

P42 CLIMAX

TONE-SHAPING AMPLIFIER

User Guide

Version 7.0

PULSAR MODULAR

P42 CLIMAX
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Preface

The year was 1958. A young high school student by the name of Ed Wolfrum was faced with a personal dilemma that, as it turns out, would lead to a pivotal time in the history of recorded music. Although deeply passionate about recording bands, he simply couldn't afford microphones. This predicament led to the design of a device that allowed him to record instruments directly, without the need for expensive microphones and with the ability to capture a purity of sound previously unattainable. The world's first DI box was born. Known later as the Wolfbox, it featured the Triad A-11/12J transformer and played a critical role in defining the rich, full-range low end of the Motown sound.

P42 Climax started as a tribute to a defining era in audio history, but through years of relentless refinement, it has evolved into something entirely unique. Today, it stands as a meticulously crafted tone-shaping amplifier, designed for precision, depth, and subtlety across every stage of production. Whether shaping individual tracks, enhancing groups, driving the 2-bus, or adding the final touch in mastering, P42 Climax delivers unparalleled versatility for modern workflows.

P42 delivers dual mono operation for analog style stereo imaging, and switchable shelving modes with proportional Q for musicality; it balances analog authenticity with modern flexibility. The refined circuit modeling delivers richer harmonics and dynamic responsiveness, while optimizations ensure minimal CPU impact. Beyond its original design, the shelving bands now support bidirectional attenuation, and a limiter at the end of the chain holds the peaks, whether shaping single tracks or finalizing masters.

P42 Climax began as a DI box, but it has become something more: a living, responsive presence in your signal chain. Its purpose is simple: to move you. It offers a palette of shape, color, depth, and space that transcends technical specs. There are no rigid formulas here, only intuition, discovery, and an invitation to listen deeper. Let your ears lead. You might just hear something new.

Ziad Sidawi

Audio Equipment Designer & CEO, Pulsar Novation LLC

PART I · STARTING

CHAPTER ONE

What P42 Climax Is

P42 Climax is a tone-shaping amplifier in a plug-in. At its heart is the A-11/12J input transformer, the transformer of the first passive DI box, later known as the Wolfbox. Around it sit a saturation stage, two filters, two shelf or bell bands, an air band, a Class A stage, a clean output stage and a limiter.

Use it on single tracks, on groups, on the 2-bus and in mastering. It works on the whole stereo signal, or on only its mid or only its side.



The panel at its default settings, with audio passing through it.

