayed tape signal

Tape Delay Circuit on/off

Bandwidth control altering the LPF & HPF

Use slow for natural tape behavior and fast for creative usage

Change speed for different timing delay

Flanging effect based on the Wow & Flutter settings

Pitch shift and drift

Amplitude flutter

Creating a repeating echo effect

Expand/collapse this drawer

Adjusts the delay timing

Blend the tape signal with the delayed tape signal

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LO and HI EQ Shelves: The LO and HI EQ shelves offer flexibility in shaping the tonal balance of a signal either before or after it interacts with tape.

The PRE position allows frequency response adjustments before the tape's saturation and compression characteristics take effect, influencing how the tape responds to different frequencies. For instance, boosting highs before tape can result in a more pronounced tape compression effect on those frequencies, while cutting lows Pre-tape can help control excessive low-end buildup in the saturation stage.

The POST position provides a way to refine the tonal balance after the tape has imparted its character. This is useful for restoring lost high frequencies, taming exaggerated harmonics, or simply making subtle tonal adjustments without affecting how the tape itself reacts to the signal.

Note: The Stephens 821 tape machine is renowned for its exceptional sound quality but lacks user-accessible bias and EQ calibration controls, relying instead on fixed NAB or CCIR playback equalization curves. To enhance flexibility and creativity, we've integrated LO and HI shelving EQs alongside bias controls into our design. This fusion marries the classic Stephens sound with modern features found in machines like Studer, Ampex, MCI, and Otari, allowing for both precise calibration and innovative tonal shaping.

BIAS Controls: The BIAS controls stay true to tape behavior while providing separate control over low-frequency and high-frequency changes that occur as tape is biased.

LO BIAS: Default (0): Optimized for a consistent low-frequency response, controlled distortion and balanced dynamics.
Counterclockwise: Lows become fuller with less emphasis on punch and less dynamic movement.
Clockwise: Lows become more distorted and may lose clarity, feel looser and less controlled.

HI BIAS: Default (0): Optimized for a balanced frequency response and controlled distortion.

- Counterclockwise: Distortion is smoothed out, high frequencies soften and transients become more rounded.
- Clockwise: Distortion and high-frequency response increase, while transients become sharper and more pronounced.

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The BIAS and shelf knobs have three states:

- **Red:** Disengaged.
- **Orange:** Engaged but at 0 level.
- **Green:** Engaged and has value.

Bias, De-Mystified

The practice of biasing tape involves introducing a high-frequency AC signal alongside the audio being recorded, ensuring the magnetic particles remain responsive and capable of accurately capturing sound. This creates a linear relationship between the input and recorded signals, minimizing distortion and optimizing frequency response.

A correctly biased tape strikes a balance between frequency response, distortion, and headroom. It achieves a natural tonal balance, avoiding extremes in brightness or dullness, keeps distortion minimal, and exhibits subtle to moderate compression characteristics.

If a tape is overbiased, more of the AC signal is applied, causing the magnetic particles to respond more uniformly. Mild overbiasing reduces distortion and smooths transients. The result is a darker, smoother sound with reduced high-end detail, softened transients, and a more compressed dynamic range.

If a tape is underbiased, less of the AC signal is applied, leading to an uneven magnetic response. This increases high-frequency output but also increases distortion, especially in the mids and highs. The result is a brighter, more aggressive top end and more pronounced transients.

At the extreme, if a tape were completely unbiased, it would fail to record signals linearly, leading to severe nonlinear distortion, loss of detail, and phasey artifacts. Without bias, the magnetic particles would not respond smoothly to changes in the input signal, resulting in erratic and unpredictable recording behavior.

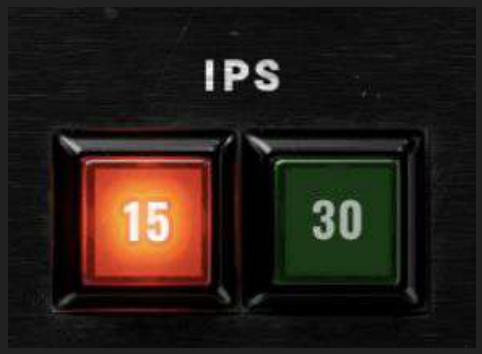
TAPE: Runs the audio signal through the tape circuit to emulate the chosen formula and speed.

