P21 ATLAS

MASTER-BUS STABILIZATION LIMITER

User Guide

Version 1.0

Pulsar Modular

PULSAR™ MODULAR

Preface

When engineers describe what they fight against in a mix, the pattern is consistent. The mix is technically right, but elements keep stepping out of frame. Something jumps forward and has to be pushed back. Something else drifts and has to be corrected. Even after all the fixing, there are still moments where an element falls out of place and then back into place. The engineer is fighting the mix to hold its frame.

P21 Atlas was built to stop that fighting. The engine holds the program coherent across its full length, so elements stay where the mix put them. Nothing jumps. Nothing drifts. Nothing falls out and back in. The frame holds. A limiter can hold a frame too, but it makes the whole signal edgy and aggressive in the process. Atlas holds the frame while continuing to represent the original signal.

Atlas delivers coherence. A mix made from stems recorded in different rooms, on different days, by different engineers, presents as one performance in one space. A film built from library cues, recorded dialogue, location sound, and sound design lands as one continuous world rather than a sequence of differently treated pieces. A mastering bounce that already arrived mixed receives a final pass that makes it cohere as a single statement rather than a collection of decisions.

Three consequences engineers value follow from this: the program is delivered loud without the peaks being flattened, the dynamic relationships the recording captured are preserved, and silence between events stays silent rather than being lifted by the engine's release.

Engineers describe Atlas in terms of how the music feels, not loudness numbers. The mix feels glued. The film feels of one piece. The master feels finished. Coherence is the word.

I wanted neither to surrender the snare nor to flatten the vocal. I did not want effects jumping out of the scene or music burying the dialogue. I wanted a stage that delivered loudness without compromising the elements that make music and film feel alive. That is why I designed P21 Atlas.

Ziad Sidawi

Pulsar Modular

A note on workflow

Atlas does not behave like a conventional limiter. Set the following habits aside:

- **Ceiling is not a limiter threshold.** There is no wall being hit. The engine shapes the program so peaks land at Ceiling lawfully.
- **GR readings show balance, not workload.** GR SLOW and GR FAST show which layer is engaging. The balance between them is more useful than either value alone.
- **A quiet GR meter doesn't mean Atlas isn't working.** Conventional limiters show their work on the GR meter. Atlas's qualities are heard, not metered: sustained low-frequency presence, coordinated transients, preserved micro-dynamics.
- **Silence stays silent.** Conventional limiters lift the noise floor in gaps between vocal phrases, between drum hits, after a cymbal decays. Atlas does not. The breathing engineers learn to tolerate on conventional dynamics is not present.

1. About P21 Atlas

P21 Atlas is a master-bus stabilization limiter. The engine stabilizes a program, stereo or multichannel, so elements stay in their intended relationships, delivering loudness and density without the artifacts conventional dynamics tools introduce. Atlas leaves the program with headroom intact; engineers seeking clipping character as a deliberate tool typically follow Atlas with a dedicated clipper.

Atlas is used on master buses by mastering engineers, on buses, stems and full mixes by mix engineers, on cinema and music masters in immersive formats from 5.1 through 9.1.6, and on the main bus by FOH engineers running live sound, where 4 samples of latency clears the bar for live use.

Editions

Two editions, one engine. Atlas Stereo operates on mono and stereo buses. Atlas Immersive operates on every channel format Atlas supports, from mono through 9.1.6 (see §4 for the full list). The edition is set at purchase, and Stereo can be upgraded to Immersive at any time. If an Atlas Stereo license loads on a multichannel bus, the plugin recognises the unsupported layout and passes audio through unchanged.

Getting started

Atlas installs as VST3, AU, and AAX on macOS and Windows. After installation and authorization, instantiate Atlas on a master bus (or stem) in your DAW. On first instantiation, the readout panel begins measuring; press DAW play to start a fresh measurement. The default preset is a conservative starting point and engages the engine modestly while leaving the program with headroom intact.

For installation help, license activation, and system requirements, see the support pages at pulsarmodular.com.

2. Chain Topology

Two approaches to Atlas in a chain are coherent.

Atlas standalone. Atlas is the final stage on the master bus. The engine does the stabilization work and leaves the program with headroom intact. Gain is set to where the material rewards it. TRIM stays at 0. Ceiling holds the program below the **distribution-safe peak. No downstream stage is required.**

Atlas driving a clipper. For deliberate clipping character, place a dedicated clipper, not a limiter, downstream of Atlas. Gain stays conservative. TRIM is positive to drive the clipper. The clipper provides character and final peak control. See §6.5 for drive-depth guidance.

> **A limiter downstream of Atlas is not the correct chain.** Atlas leaves headroom by design; a brickwall limiter has little useful work to do, and driving Atlas hard to give it something to chew on works against the engine's character. If aggressive final peak shaping is needed, a clipper handles it; a limiter does not.
>
> **Evaluate Atlas alone first.** See the discipline note at the top of §6.

3. Controls

Gain → engine controls → TRIM. The chapter follows the signal flow. The seven controls fall into three groups:

- **Gain and Ceiling: engagement controls.** They decide how hard the engine works.
- **Composure, GRIP, Energy, Foresight: character controls.** They shape what that work sounds like.
- **TRIM: output stage.** It sets the level after the engine, without feeding back into engine work.

The character controls are best learned by listening; the sections that follow describe each.

3.1 Gain

Drives signal into the engine. Gain is permission for stabilization work; the engine spends that permission on keeping the signal stable below Ceiling, and what remains becomes loudness lift.