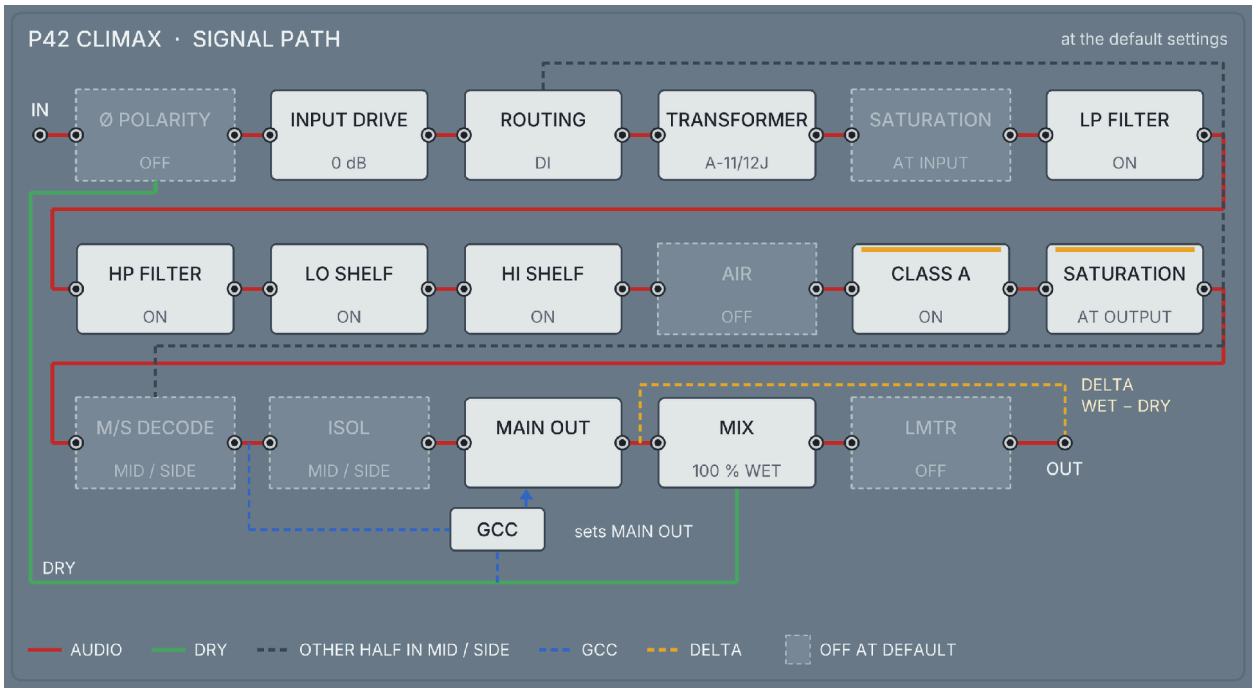
1.1 The Signal Path

Your track passes through P42 Climax in a fixed order:

1. **INPUT DRIVE** sets how hard the signal drives the transformer.
2. **The A-11/12J transformer.** It is always in the path.
3. **SATURATION**, when its position is set to INPUT.
4. **LP FILTER**, then **HP FILTER**, then **LO SHELF**, **HI SHELF** and **AIR**, in that order.

5. **Class A**, then **SATURATION**, when its position is set to OUTPUT.
6. **MAIN OUT** sets the level of the processed signal.
7. **MIX** blends the processed signal with your dry track.
8. **The limiter**, when LMTR is on. It takes the blend, so it is the last stage.

BYPASS takes all of it out of the path. Chapter 11 covers the top bar.



The signal path at the default settings. Dashed modules are off or not used at the default; the dashed cords show the other half in MID or SIDE, what GCC measures, and Delta.

1.2 Mono and Stereo

P42 Climax runs on mono and stereo tracks, with matching input and output. On a stereo track, ROUTING chooses what is processed: all of the signal (DI), only the mid, or only the side (Chapter 7). On a mono track ROUTING is hidden and P42 Climax processes the whole signal.

1.3 The Panel at a Glance

Where	What is there	Chapter
Top bar, left	BYPASS, Polarity, ECO, the preset bar	11, 12
Top bar, right	A/B and its copy arrow, Dual Mono, the menu	11, 12, 13
Upper left	HP FILTER, FILTER REV., LO SHELF	5, 6
Upper right	LP FILTER, AIR, HI SHELF	5, 6
Center	The meters around the transformer window	10
Lower left	ROUTING, ISOL, INPUT DRIVE	3, 7
Lower center	SATURATION, its INPUT and OUTPUT positions, Class A	4
Lower right	GCC, MAIN OUT, MIX, Delta	8
Bottom band	The help strip at the left, the limiter at the right	9, 10

Drag a knob up or down to turn it. Point at a knob to see its value under it. This guide writes control names as they are printed on the panel.

1.4 New in Version 7

If you used an earlier version of P42 Climax, these are the changes you will notice first:

- **The A-11/12J transformer is always in.** Version 7 is built around a model of the physical Triad A-11/12J transformer.
- **Oversampling is automatic.** The OS button and its OFF, INTEL, VINTG and HD choices are gone. P42 Climax picks the right processing for your session rate by itself. The new ECO switch halves the oversampling, from x4 to x2, to save CPU (11.4).
- **TX is gone.** The transformer selection switch has left the panel.

- **GCC sets MAIN OUT once, when you click it.** Its box shows the change the click will make. A red light breathes in the arrow when the change is worth making (8.2).
- **MAIN OUT reaches from −26 dB to +15 dB.**
- **Every switch that changes the sound fades in and out** instead of clicking, BYPASS included. BYPASS switches at once while Polarity is on (11.1).
- **A new preset browser**, with favorites, tags, search and a whole-bank walk with the arrows (Chapter 12).
- **A help strip** at the bottom of the panel explains the control under the mouse (10.4).
- **Online activation** with a license key (17.3).