THRU: Runs the audio signal through the machine without it being recorded or played back from the tape. This is useful for:

1. Setting levels: Adjust input levels and monitor the signal in real-time without recording it.
2. Monitoring the source: Listen to the input signal to ensure it sounds correct before committing it to tape.
3. Bypassing tape effects: Hear the raw input signal without any tape coloration, yet still colored by the internal tape machine circuitry.

FORMULA: Each tape formula, 456 and 900, brings its own unique sonic qualities to your audio signal.

- 456: Handles hot levels with relatively low headroom compared to its 900 counterpart, meaning it saturates more at an equal input level. Known for its warm, mid-forward character, it delivers a forgiving, classic analog sound with slight compression. While its naturally high noise floor is part of its signature sound, it may not suit every situation. Fortunately, MDN Tape offers the option to control the hiss level or turn it off entirely.
- 900: Clean, extended, and accurate, with high headroom and low distortion. This formula offers clarity and transparency, providing a wide dynamic range and excellent signal-to-noise ratio. While it lacks the pronounced coloration of 456, it excels in delivering a pristine and precise sound.



IPS: The speed of a reel-to-reel tape machine (measured in inches per second, or ips) significantly impacts sound quality by affecting frequency response, noise floor, dynamic range, and tonal character.

High-Frequency Response (Treble)

- 15 ips
  - Roll-off: High frequencies (above ~15 kHz) are gently attenuated due to limitations in tape head gap alignment and wavelength constraints.
  - Sound: Smooth, forgiving highs with less harshness, ideal for masking digital glare or brittle sources.
- 30 ips
  - Extended Highs: Captures frequencies beyond 20 kHz, preserving more air, detail, and transient definition (e.g., cymbals, acoustic guitar sparkle).
  - Sound: Crisper, more clinical highs with superior clarity, preferred for high-fidelity classical or jazz recordings.

Midrange (Vocals, Guitars, Keys)

- 15 ips
  - Coloration: Midrange frequencies (1–5 kHz) are subtly emphasized due to the interplay of tape saturation, adding warmth and forwardness.
  - Saturation: Gentle harmonic distortion in the mids creates a glued sound, smoothing out rough edges in vocals or guitars.
- 30 ips
  - Neutrality: Flatter midrange response with less coloration, preserving the natural tonality of instruments.
  - Transient Detail: Faster tape speed captures sharper transients, making mids sound more precise and modern.

Low-Frequency Response (Bass)

- 15 ips
  - Head Bump: A resonant peak around 50–100 Hz (due to tape head geometry) adds warmth and punch to kick drums and basslines.
  - Roll-off: Bass below ~40 Hz may attenuate slightly, but the head bump compensates by enhancing perceived low-end weight.
- 30 ips
  - Tighter Bass: Reduced head bump (shifted higher to ~100–200 Hz) and extended sub-bass response (<30 Hz) for cleaner, more controlled lows.
  - Accuracy: Better linearity in the low end, ideal for electronic music or genres requiring precise bass reproduction.

Noise Floor & Signal-to-Noise Ratio (SNR)

- 15 ips
  - Higher Noise: More audible tape hiss due to slower speed (less magnetic particles passing the head per second). SNR typically ~60–65 dB (use the HISS trim pot to emulate the SNR).
  - Mitigation: Noise reduction systems (e.g., Dolby A) were often used with 15 ips to mask hiss, though this is not necessary here since the HISS trim pot provides greater flexibility.
- 30 ips
  - Lower Noise: Tape hiss is reduced by ~3–6 dB compared to 15 ips, achieving an SNR of ~67–72 dB (use the HISS trim pot to get the required noise level).
  - Clarity: Quieter background noise allows quieter musical details (reverb tails, breath sounds) to remain audible.

Dynamic Range & Saturation

- 15 ips
  - Softer Saturation: Tape saturates earlier, producing warm, musical compression that glues mixes. Favored for rock, soul, and lo-fi aesthetics.
  - MOL (Maximum Output Level): Lower (~+9 dB at 1% THD), encouraging intentional tape distortion for creative effect.
- 30 ips
  - Higher Headroom: Greater MOL (~+12 dB or more) allows louder recordings with cleaner transients and less distortion.
  - Transient Fidelity: Preserves sharp attacks (e.g., snare hits, piano staccato) without smearing.

Summary of Tonal Differences

- **15 ips:** Warmer, thicker lows; forward mids; smooth, rolled-off highs; higher noise; pronounced saturation.
- **30 ips:** Tighter lows; neutral mids; detailed, extended highs; lower noise; cleaner dynamics.