The GAIN value brightens when stabilization has consumed the full Gain and no lift remains. Intermittent brightness on dense moments is normal; steady brightness means the working limit has been reached for this material at this Gain.

> **Gain and Ceiling don't gain-stage each other.** Both close the gap between source peaks and Ceiling: Gain raises peaks, Ceiling lowers the cap. Using them in opposition, raising Gain to make up for a lower Ceiling or vice versa, doubles the engine work and adds compression character the engineer did not intend. Pick one direction based on intent. TRIM, not Gain or Ceiling, sets output level.

When to use Gain

- **Source already triggers the engine.** If GR SLOW or GR FAST is active at Gain 0, leave Gain alone.
- **Stabilizing a stem or bus (in place of a compressor or limiter).** Leave Gain at 0. Lower Ceiling until the engine engages, then compensate output level with TRIM.
- **Pushing toward 0 dBFS for mastering.** Set Ceiling at 0 (or the platform target if Atlas is last) and push Gain until peaks reach it. On quiet source material (classical, vintage acoustic), Gain may need +8 to +12 dB to reach modern listening range.

3.2 Ceiling

Sets the upper bound on program peaks. The engine stabilizes the program below Ceiling; lowering Ceiling or raising Gain works the engine harder.

> **Ceiling is not a limiter threshold.** In a conventional limiter, the threshold is the line audio hits, and what crosses it gets compressed. Atlas does not work that way. The engine shapes the program so peaks land at Ceiling lawfully; Atlas does not let peaks arrive at Ceiling and then squeeze them. There is no wall being hit. Setting Ceiling lower than source peak level does not invite distortion or pumping the way pushing into a brickwall limiter does; it engages the engine's working range. The character on the way to Ceiling is what the engine controls deliver.

Typical settings

The engine engages when peaks would otherwise exceed Ceiling. Two paths reach that condition, depending on intent:

- **Preserving native loudness.** Lower Ceiling below source peaks until the engine triggers. Typical on dynamic recordings (jazz, classical, orchestral, vintage acoustic) where the engineer wants the program stabilized but not lifted: Ceiling at −2.0 to −4.0 with Gain modest.
- **Raising loudness.** Keep Ceiling at 0.0 (or at the platform target when Atlas is the last stage) and push Gain until peaks reach it. Typical on modern streaming material with a downstream clipper, and on dynamic recordings the engineer wants brought up to modern listening range: Gain substantial (+4 to +12 dB), Ceiling at 0.0.

Both paths land the engine in its working range. The choice is whether to bring Ceiling to the program or bring the program to Ceiling.

3.3 Composure

Anchors the sustained body of the music. Higher values produce a more contained, anchored feel; lower values preserve more breathing room and air. Composure's work appears on the slow layer of the GR meter (GR SLOW).

What Composure controls perceptually

- Spatial enclosure. Low Composure preserves open air and breathing room. High Composure tightens the music into a more contained space.
- Body of percussive elements. On kick-driven material, moderate Composure lets the kick bloom with sustained body rather than just hitting and ending. Too low and the kick feels flat.
- Section management on dynamic material. Composure is the primary control for handling differences between verse and chorus density. The chorus generally needs more Composure to feel contained; the verse needs less to give the vocal air.

3.4 GRIP

Shapes the firmness of the music and the character of the bass region. GRIP's work appears on the fast layer of the GR meter (GR FAST). When the engine is doing meaningful work on the program, both GR SLOW (Composure) and GR FAST (GRIP) should show activity; activity on only one layer often means the other control needs attention.

What GRIP controls perceptually

- Material firmness. On rhythmic material, moderate to firm GRIP gives structural firmness. Too low feels acceptable until you hear firmer GRIP.
- Coordination of simultaneous transients. When two elements occur together (vocal plosive and bass attack, kick and low synth, piano chord and drum hit), GRIP controls how tightly Atlas ties their punch together. Low GRIP allows each element to resolve independently. Moderate GRIP creates shared punch where simultaneous events land as one coordinated moment, the way they would in a live acoustic space.
- Bass character. Higher GRIP produces more sustained low-frequency presence between bass events, additional weight and continuous low end on naturally recorded material; kick character moving from tight separation toward sustained presence on dense electronic material. Lower GRIP preserves the source's original bass character with minimal modification.

3.5 Energy

What Energy controls perceptually

Energy has a perceptual window on transient clarity. Too high introduces haze around mid-frequency transients (snare loses snap). Too low loses brightness (sparkle and air at the top end). The right setting lives where transient definition is preserved without smearing.

3.6 Foresight

Anticipates incoming peaks. Foresight does not add reported latency; Atlas remains at 4 samples at any Foresight setting.

What Foresight controls perceptually

On rhythmic material, Foresight moves through four perceptual zones; the boundaries shift with BPM:

- Reactive zone (Foresight too low): catching is so fast it pulls the perceived attack forward in time. Kick and snare combo feels like it arrives slightly before the song's tempo, a rushing sensation against the pocket.
- On-time zone (moderate Foresight): hits land exactly on the beat but with mechanical regularity. Every kick identical, every snare identical. Quantized feel, accurate but lifeless.
- Grooving zone (the sweet spot for the song's BPM): anticipation aligns with the song's natural micro-timing. Hits preserve their human variation. The track grooves.
- Misaligned zone (Foresight too high): anticipation runs ahead of the song's actual timing. The track grooves, but at a different BPM than the song. Atlas's rhythm and the music's rhythm coexist but are out of phase.