Old sessions and presets open in version 7. Settings for controls that no longer exist are ignored.

> **NOTE: Favorites from earlier versions are not carried over to the new browser. Star them again after you update.**

CHAPTER TWO

Five-Minute Walk

1. Put P42 Climax on a track with a full range: a bass, a drum loop, a piano or a mix.
2. Click **BYPASS** on and off while the music plays. A new insert starts from the Default preset.
3. Turn **INPUT DRIVE** up. The transformer works harder and the low end gains weight.
4. Turn **SATURATION** up slowly. The sound thickens and moves forward. Click **INPUT**, then **OUTPUT**, and hear the saturation move from the front of the chain to the end.
5. Raise the **HP FILTER** until you hear it touch the low end, then back it off a little. Set **LO SHELF** to about twice that frequency and raise its slider until the low end feels solid.
6. Switch **AIR** on with its turquoise light and raise its slider for openness at the top.
7. Play the music for a few seconds and click the **GCC** arrow. MAIN OUT moves so P42 Climax plays as loud as your dry track. Now BYPASS compares sound, not level.

TIP: Click A/B to keep this sound in slot A and start on slot B. One button flips between the two, so you can compare with your eyes closed (12.1).

PART II · UNDERSTANDING THE CONTROLS

CHAPTER THREE

INPUT DRIVE AND THE A-11/12J TRANSFORMER

INPUT DRIVE sets how hard your signal drives the A-11/12J input transformer. The transformer is the first stage of P42 Climax and is always in the path.

3.1 The Transformer

In 1958 Ed Wolfrum, then a high school student, built a box to record instruments directly, without microphones. It became known as the Wolfbox, and its Triad A-11/12J transformer helped define the full, round low end of the Motown sound.

P42 Climax places that transformer at its input. At low levels it passes your signal with its own weight and roundness. Driven harder, it saturates in the low end, the way a transformer does.

The transformer has no switch. Its window in the center of the panel shows which part of the signal it works on: the whole signal, the mid or the side (Chapter 7).

3.2 INPUT DRIVE

INPUT DRIVE is the knob at the lower left, beside ROUTING. The range is −12 dB to +24 dB. The default is 0 dB. The readout shows dB.



INPUT DRIVE at its default setting.

INPUT DRIVE is clean gain in front of the transformer. Turn it up to drive the transformer into low-frequency saturation. Use it with SATURATION to find the harmonic balance that suits your material (Chapter 4).

Turning up INPUT DRIVE also makes P42 Climax louder. Hold Shift while you turn it, and MAIN OUT moves the same number of dB the other way, so the level stays put while the color changes (14.3). GCC does the same job after the fact (8.2).

> **TIP: Drive the transformer first, then add SATURATION. The transformer gives weight; the saturation adds density on top of it.**

3.3 INPUT DRIVE in MID or SIDE

With ROUTING on MID or SIDE, a small MS light appears beside INPUT DRIVE, and the knob gets a second setting. Chapter 7 explains how the two settings work together (7.4).

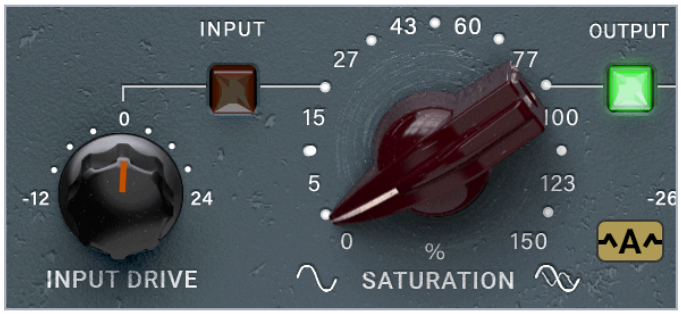
CHAPTER FOUR

SATURATION, its Position, and Class A

SATURATION adds harmonics. Its position decides where in the chain they are made. Class A adds a warm, even-order layer on top.