When to Use Each Speed

- Choose 15 IPS if you want:
  - Vintage coloration and glue.
  - A forgiving medium for imperfect recordings.
  - To emphasize analog warmth in rock, blues, or retro genres.
- Choose 30 IPS if you want:
  - High-fidelity transparency.
  - Extended frequency response for acoustic or orchestral music.
  - Minimal noise and distortion in pristine modern productions.

Note: Both speeds remain staples in analog studios, with 15 ips prized for its character and 30 ips for its fidelity. The choice ultimately depends on the desired aesthetic.

Tips: Watch out for tape low-end bump compounding as you bounce group and bus tracks through multiple instances of the P821 MDN Tape plugin. While tracking, roll off the bass and bring it back during mixdown (after tape) to taste. Saturating the tape without adding too much bass is also possible with this method.

HISS: The HISS trim pot gives control over the amount of added tape hiss. Tape hiss is high-frequency noise naturally present in analog magnetic tape recordings. Different tape formulas, due to variations in the size and distribution of magnetic particles, produce varying amounts and characteristics of hiss. Unlike pink or white noise, tape hiss has a distinct character that can only be described as itself—tape hiss.

The following factors influence the P821 MDN Tape hiss character:

- 456 hiss tends to be more noticeable in the mid-to-high frequencies. This can add a vintage character but may be distracting in quieter passages.
- 900 hiss is generally smoother and less intrusive, with a more balanced frequency distribution.
- At 30 ips, hiss will be reduced when compared to 15 ips because faster tape speed increases the signal-to-noise ratio.

LO-FI: Transforms limitations into art, celebrating the beauty of imperfection. It's less about the fidelity itself and more about crafting a vibe that feels authentic, relatable, and timeless. A lo-fi production style is characterized by intentionally raw, unpolished sound quality that embraces imperfections typically considered flaws in professional recordings. These imperfections (such as background noise, tape hiss, distortion, or warbly pitch) are used as deliberate aesthetic choices to evoke warmth, nostalgia, and intimacy. When LO-FI is activated, many parameters become exaggerated, including wow & flutter, hiss, LPF & HPF constraints, along with a mid-frequency presence boost around 1 kHz.

MODULATION Circuit: Can be disabled to turn the wow & flutter effect off entirely when no movement is desired.

WOW & FLUTTER: Offer a range of creative possibilities, with sliders adjusting the effect from 0% to 100%. Think of Wow as frequency shift/drift while Flutter as amplitude speed variation.

The 10% setting calibrates to the internal predefined values for each tape formula and speed. The sliders then adjust the effect based on percentages of this predefined baseline. Slow reflects typical tape machine tolerances. Setting it to 0% won't completely halt the tape machine's wow and flutter. You need to turn off the modulation circuit in this case.

FAST setting: Amplifies the wow and flutter for creative purposes. In this mode, both wow (pitch divergence from the reference frequency) and flutter (how fast or slow the pitch shifts) can be increased to create unique sonic textures.

Note: Wow refers to a slow, large pitch variation caused by irregularities in the tape's motion, often leading to noticeable pitch shifts. Flutter, on the other hand, involves faster, smaller pitch fluctuations that are subtler but still perceptible. Both are caused by inconsistencies in the movement of the tape during playback or recording, resulting in slight but audible changes in pitch.

HPF/LPF: High-pass and low-pass filters that apply to the delayed tape signal.

TAPE DELAY: Tape delay time is determined by the speed of the tape and the spacing between the record head and the playback head. The faster the tape speed, the shorter the delay time.

Initially, tape delay was primarily used to create what is called a slapback delay—a short, distinctive echo effect (typically between 60–150 milliseconds) that became a hallmark of 1950s rockabilly, country, and early rock 'n' roll. It creates a tight, rhythmic slap of a single repeat, adding depth and liveliness to vocals, guitars, and snare drums.

IPS: Choice of 7.5, 15 and 30 ips for a delay of 400, 200, 100 ms respectively.

FEEDBK: Feedback determines how much of the delayed signal is fed back into the input of the delay line. This process continuously recycles the delayed signal, creating a repeating echo effect.

OFFSET: Adjusts the heads closer or farther away in relation to each other from the default maximum of 3". Use to fine-tune the delay as needed.

BLEND: Blends the delayed signal with the tape signal.