How to find the grooving zone

- Find the on-time zone first (where hits feel quantized but accurate).
- Raise Foresight from there until the groove returns.
- If the groove starts feeling out of phase with the song, lower until alignment locks in.
- The window can be narrow. A few Foresight units in either direction can cross the boundary.

Suggested range from session BPM

Atlas reads the tempo reported by the host and displays a suggested sweet-spot range for Foresight on the panel. The range is a starting point, not a target. The Foresight control remains free across its full range, and the grooving zone is always confirmed by ear. Instead of sweeping the entire range to find the on-time zone, begin near the suggested range and listen.

The suggestion will mislead in three cases:

- **Mastering sessions with no BPM set.** Mastering engineers typically load material into a session without setting the tempo to match. The DAW reports its default tempo (commonly 120 BPM), and Atlas computes a range for that reported tempo. Either set the session tempo to match the material, or ignore the suggestion and find the grooving zone by ear.
- **Half-time or double-time material.** Hip-hop at 140 BPM with the kick on every other 2 and 4 grooves at perceived 70. Drum & bass at 170+ often grooves at perceived 85. Reggae one-drops at 75 BPM with rim-shot patterns can feel closer to 150. The session BPM is correct; the grooving zone aligns with the perceived tempo, not the written one. Find Foresight by ear.
- **Material without a steady tempo.** Classical, orchestral, free-time jazz, sound design for film. There is no fixed grid for the engine to align against. The suggestion is not meaningful in the same way. Find the Foresight value by ear from the preset starting point and trust the listening.

Foresight and Gain move together

When you change Gain significantly, the Foresight setting that worked before may no longer fit. Raising Gain makes the engine work harder per event. Foresight values that read as transparent at low Gain can produce audible pumping with the beat when Gain rises. If you raise Gain, raise Foresight back toward the grooving zone for the song's tempo.

3.7 TRIM

Lifts level after the engine. Used to recover headroom or feed a downstream clipper.

TRIM applies after the engine has finished its work and does not affect engine behavior. Range is approximately ±6 dB.

When to reach for TRIM

- On dense pre-treated material where the engine settles slightly below the desired output level, use TRIM to recover the headroom without re-engaging engine work.
- To drive a downstream clipper for distribution-ready loudness. TRIM lifts the post-engine signal so the clipper has the level it needs.
- When Atlas is the last stage, leave TRIM at 0.

> **TRIM is not for level-matching during A/B comparison.** That role belongs to MATCH (see §6.3). The engineer's reflex from conventional limiters is to compensate output level by trimming the output; with Atlas that reflex distorts the comparison. If Gain is raised to feed the engine and TRIM is then pulled down to match bypass loudness, the comparison hears an overdriven engine that has then been level-trimmed back, not Atlas's actual character at sensible settings.

Use MATCH for level compensation in comparison. Use TRIM for chain purpose: driving a downstream clipper when present, or sitting at 0 when Atlas is last.

> **TRIM PEAK brightness cue.** TRIM PEAK renders brighter on the panel when Atlas's output exceeds 0 dBFS. When Atlas is feeding a downstream clipper, positive TRIM PEAK is normal and intended. When Atlas is the last stage, bring TRIM PEAK at or below 0 by reducing TRIM.

4. Immersive Operation

> **For Atlas Stereo users:** This chapter applies only to Atlas Immersive. The rest of the manual covers stereo operation in full, readers working on stereo material can move to §5.

Atlas Immersive treats every main channel of a multichannel bus as part of one program. The engine analyses all main channels together and applies the same gain reduction to all of them at every sample, which preserves the spatial image: sources do not move within the soundfield as the engine works.

4.1 Supported channel layouts

Atlas Immersive supports the following channel formats. The DAW determines which layouts are available at instantiation based on the bus the plugin is opened on. Atlas adapts its readout panel layout and behavior automatically to match the bus format.

Mono, stereo, 5.0, 5.1, 7.0, 7.1, 5.0.4, 5.1.4, 7.0.4, 7.1.4, 9.1.6.

Mono and stereo behave as they do in Atlas Stereo. Surround and immersive formats are unique to Atlas Immersive.

The listed formats cover the channel layouts used in commercial music and cinema immersive deliveries (Dolby Atmos beds, DTS:X, Auro-3D up to 9.1.6). Less common layouts (LCRS, 22.2, custom configurations) may be exposed by the host depending on the DAW; Atlas adapts to any standard layout the host presents. If a layout is not recognised, Atlas reports the unsupported configuration and passes audio through unchanged.

4.2 Channel layout indicator

The current channel layout is displayed next to the P21 ATLAS product name in the plugin header. The indicator shows the bus format Atlas is currently operating on (for example, **STEREO, 5.1, 7.1.4**). This confirms at a glance which layout the engine has detected and which readouts are active on the panel.

4.3 What changes in the readout panel

The panel adapts to the bus format. Three differences are worth knowing:

- **LFE PEAK row** appears on every layout that carries an LFE channel (5.1, 7.1, 5.1.4, 7.1.4, 9.1.6). It shows the true-peak max-hold of the LFE channel, measured independently from the main channels. A threshold cue at −3 dBFS provides a conservative visual reference for LFE peak levels; verify the platform-specific

target before delivery. Click the row to reset both the held value and the threshold cue.

- **CORR row is hidden on non-stereo layouts.** Stereo correlation is a stereo concept and does not apply to mono, surround, or immersive formats. On those formats the CORR row is removed from the panel rather than shown with a meaningless value. The row returns automatically if Atlas is moved back onto a stereo bus.
- **Window height adapts to the layout at instantiation.** Larger immersive formats need slightly more vertical space for the additional readouts. Atlas sizes its window appropriately when opened on each bus format. The size is set at instantiation; changing the host bus format requires reinstantiating the plugin.