4.1 SATURATION

SATURATION is the large red knob at the bottom center. The range is 0 to 150 %. The readout shows percent.



SATURATION with its INPUT and OUTPUT lights. OUTPUT is lit, the default, and the ^A^ switch under it is Class A, on.

The saturation builds into a complex pattern of odd and even harmonics, mainly odd. The filters, the bands and INPUT DRIVE all shape it. The result is weight, thickness, depth and presence.

Low settings add density you feel more than hear. Toward 100 % the color becomes plain.

Past 100 % a second stage joins in: a preamp stage, modeled on a guitar preamp tube. It fades in between 100 and 110 %. Above that the knob works as preamp gain: quiet notes rise, hard notes break up, and the stage adds even harmonics to the odd ones of the first stage. Toward 150 % the distortion sustains and the peaks are held, so more knob gives more crunch rather than more level. For guitar, put SATURATION at INPUT (4.2), so the filters and bands shape the distortion like an amp's tone controls.

The saturation also follows the level of the music, as a hardware stage does when the program gets louder. As the music rises from about −30 to −12 dBFS RMS, the saturation stage gains up to 0.3 dB of headroom, then settles back as the music gets quieter. This is

always on and has no control. It is subtle: you hear it as loud passages keeping a little more of their shape.

4.2 INPUT or OUTPUT

The two lights left and right of the SATURATION knob, INPUT and OUTPUT, choose where the saturation sits. The lit one is in use. Click the other to move it. The default is OUTPUT.

- **INPUT** puts the saturation right after the transformer, before the filters and bands. The filters then shape a sound that is already saturated, the way a tone knob works after an overdrive. The effect is bolder and more aggressive.
- **OUTPUT** puts the saturation at the end, before MAIN OUT. The filters and bands now decide what is fed into it, so they choose which frequencies saturate most. The effect is smoother and more selective.

The difference grows with the amount of SATURATION. At low settings the two positions sound much alike.

4.3 Class A

The Class A switch is the button with the ^A^ symbol, under the OUTPUT light. It is on by default.

P42 Climax combines Class A and Class AB amplification. With Class A on, a Class A stage adds warm, even-order harmonics to the Class AB foundation, for a vintage console character: a punchy midrange, a silky top and gentle warmth in the low end. With Class A off, you hear the clean Class AB foundation alone.

Class A sits after the bands and AIR, in the same place in either saturation position.

CHAPTER FIVE

HP FILTER, LP FILTER AND FILTER REV.

The two filters frame the signal. FILTER REV. chooses their character.



HP FILTER with FILTER REV., and LP FILTER, both on at their default settings.

5.1 HP FILTER

HP FILTER is the knob at the upper left. It is a 12 dB/oct high-pass filter. The range is 15 Hz to 500 Hz. The default is 15 Hz. The green light under the knob switches the filter in or out; it is on by default.

Use it with LO SHELF to set the focus, weight and warmth of the low end (6.5).

5.2 LP FILTER

LP FILTER is the knob at the upper right. It is a 12 dB/oct low-pass filter. The green light under it switches the filter in or out; it is on by default. The range starts at 150 Hz. Its top depends on the sample rate of your session:

Session rate	Top of LP FILTER
44.1 kHz	20 kHz
48 kHz	22 kHz
above 48 kHz	40 kHz

The scale on the panel changes to show the top for your session. The default is 20 kHz.

Use it with HI SHELF to shave sharp, harsh transients and make room for the harmonics, without dulling the sound or losing its attack.

5.3 FILTER REV.

FILTER REV. is the A / B rocker under HP FILTER. It chooses the design of both filters:

- **A**, the default, treats transients in a warmer, rounder way.
- **B** treats them in a punchier, more forward way.

A change cross-fades from one design to the other, so you can switch while the music plays.

5.4 Switching the Filters Off

Every filter adds a little phase shift, as every analog filter does, and stacked filters add it up. In mastering, or when other filters already do the job, switch the HP FILTER or LP FILTER off with its green light.