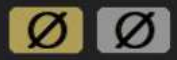
Physical Tape Delay, Explained

- Tape Machine Setup:
  - Requires a 3-head tape recorder (erase, record, and playback heads).
  - The distance between the record head (which writes the signal to tape) and the playback head (which reads the tape) creates the delay time.
- Delay Time Formula:
  Delay Time (seconds) = Distance Between Heads (inches) / Tape Speed (inches per second)
  Example: If heads are 3”apart and tape speed is 15 ips, delay time = 3/15 = 0.2 seconds (200 ms).
- Signal Flow:
  - The original signal is recorded onto the tape by the record head.
  - The tape passes to the playback head, which reads the delayed signal.
  - The delayed signal is mixed back with the original (live) signal, creating the slapback effect.
- Adjusting the Effect:
  - Tape Speed: Slower speeds (7.5 ips) increase delay time; faster speeds (15 ips) shorten it.
  - Feedback: For a single repeat, no feedback loop is used. For multiple repeats, some machines allow routing the playback signal back into the record input (rare in classic slapback).

The following table describes 3” of head spacing at different tape speeds:

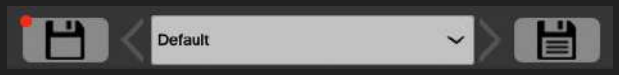
Tape Speed (ips)	Delay Time (ms)	Notes
7.5	400	Long, noticeable slapback (common in rockabilly and vintage recordings).
15	200	Classic slapback range (e.g., Elvis Presley’s Sun Records sessions).
30	100	Tight, subtle echo (rarely used for slapback due to brevity).

Bypass the processing of the raw signal.



Polarity Flip inverts the audio signal.

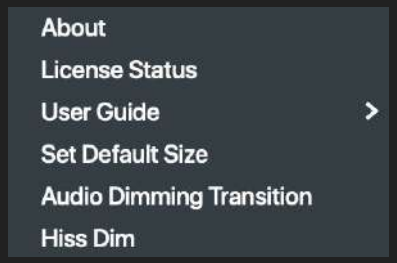
Stage Focus affects the location of elements within the soundstage. When enabled, separation, space and separation between elements are prioritized. When disabled, elements are tighter, more up front and more focused.



The Preset Browser allows you to browse, load, and save presets. Save over the current preset by clicking the Save icon, or create a new preset with the Save As icon. When you alter the preset from its original parameters, a red dot will appear next to the Save icon.

Updating the software will overwrite factory presets unless you deselect the install presets option, but user-created presets with names different from the factory preset names will remain intact.

A/B allows for temporary storage (not saved within the preset) for quick comparison between A & B (no need to move the mouse when flipping between the two). The arrow button allows for copying from the active side to the inactive side. You can also load a preset into the temporary storage.



About: Check the version number or demo expiration date.

License Status: Manage your license and unlock upgrade options.

User Guide: Open the user guide.

Set Default Size: Use the window size of the current instance as the default size for new instances.

Audio Dimming Transition: When enabled, it dips the volume momentarily as you switch emulations.

Hiss Dim: When enabled, tape hiss is reduced to inaudible levels when the DAW transport is stopped.

Tips & Tricks

- [Clay Blair] You can't escape the low-end buildup. That is what tape does. With 30 ips, you'll get less of that and a clearer top-end response, but you lose some color. Any tape machine is going to have a large low-end bump from the head as well as the NAB equalization. It's beautiful! You can also cut, which is what I usually have to do when I record with a real tape machine. Everything gets high-pass filtered on those mixes. Much of [what the Stephens provides] is harmonic and beautiful, hence the obsession with its unique saturation.

- [Hilton Stroud] Having W&F (wow & flutter) off helps better when stacking instances across groups/buses and mix-bus. This is mostly when used in the dance music genre, especially on drums, kick and bass.

- A -18 dB signal would likely register differently on 456 and 900 reel tape formulas due to their differing magnetic properties and formulations. The difference in registration would primarily be in tonal coloration, noise floor, and dynamic response. You must push further into the 900 formula than the 456 to achieve tape compression and coloration.

- FEEDBACK can transform simple delays into powerful creative tools. Low feedback, typically around 10-30%, creates a single, short repeat, resulting in a classic slapback echo often used in rockabilly, country, and vintage-style recordings. Moderate feedback in the 30-60% range produces a few distinct repeats that can add rhythmic interest to guitars, vocals, or synths. For more atmospheric textures, high feedback between 60-90% generates long, evolving echoes that fill out a mix with a sense of space. Pushing feedback to the extreme, 100% or more, causes the delay to self-oscillate, leading to experimental effects that are often used in sound design and avant-garde music.