4.4 Engine behavior

Shared GR across main channels. Every main channel receives the same gain reduction at every sample. This preserves the spatial image but differs from per-channel limiters, which can hold a rear transient down independently of the front. On music immersive material this is rarely a concern; rear and height activity is typically ambient and the shared GR is inaudible as a spatial effect. On cinema material with aggressive rear or height transients, the shared GR can become audible as a level dip on the front; handle that transient upstream of Atlas on the object or stem itself, leaving Atlas to do bus-level stabilization on a cleaner program.

LFE is separate. The LFE channel doesn't enter the engine's analysis, and the gain reduction applied to main channels is not applied to LFE. Apple's Atmos Music spec requires full-frequency content not be present in the LFE channel of the BWF ADM, so the LFE must be band-limited upstream of Atlas before delivery. See §4.3 for the LFE PEAK row.

4.5 Working tips for immersive material

- **Start from a stereo preset that matches the source character.** The character presets in §7 were tuned on stereo material; the underlying controls behave the same way on multichannel buses, but the source character of immersive material (orchestral cinema, dialog-driven post, music with sparse rear and height activity) can differ from the stereo masters the presets were tuned on. Load the preset whose source description fits, then expect to adjust by ear.

- **Commit on the reference reproduction system; QC on binaural.** Commit settings on the full reproduction system (7.1.4 or larger). Binaural rendering is a required QC pass for Atmos Music delivery, since the majority of listeners hear the result through headphones; the Dolby Atmos Production Suite binaural output is a reasonable approximation of Apple Music's Spatial Audio rendering when set to Mid. The binaural pass is QC, not the primary monitor.
- **Watch the LFE PEAK row.** Persistent over-threshold readings indicate LFE peaks the mix should address upstream of Atlas. On Atmos Music work, the LFE must already be band-limited per Apple's spec (§4.4); the row provides a level check, not a content check.
- **Ceiling for Atmos Music when Atlas is the last stage.** Atmos Music streaming requires a true-peak ceiling of −1 dBTP. When Atlas is the last stage before delivery, set Ceiling at −1 to match the platform target. When a downstream clipper handles the final ceiling, Ceiling at 0 leaves the work to that stage. The general source-character guidance in §3.2 still applies.
- **Verify delivery loudness against the post-TRIM LUFS-I readout.** Platform targets:

  Atmos Music streaming (Apple Music, Tidal, Amazon Music): −18 LUFS-I integrated, −1 dBTP true-peak. Exceeding the integrated target can be rejected at QC.

  Netflix near-field and similar OTT: −27 LKFS (±2 LU) dialog-gated, true-peak limiters at −2.3 dBTP on beds and objects. Peak enforcement is strict on the 5.1 and stereo rerenders, not on the Atmos master itself.

  Theatrical Atmos: no fixed LKFS specification; mixed to 85 dB SPL room reference.
- **If LUFS-I rides too high, reduce Gain rather than pulling TRIM down.** TRIM negative cancels engine work.

4.6 Character on immersive material

Atlas's character on multichannel material is consistent with its character on stereo: sustained low-frequency presence, coordinated transients, preserved micro-dynamics, and the property of leaving silent regions silent. The silence-stays-silent property is particularly valuable on immersive work, where the spatial impression depends on rear and height channels remaining quiet during dialogue and sparse passages. Conventional master-bus dynamics on immersive material can lift rear ambience between events in a way that flattens the soundfield; Atlas does not.

On music immersive material, the engine works much as it does on stereo, with the same control relationships. GRIP, Energy, and Foresight behave identically across formats; the grooving zone for rhythmic immersive material sits at similar Foresight values as for the same source in stereo.

On cinema material, the engine's tendency to preserve silence is the most distinguishing characteristic. Dialog scenes with quiet rear ambience stay quiet through the engine; sparse environmental beds do not lift between effects. The shared-GR behavior described in §4.4 is the main consideration on action-heavy material; for dialog-driven sequences, Atlas behaves transparently.

4.7 Atlas in an Atmos workflow

Atlas Immersive can be placed at four points in the Atmos workflow:

- **On the bed bus inside the Atmos session.** Atlas processes the 7.1.2 bed. Objects route directly to the renderer and bypass Atlas. Use this when bed-only stabilization is what is wanted.
- **On a post-render bounce of the full Atmos render.** Use this for whole-program stabilization across 5.1.4, 7.1.4, or 9.1.6. Atlas applies to the program exactly as listeners hear it.
- **On the stereo rerender.** Atlas can be used on the stereo rerender derived from an Atmos session for platforms that require non-immersive delivery. Atlas Stereo or Atlas Immersive both work; engine behavior is identical to ordinary stereo operation.
- **On the binaural rerender.** For Apple Music Spatial Audio delivery, a binaural rerender is part of the QC chain. Atlas can be used on this rerender if final adjustments are needed before delivery, but most engineers commit on the multichannel master and let the binaural rerender pass through.

When Atlas is on the bed, the renderer's preview (including binaural) reflects Atlas's processing. When placed after rendering, monitor the post-Atlas bounce directly.

5. Reading the Panel

The readout panel shows what is happening to the signal at each stage. The values are diagnostic, not decorative. The panel is organized to mirror the signal flow: input meter on the left, then engine readouts, the TRIM stage, and the post-TRIM measurements that describe the file leaving the plugin. The plugin header above the panel shows the product name and the current channel layout indicator (see §4.2).