> **TIP: Hold Cmd and Option (Ctrl and Alt on Windows) and point at a filter knob to hear the track without that filter. Release the keys to bring it back (14.4).**

CHAPTER SIX

LO SHELF, HI SHELF AND AIR

Two tone bands and an air band shape the balance. Each tone band is a shelf or a proportional-Q bell, and can boost or cut. AIR is a high shelf that only boosts.



LO SHELF, HI SHELF and AIR at their default settings.

6.1 The Controls of a Band

LO SHELF sits at the left of the panel, HI SHELF at the right. Each has:

- **a frequency knob.** LO SHELF reaches from 40 Hz to 5 kHz, HI SHELF from 150 Hz to 5 kHz.
- **an amount slider**, the curved bracket beside the knob. It reads 0 to 10. The default is 0.55.
- **a green light** that switches the band in or out.
- **INV**, a second light, that turns the band from a boost into a cut.
- **the label** under the knob. Click it to switch between shelf and bell.

6.2 Shelf

In shelf mode, the band lifts (or, with INV, lowers) everything below the LO SHELF frequency, or above the HI SHELF frequency.

The shelves have a musical shape. The LO SHELF boost is followed by a small dip above it, and the HI SHELF boost has a small dip below it. The dip frames the area you are lifting, so the boost sounds focused rather than broad.

The amount slider is the strength of the shelf. In shelf mode, 0 is the gentlest setting, not off: about +1 dB on the band's side. To take the band out, switch it off with its green light.

6.3 Proportional-Q Bell

Click the LO SHELF or HI SHELF label to turn the band into a bell. The label changes to show the mode.

The bell is proportional-Q: it narrows as you raise the amount. For most of the slider it stays broad and musical. Near the top it narrows sharply. This makes it easy to find a frequency: push the slider high, sweep the frequency knob until the sound you want stands out, then bring the slider down to smooth the boost.

In bell mode, an amount of 0 is flat.

6.4 INV: Boost or Cut

INV turns the band into a cut. The slider then sets the depth of the cut instead of the height of the boost. A band can cut in shelf mode and in bell mode.

6.5 Using the Bands with the Filters

The bands and the filters work in pairs:

- **Low end.** Set HP FILTER just below where you hear it touch the low end. Set LO SHELF to about twice the HP FILTER frequency for focus. Move LO SHELF higher for more body and weight.
- **Top end.** Use LP FILTER to take off harshness and HI SHELF to bring back the color you want in the upper mids.

6.6 AIR

AIR is the small knob above HI SHELF, with its own slider and a turquoise light. It is a high shelf tuned to bring out top-end detail and clarity gently. The frequency reaches from 5 kHz to 16 kHz. The slider reads 0 to 10. The turquoise light switches AIR in or out; it is off by default. As with the shelves, 0 is the gentlest setting, not off: about +1 dB at the very top. To take AIR out, switch it off with its turquoise light.

While you set AIR, listen to the height and depth of the top end and where its elements sit. Set well, it adds height and openness without harshness, brittleness or sibilance.

> **TIP: Hold Cmd and Option (Ctrl and Alt on Windows) and point at a band's frequency knob, or at AIR, to hear the track without it (14.4).**

CHAPTER SEVEN

ROUTING, ISOL AND THE MS KNOBS

ROUTING chooses which part of a stereo signal P42 Climax processes. ISOL lets you hear that part alone. The MS knobs give INPUT DRIVE and MAIN OUT a second setting for that part.

7.1 ROUTING

ROUTING is the vertical switch at the lower left, with three labels: DI, MID and SIDE. Drag the switch, or click a label. The default is DI.



ROUTING on DI, with ISOL off.

- **DI** processes the whole signal, mono or stereo.
- **MID** processes only the mid, the center of the stereo image. The side keeps its original sound.
- **SIDE** processes only the side, the width of the image. The mid keeps its original sound.

In MID and SIDE, the transformer, the filters, the bands, AIR, SATURATION and Class A work only on the chosen part. The other part is not colored, but these controls still act on the whole stereo signal: INPUT DRIVE, MAIN OUT, Polarity, the limiter, Delta and MIX.

MID and SIDE need a stereo track. On a mono track ROUTING is hidden.