Managing Presets

Basics

If the option to install presets is not de-selected during installation, the installer will overwrite the factory presets. User-created presets will remain unaltered. To safeguard any modifications made to factory presets and preserve them during an update, make sure to deselect the install presets option when running the installer. Remember to save your presets with different names using the 'save as' option located to the right of the preset browser.

Backing Up Presets

Presets can be backed up and restored using your operating system's file manager. Simply perform a copy/paste of either individual preset files or the full presets folder to a backup location of your choosing. The presets folder can be found in the following locations:

For Windows

'C:\Users\Public\Documents\Pulsar Modular\P821 MDN Tape\Presets'

For macOS

'/Users/Shared/Pulsar Modular/P821 MDN Tape/Presets'

Modifier keys

Temporary bypass the parameter
CTRL+ALT (Windows) or CMD+OPTION (macOS) +Mouseover:

- Low & High Shelf.
- Low & High Bias.
- Lo-fi Range.
- Tape Delay Circuit: Feedback, Offset, Blend.
- Band GAIN.

Cycle between the options
Mouse left-click for forward, right-click for backward.

- Speed: 15 and 30 ips.
- Formula: 456 and 900.
- Deck: Tape and Thru.

Counter Two knobs for compensation
SHIFT

- Input & Output knob (when link is not active).
- Shelves and Bias: Low & High.

Same Direction Two knobs
SHIFT+ALT (Windows) or SHIFT+OPTION (macOS):

- Input & Output knob (when link is not active).
- Shelves and Bias: Low & High.

Enable parameters for automation (Pro Tools only)
Control + Command + Option (^ + ⌘ + ⌥) on macOS or CTRL + ALT + START () on Windows.

Fine-tuning sliders, knobs, and other controls
Hold control (^) on macOS or CTRL on Windows, then click and drag. Alternatively, right-click and drag without a key modifier.

Return controls to their default state
Press option (⌥) on macOS or ALT on Windows and left click. Alternatively, double-click without a key modifier.

Uninstalling P821 MDN Tape

For Windows

- VST3: 'C:\Program Files\Common Files\VST3', locate the 'P821 MDN Tape.vst3' folder and delete it.
- AAX: 'C:\Program Files\Common Files\Avid\Audio\Plug-Ins', locate the 'P821 MDN Tape.aaxplugin' folder and delete it.
- Shared: 'C:\Users\Public\Documents\Pulsar Modular', locate the 'P821 MDN Tape' folder and delete it. This folder contains the user guide and presets. If no other folders exist under 'Pulsar Modular', this can be deleted as well.

For macOS

- AU: '/Library/Audio/Plug-Ins/Components', locate the 'P821 MDN Tape.component' file and delete it.
- VST3: '/Library/Audio/Plug-Ins/VST3', locate the 'P821 MDN Tape.vst3' folder and delete it.
- AAX: '/Library/Application Support/Avid/Audio/Plug-Ins', locate the 'P821 MDN Tape.aaxplugin' folder and delete it.
- Shared: '/Users/Shared/Pulsar Modular', locate the 'P821 MDN Tape' folder and delete it. This folder contains the user guide and presets. If no other folders exist under 'Pulsar Modular', this can be deleted as well.

Restrictions

The USER may not reverse engineer, disassemble, re-sample, create Impulse Response profiles or re-record, decompile, modify, alter in whole or in part PULSAR NOVATION LTD audio plugins for the intent of renting, leasing, distributing, repackaging (whether for profit or not).

PULSAR MODULAR

TESTIMONIALS

Listed alphabetically, as we value each story equally.

Dale Becker
Grammy Winning Producer/Mastering Engineer
Billie Elish, Doja Cat, Katy Perry, Kayne west

“The P821 just sounds like tape, it's crazy. Best in the box for sure! The low end extension is really remarkable.”

Clay Blair
Producer/Engineer
The War on Drugs, Counting Crows, The Redwalls, Andrew Bird

“The Stephens 821 is the best-sounding tape machine ever made, and the P821 MDN Tape is the best tape machine in a plugin and unlike anything out there by far. It was a joy to hear this plugin doing the scientific process as it was designed. What more is there to say? It's that good. No need to hype with silly marketing; just listen to it.”