5.1 Input meter

Bar meters show the signal arriving at the engine, one per channel on the current bus. A peak-hold dash on each bar marks the highest peak observed since the last reset, in bright phosphor against the dimmer bar fill. A numeric peak-hold readout sits at the top of each bar and reads the held value in dBFS.

Click anywhere on a channel's bar or numeric readout to reset that channel's peak-hold. Each channel resets independently.

[*Atlas Immersive*] On Atlas Immersive, the meter shows every channel of the current bus, including LFE; each behaves the same way.

5.2 Engine output readouts

Tapped before TRIM; describe what the engine delivered.

- **PEAK OUT:** sample peak at engine output.
- **TP MAX:** true-peak max-hold. Alarm dot flashes if file output ever exceeds 0 dBFS. Click to clear.
- **CORR:** stereo correlation. +1.0 mono, 0 fully decorrelated, −1.0 fully out of phase. Hidden on non-stereo layouts.
- **GR SLOW / GR FAST:** gain reduction on the slow and fast layers. Bars show relative magnitude. On multichannel buses, this single GR value is shared across all main channels (see §4.4); there is no per-channel GR display, and the LFE is not included in GR calculation.
- **GR MAX:** max-hold across both layers. Click to reset.
- [*Atlas Immersive*] **LFE PEAK:** true-peak max-hold of the LFE channel, measured independently from the main channels. Appears on layouts that carry LFE (5.1, 7.1, 5.1.4, 7.1.4, 9.1.6). Threshold cue at −3 dBFS provides a conservative visual reference. The LFE channel is monitored but not processed by Atlas (see §4.4).

5.3 TRIM

A small dial paired with two readouts. The dial sets the post-engine level shift in dB.

- **TRIM:** the current dial value, approximately ±6 dB.
- **TRIM PEAK:** peak level at the plugin output. When TRIM PEAK reads positive, the file output is above 0 dBFS, typically because TRIM is feeding a downstream clipper.

5.4 Post-TRIM measurements

These readouts tap the plugin output, after TRIM. They describe the file that leaves Atlas.

- **LUFS-I:** integrated loudness. Click to reset.
- **MATCH △:** integrated-loudness difference between input and output. Updates continuously. Negative means Atlas is adding loudness; positive means output is quieter than input. The displayed value is what MATCH compensates when engaged.
- **LUFS-S:** short-term loudness, 3 second window.
- **LUFS-M:** momentary loudness, 400 ms window.
- **LRA:** loudness range. The dynamic distance between quiet and loud passages. Click to reset.
- **PLR:** peak-to-loudness ratio. Higher values mean more dynamic range, lower values mean more density.

5.5 Reset and transport behavior

A global reset button clears every accumulating readout at once: LUFS-I, LUFS-S, LUFS-M, LRA, MATCH △, TP MAX (and its alarm dot), TRIM PEAK, GR MAX, LFE PEAK (where present), and all input peak-holds.

Individual rows that hold accumulated state (LUFS-I, LRA, TP MAX, TRIM PEAK, GR MAX, LFE PEAK where present, and each input channel's peak-hold) also accept click-to-reset on their own row.

Pressing DAW play resets every accumulating readout and starts a fresh measurement. Pressing DAW stop freezes the readouts at their last values, giving the engineer a stable reference to read.

5.6 Interface conventions

A few interactions are consistent across the interface:

- **Click any readout row to reset that row.** See §5.5 for the full list of accumulating readouts.
- **Double-click any control to return it to its preset default.** Returns the control to the value held by the currently loaded preset, not to zero.
- **Shift-drag for fine adjustment.** Holding Shift while dragging any control reduces the sensitivity for precise tuning.
- **Right-click any control to type a value directly.** Useful for matching reference settings exactly or for fine numerical adjustments.

5.7 Preset management

The preset browser. Click the preset name at the top of the plugin to open the browser. The selector also has previous/next arrows to step through presets without opening the full browser.

The browser has two panes. The left pane lists folders, including the built-in **Favorites** folder and **Presets** (the factory library), plus any folders the engineer has created. The right pane lists the presets inside the selected folder, with a star icon next to each name that toggles favorites membership.

Controls along the bottom of the browser:

- **New Folder.** Creates a folder for organising user presets.
- **Save.** Saves the current control values into the currently selected preset, overwriting it.
- **Save as.** Saves the current control values as a new preset under a name the engineer enters.
- **Rename.** Renames the selected preset.
- **Delete.** Removes the selected user preset. Factory presets cannot be deleted.
- **Close.** Dismisses the browser; the previously selected preset remains loaded.

Factory and user presets. When installing an update, the installer will overwrite factory presets unless the “Install Presets” option is deselected during installation. User presets are never affected by updates.

Protecting modifications to factory presets. To protect any modifications made to factory presets, save them with new names using Save As in the preset browser before updating. The renamed preset becomes a user preset and is preserved through updates.

Backing up presets. Presets are stored as files on the local machine and can be backed up by copying them to any location:

- **Windows:** C:\Users\Public\Documents\Pulsar Modular\P21 Atlas\Presets
- **macOS:** /Users/Shared/Pulsar Modular/P21 Atlas/Presets

6. Workflow

> **Tune Atlas with downstream stages bypassed.** Commit Gain, the engine controls, and TRIM with any downstream stage bypassed. Re-engage the downstream stage only after Atlas is settled. Tuning Atlas while a downstream stage is hitting peaks pollutes every judgment: the engineer cannot tell which stage is producing the artifacts they hear, and reflex adjustments at Atlas may be compensating for behavior originating downstream.

6.1 A first-session listening protocol

To learn what Atlas contributes before integrating it into a full chain, run a single isolation session on familiar material:

- Bypass every plugin after Atlas.
- Load the preset whose source-character description matches your track (§7).
- Activate MATCH.
- Toggle BYPASS at equal loudness and listen.

Listen for the absence of familiar limiter artifacts: preserved transients, no breathing between phrases, low-end weight that stays seated, reverb tails that decay naturally. Atlas's character rarely registers as the presence of something obviously new; the qualities to listen for are described in the workflow note at the front of this guide.

Once Atlas's contribution is identifiable in isolation, reintegrate your chain and return to normal workflow.

6.2 Starting from a preset

Load the preset closest to the source character of the material. See §7. Listen. The preset is a starting point, not an ending. Move controls by ear from there.

6.3 MATCH for fair comparison

MATCH delivers fair A/B comparison against BYPASS. The MATCH △ readout in the loudness panel runs continuously and shows how Atlas is currently affecting integrated loudness, typically negative because Atlas adds loudness. Pressing MATCH engages continuous compensation: the live △ is applied to the comparison so that toggling BYPASS switches between two equal-loudness states sample by sample, with the compensation tracking the material as it plays.

MATCH never amplifies, only attenuates. When the output is louder than input (typical), the processed signal is attenuated to match the bypass level. When negative TRIM has pulled the output below input level, the bypass signal is attenuated instead. The comparison stays fair in both directions. Because compensation is continuous rather than a held snapshot, there is nothing to re-capture as the material changes; the live △ updates and the compensation tracks it.

MATCH is a comparison tool, not a permanent state. Engage MATCH for the A/B against bypass, listen, then disengage before committing settings. Leaving MATCH on while working means the engineer is making decisions against a continuously compensated monitor: Atlas's loudness contribution is being canceled in the listening, every verse-to-chorus loudness change is being flattened away, and TRIM and Gain decisions are committed against a signal that disappears as soon as MATCH is disengaged.

> **Do not leave MATCH engaged while working.** Use MATCH to compare, then turn it off and listen to what Atlas is actually doing.
>
> **MATCH and TRIM have different jobs.** A common error is to use TRIM to compensate level for A/B instead of MATCH. The two controls operate at different points in the chain. MATCH applies compensation that affects only the comparison, not the actual output level. TRIM is part of the chain and changes what leaves Atlas. If you reach for TRIM to match levels during comparison, you are also changing the chain's drive into whatever follows and likely cancelling part of the engine's work in the process. Use MATCH for comparison. Use TRIM for chain purpose.

6.4 Verse and chorus relationship

On material with strong verse-chorus contrast, consider automating Composure between sections rather than finding a single compromise value.

The chorus generally needs more Composure to feel contained and powerful. The verse needs less to give the vocal air and presence before the chorus arrives.

Example automation move: K-Pop verse uses Composure 25, chorus moves to Composure 40. Everything else stays constant.

When the density change between sections is large, for example a sparse acoustic verse moving into a full-ensemble chorus, Gain is often the better automation target than Composure. Start at the preset Gain value for the verse, then reduce Gain as the arrangement fills in. The fuller arrangement gives the engine more signal to level against, so it does not need the same Gain lift to deliver perceived loudness.

If GR SLOW rides deeper than −1.0 dB on a sparse section, lower Gain on that section until it does not.

6.5 Driving a downstream clipper

For deliberate clipping character, place a dedicated clipper downstream of Atlas and use TRIM to drive it.

- Push TRIM until the downstream clipper shows positive depth on its meter.
- +0.3 dB depth: light clipping, character territory.
- +1.0 dB: clear clipping, deliberate technique.
- +2.0 dB or more: heavy clipping, significant distortion.

6.6 Tips and tricks

A short collection of observations from working with Atlas on real material. Starting points for exploration, not prescriptions.

- **Recognizing pre-treated source.** If the music feels enclosed at moderate Composure values, the source likely arrived already treated upstream. Lowering Composure until the space returns confirms it.
- **Acoustic instruments and GRIP.** Where the instrument's identity lives in its attack, acoustic guitar, piano, brushes on snare, even minimal GRIP changes the timbre. An acoustic guitar at GRIP 5 becomes more percussive and loses its round, warm attack. Tape compression and natural envelopes should be left alone. Leave GRIP at 0 on these sources, or accept the trade.
- **Material density and Energy.** Heavily produced consistent genres tolerate lower Energy without losing brightness. More dynamic material wants higher Energy to maintain the natural arc.
- **Foresight and Energy on sparse vocals.** Energy and Foresight interact strongly on sparse material. Higher Foresight smooths corrections before peaks arrive, which makes a small Energy value usable on a vocal that would otherwise be stripped of its airiness by reactive grabs. Reference pairings:

  Energy 20 / Foresight 55: airiness and intimacy together.

  Energy 15 / Foresight 55: airiness without intimacy.

  Energy 25 / Foresight 55: intimacy without airiness.

7. Preset Library

Atlas's role shifts with the material. On dynamic recordings, the engine preserves the source's natural dynamics. On heavily produced modern material, the role shifts toward density management and peak control. The presets in this library are tuned across that range.

Each preset is tuned by ear on real material. They are not formulas but starting points based on listening evidence.

The preset names describe the source character the preset is calibrated for, not the song genre as a category. A track in a given genre may sit at an LRA or transient density that does not match the preset of the same name. Choose by the source-character description, not by the name alone.