Ken Caillat
Multi Grammy Winning Producer/Engineer
Fleetwood Mac, Joni Mitchell, Paul McCartney, Pink Floyd

“I know this machine well as I used it to record and mix Fleetwood Mac’s Rumours album on it at the old Producer’s Workshop. Finally a tape emulation that doesn't sound like a mess. Reminds me of that beautiful sound of the original Stephens tape machine. That thing made me sound like a genius and the plugin is just incredible.”

Ryan Freeland
Multi Grammy Winning Producer/Engineer
Ray Lamontagne, Aimee Mann, Bonnie Raitt, Morrissey

“Not only is the P821 MDN my new favorite analog tape plug-in, it's also my new favorite lo-fi, flange, and slap delay effect - all with an intuitive user interface and great graphical feedback. I find myself using it as much for the lo-fi, flange, and delay as I do for the tape saturation which itself adds a wonderful, glued finish to my mix and gives me that glorious 15ips low end bump if I need it. Marc has done it again giving us engineers another great tool to elevate our mixes and our creativity.”

Bob Olhsson
Legendary Motown Producer/Engineer

“Wow! Pro Tools at 96k, it sounds as transparent and huge as I remember hearing from the wonderful Stephens in Armin Steiner's Sound Labs mix room.”

Alex Pasco
Grammy Winning Producer/Engineer
Paul McCartney, Adele, Beck, Foo Fighters

“I had a chance to try out the P821 plugin and it was fantastic! It really opened up the mix in a crazy way. I was expecting your standard "tape plugin" thing but it is totally its own thing. My mix sounds bigger and with more depth than before but without any tonal change. I'm not sure exactly what you're looking for in terms of an endorsement or testimonial, but I've used my fair share of tape emulations in my day. The P821 MDN Tape plugin really blew me away. It feels like you’re actually working with tape—huge sound, tons of depth, and it reacts to input in a way that’s super organic. It’s really impressive how accurate this emulation is; it’s the closest I’ve heard. It’s now a go-to in my mixes, and I can already tell it’ll be a part of my sound moving forward."

Dave Pensado
Multi Grammy Winning Producer/Engineer
Beyonce, Justin Timberlake, Mariah Carey, Shakira

“This sounds F**** insane! If you want to make a sound come to life, use the P821 MDN plugin. Effortless Magic. Marc did it again!”

ROC.am
Producer/Engineer
Rihanna, H.E.R, Mariah Carey, Erykah, Badu, The Roots

“I put this on a Kick drum and instantly was like, what the hell! The low end dropped way lower but got way more clear. How on earth did you do this??? This on background vocals too is just dope. This plugin sounds incredible.”

Bill Schnee
Multi Grammy Winning Legendary Producer/Engineer
Steely Dan, Whitney Houston, Natalie Cole, Dire Straits, Ringo

“The Stephens tape machine was without a doubt the best sounding 24 track I ever heard. I spent countless hours at Producer’s Workshop recording and mixing with it. It really pained me not to get one when I built my studio in 1980. (The P821) sounds good. Better than the other tape emulations I have. How great to have the vibe of that incredible sounding tape machine on a plug in!”

Dweezil Zappa
Musician, Producer/Engineer

"When I tell you that the P821 MDN tape machine plug-in offers the very best 456 emulation in the game and instant access to authentic creamy tape flange, it's because I heard it for myself in the first 5 minutes. We all know that tape machine plug-ins offer the illusion of access to the imperfect world of analog colors that paint the audio pictures we love but some are better than others and this one rises above. You will see for yourself that the P821 MDN delivers on everything we all love about tape, transient control, saturation, modulation, delays and tonal character. Run to test it on individual tracks, groups and your final master."

GUI Concept:	Marc Daniel Nelson		
Plugin Engine Design:	Ziad Sidawi		
Plugin Development:	Pulsar Modular Team in collaboration with Marc Daniel Nelson		
GUI Development:	Max Ponomaryov / azzimov GUI design—www.behance.net/azzimov		
User Guide:	Kevin Eagles and Ziad Sidawi		
Testers:	Leo Alvarez	Paul Godfrey	Niklas Silen
	Clay Blair	Gus Granite	Brad Smith
	Kevin Eagles	Matt Gray	Marc Smith
	Alex Elliot	Ry Herma	Hilton Stroud
	Thomas Etholm-Kjeldsen	Ilpo Kärkkäinen	Stephen Wright
	Jason Fernandez	Matthias Klein	

Special Thanks: Clay Blair, owner of Boulevard Recording (formerly Producer's Workshop)

Please kindly report any errors or omissions in this user guide to psupport@pulsarmodular.com

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