Preset	Gain	Composure	GRIP	Energy	Foresight	Ceiling	TRIM
Default	0	34	29	30	40	0.0	0
Country Acoustic	+4	23	22	17	24	0.0	0
Sparse Acoustic	+1.5	0	0	20	54	0.0	0
Country Pop	+4	14	34	22	24	0.0	0
Rock Solid	0	54	31	35	44	0.0	0
ATMOS Launchpad	+1	28	25	28	50	0.0	0
K-Pop Verse	+4	25	39	60	69	0.0	0
K-Pop Chorus	+4	38	39	60	69	0.0	0
Orchestral	+10	77	25	14	64	−2.0	0
EDM Depth	+2	14	60	20	29	0.0	0
Hip-hop	+4	38	40	44	64	0.0	0
Jazz	+4	35	29	34	60	0.0	0
Drum Bus	+2.0	46	4	36	5	−6.0	0
Bass Elec Punch	0	10	87	71	61	−7.0	0

Preset	Gain	Composure	GRIP	Energy	Foresight	Ceiling	TRIM
Drum Control	0	79	2	64	40	−7.0	0
GTR Elect grp	0	48	12	44	17	−7.0	0
Vocal	0	22	68	45	11	−7.0	0

7.1 Default

Use this when the source character is not yet identified, or as a universal starting point on unfamiliar material.

Modest engine work, no Gain lift, conservative Ceiling. Move from here based on what the material asks for.

7.2 Country Acoustic

Use this when the source is sparse and dynamic, with vocal forward and natural acoustic instrument envelopes. LRA roughly 6–10.

Light engine work preserves the open feel. Suitable for ballads, fingerpicked guitar arrangements, intimate acoustic ensembles.

7.3 Sparse Acoustic

Use this when the source is solo or near-solo with no rhythmic density. Solo vocal with acoustic guitar and reverb tails, LRA 8 or higher.

The preset does very little by conventional standards: Composure 0, GRIP 0, Gain only +1.5. Composure 0 preserves the spatial relationships already set in the mix. GRIP 0 leaves the acoustic guitar's round, warm attack untouched. Foresight 55 with Energy 20 produces airiness and intimacy together. The engine anticipates peaks rather than reacting to them, so a small Energy value adds presence without stripping the air off the top of the vocal.

For songs that move from a sparse verse into a fuller-arrangement chorus, automate Gain down at the chorus rather than holding +1.5 across the song. See "Verse and chorus relationship" in §6.

7.4 Country Pop

Use this when the source is pre-treated with moderate transient density and a forward vocal. LRA roughly 4–7.

Pre-treated country with denser arrangement and more transient density. Lower Composure suits the upstream treatment. Higher GRIP handles the additional drum sounds and forward vocal.

7.5 Rock Solid

Use this when the source is full-band rock with dynamic verse-chorus contrast and a vocal that sits above the arrangement. LRA roughly 5–8.

Tuned for a vocal sitting above the arrangement. The GRIP and Foresight settings are calibrated to keep elements glued without flattening transient definition. Sits around the middle of the library and works as a starting point for many guitar-based productions.

7.6 ATMOS Launchpad

Use this when the source is an Atmos master coming into the final stabilization stage, at typical Atmos delivery loudness (−18 LUFS-I for music streaming).

Conservative engagement across the board, designed to preserve what the mix engineer built into the immersive program. Modest Gain (+1) — Atmos masters arrive close to the −18 LUFS-I target, so the engine doesn't need to lift far. Below-moderate Composure preserves the spatial breathing the mix engineer worked on. Conservative GRIP keeps transient spatial cues relatively intact. Energy preserves the top-end air typical of rear and height ambience. Foresight 50 is a mid-range starting point; adjust per source tempo, or let the BPM-aware sweet zone guide you when the host reports tempo.

Ceiling stays at 0; the engine stabilizes peaks below 0 dBFS through shaping, and the −1 dBTP Atmos Music streaming target is satisfied by the engine's natural behavior, not by Ceiling acting as a wall. TRIM at 0 assumes Atlas as the final stage; Atmos beds typically have no downstream maximizer or clipper.

7.7 K-Pop Verse and K-Pop Chorus

Use this when the source is heavily produced with wall-of-sound density and marked verse-chorus contrast. LRA roughly 3–5.

The two presets demonstrate verse and chorus management as a paired technique. Use both presets on the relevant sections, or load one preset and automate Composure between values (25 verse, 38 chorus).

On heavily produced material, the verse and chorus density relationship can be managed through Composure automation rather than two separate preset instances.

7.8 Orchestral

Use this when the source is a naturally captured ensemble with wide dynamic range and minimal upstream loudness management. LRA 12 or higher.

High Composure does the sustained-presence work that no upstream stage has done. Conservative ceiling preserves the natural dynamic character. Substantial Gain brings quiet recordings up to working range.

7.9 EDM Depth

Use this when the source is already mastered, arriving loud and dense with peaks near 0 dBFS. LRA roughly 2–4.

Composure 15 keeps the engine light on the sustained content. GRIP at 60 produces additional bass weight and a sense of front-to-back depth that dense pre-mastered material has otherwise lost. TRIM recovers the level offset on already-loud source material.

7.10 Hip-hop

Use this when the source is kick-led modern hip-hop or rap, around 85–95 BPM, heavily produced with kick and sub-bass dominant. LRA roughly 3–5.

GRIP at 40 gives the genre-native firmness. Foresight 64 preserves the song's groove rather than flattening to a quantized grid. The Foresight value will need adjustment for songs at significantly different BPM, see §3.6.

7.11 Jazz

Use this when the source is a naturally recorded acoustic ensemble with wide dynamics and no upstream loudness management. LRA 8–12, vocal with double bass, drum kit, and natural acoustic space.

This preset produces a velvety quality with strong venue presence, and simultaneous transients (vocal and bass) feel coordinated rather than separate. Suitable for vintage analog recordings, modern jazz, and acoustic small group productions.

7.12 Drum Bus

Use this when the source is a drum bus or percussion stem, not full program. Transient-dominated material with little sustained content.

The first preset in the library tuned for stem use rather than full program. GRIP and Foresight sit in single digits because both controls behave differently on transient-dominated material. With little sustained program for the engine to anticipate against, low values keep release between transients clean. Ceiling at −6.0 places the engine's working range below the source's natural peak level, giving clean peak control without driving the engine into compression character.

For more aggressive bus compression character, pull Ceiling further down (−10 to −15 typically). The engine works the slow layer harder and the result moves toward the gluey, sustained-body character of heavy drum bus compression. Pumping is the sign of overuse: back off Ceiling, GRIP, or Foresight until release between transients is clean again.

7.13 Bus and group use

Atlas can be used on individual buses and groups where the engineer wants the engine to hold the signal rather than lift it. The pattern: Gain at 0, Ceiling lowered below source peak level until the engine engages, output level recovered with TRIM if needed. This places Atlas in the role of a bus compressor with Atlas's character, rather than a master-bus loudness stage.

The factory library includes presets following this pattern for specific bus types:

- **Drum Control** — drum bus. High Composure holds the kit's sustained presence; low GRIP keeps individual hits articulated.
- **Bass Elec Punch** — electric bass bus. High GRIP and Energy give sustained low-frequency presence and punch between bass events.
- **GTR Elect grp** — electric guitar group. Moderate Composure with low GRIP, transient definition preserved.
- **Vocal** — vocal bus. Firm GRIP for articulation, low Foresight for reactive catching of plosives and sibilants.

Other bus-style presets in the factory library (Drum Mojo, Drums Held, Vocal Articulation, Vocal Preserve) are variations on the same idea with different character targets. Load and listen.

8. Quick Reference

8.1 Diagnostic checklist

- Music feels enclosed: lower Composure.
- Kick feels flat: raise Composure into moderate range.
- Snare feels veiled or hazy: lower Energy.
- Top end loses sparkle: raise Energy.
- Mix feels unglued or elements jumping: GR FAST higher than GR SLOW. Lower GRIP, raise Foresight.
- Rhythm feels mechanical or quantized: raise Foresight.
- Rhythm feels rushed or out of phase: lower Foresight.
- Vocal too present in verse, sinks in chorus: raise Composure on the verse.
- Verse and chorus need different Composure: automate the change at the section boundary.
- Bass needs more weight or sustained presence: raise GRIP.
- Need tight kick separation: keep GRIP lower.
- Output sits below desired level on dense material: TRIM up.
- Want to push a downstream clipper for character: TRIM up. Read clipping depth on the downstream clipper's meter.
- TP MAX alarm dot flashing with no downstream clipper: lower TRIM until TRIM PEAK is at or below 0.0.
- Pumping with downstream clipper: see §8.2 (Pumping that fights the groove).
- Suggested Foresight range doesn't fit: see §3.6 for the three cases (no BPM set, half-time material, no steady tempo).

8.2 First-session pitfalls

Three pitfalls account for most early difficulties:

- **Can't hear what Atlas is doing.** Likely Gain is raised while TRIM is pulled down to compensate, restore TRIM to 0 and use MATCH for level-compensated A/B (§6.3). Or a downstream stage is doing loudness work and burying Atlas's contribution, see §2 Chain Topology and commit to one approach.
- **Pumping that fights the groove.** Downstream stage riding GR rhythmically on peaks Atlas delivers, follow the discipline at the top of §6 and bypass it; if the pumping disappears, the downstream stage was the source. Or Foresight in the misaligned zone for the song's effective BPM, search both directions from the preset value.
- **Foresight setting that doesn't pump but doesn't groove.** Gain too high for the material; or the preset doesn't match your source character; or session BPM doesn't match the material. See §3.6 for the three suggested-range cases.

8.3 Output safety

Atlas's output level is set by TRIM. With TRIM at 0 the engine stabilizes the program below Ceiling and the output stays safe. With positive TRIM the output can exceed 0 dBFS, which is intended when feeding a downstream clipper. The final ceiling for distribution is enforced by whatever sits at the end of the chain after Atlas.

9. Uninstalling P21 Atlas

9.1 Windows

- **VST3:** Open C:\Program Files\Common Files\VST3\Pulsar Modular and delete P21 Atlas.vst3.
- **AAX:** Open C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Pulsar Modular and delete P21 Atlas.aaxplugin.
- **Shared files:** Open C:\Users\Public\Documents\Pulsar Modular and delete the P21 Atlas folder.

9.2 macOS

- **AU:** Open /Library/Audio/Plug-Ins/Components and delete P21 Atlas.component.
- **VST3:** Open /Library/Audio/Plug-Ins/VST3/Pulsar Modular and delete P21 Atlas.vst3.
- **AAX:** Open /Library/Application Support/Avid/Audio/Plug-Ins/Pulsar Modular and delete P21 Atlas.aaxplugin.
- **Shared files:** Open /Users/Shared/Pulsar Modular and delete the P21 Atlas folder.

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Plugin Development:	Mesut Saygıoğlu
GUI Development:	Ziad Sidawi & Mesut Saygıoğlu
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