> NOTE: One instance processes one choice at a time. To treat the mid and the side differently, use two instances (15.4 and 15.5).

7.2 ISOL

ISOL is the square button above ROUTING. It appears only in MID or SIDE.

With ISOL on, you hear only the part you are processing, so you can work on its details:

- in MID, the mid alone, in mono;
- in SIDE, the side alone.

With ISOL off, you always hear the full stereo image: the processed part together with the other part.

ISOL blinks while it is on, to remind you that you are not hearing the whole signal.

7.3 MIX MS

With ROUTING on MID or SIDE and ISOL on, a small MS light appears beside MIX. It chooses what MIX blends:

- **MS off.** MIX blends the part you hear alone with the full stereo dry signal.
- **MS on.** MIX blends the processed part with the same part of the dry signal. At full DRY you hear the original part; at full WET, the processed part. This compares the processed and original part without the rest of the stereo image.

7.4 The MS Knobs: INPUT DRIVE and MAIN OUT

With ROUTING on MID or SIDE, an MS light appears beside INPUT DRIVE and another beside MAIN OUT. Each knob then holds two settings:

- **MS light on (blue):** the knob shows its setting for the part you process (the mid or the side).
- **MS light off:** the knob shows its setting for the whole stereo signal.

Both settings are in use at the same time. The MS light only chooses which one the knob shows and changes. When you click the MS light, the knob travels to the other setting, like a motorized knob.

Example, in MID: with the MS light off, set INPUT DRIVE to +6 dB to drive the whole signal. Switch the MS light on and set INPUT DRIVE to +3 dB. The mid now gets 3 dB more drive than the side.

Each setting is kept with the session and with presets. The second setting belongs to the routing you are in: in MID it is the mid setting, in SIDE the side setting.

GCC changes only the stereo MAIN OUT setting (8.2).

> **TIP: The MS knobs are the way to push the whole signal and give the mid (or the side) a little extra on top, in one instance (15.6).**

CHAPTER EIGHT

MAIN OUT, GCC, MIX AND DELTA

MAIN OUT sets the level of the processed signal. GCC sets MAIN OUT for you. MIX blends in your dry track. Delta lets you hear only what P42 Climax adds or takes away.



MAIN OUT, GCC and MIX. The GCC box shows how far a click will move MAIN OUT.

8.1 MAIN OUT

MAIN OUT is the knob at the lower right. The range is −26 dB to +15 dB. The default is 0 dB. The readout shows dB.

MAIN OUT is clean gain. It changes the level of the processed signal, not its color. The wide range down to −26 dB lets you push INPUT DRIVE and SATURATION hard and still bring the level back down.

Hold Shift while you turn MAIN OUT, and INPUT DRIVE moves the other way (14.3).

MAIN OUT sets only the processed signal. The dry part of MIX keeps its own level.

> NOTE: Version 7 extends MAIN OUT from −24 to −26 dB at the bottom and from +12 to +15 dB at the top. Old automation plays as before from −21 to +10 dB. Beyond that it stretches to the new ends: an old −24 dB now plays −26 dB, an old +12 dB plays +15 dB.

8.2 GCC: Gain Control Calculation

GCC is the green box and the arrow under it, above MAIN OUT. It matches the loudness of P42 Climax to your dry signal, the sound you hear with BYPASS.

The box shows, in dB, how far the click will move MAIN OUT. To use it:

1. Play the music for a few seconds, with P42 Climax on.
2. Click the arrow. MAIN OUT moves by the amount in the box, and the box returns to 0.0.

GCC measures loudness the way the ear hears it, and it takes MIX into account. It sets MAIN OUT once, when you click. It does not ride the level after that. If you click while the reading is still settling, P42 Climax waits a moment and then applies it.

A red light in the arrow head breathes when the box shows a change of 0.5 dB or more. It goes out when the change falls under 0.3 dB and while BYPASS is on.

The box shows 0.0 with no music, right after a click, and when MIX is almost fully dry.

> **TIP: GCC and A/B work well together. Click GCC, copy A to B, change B and click GCC again. Now A and B play at the same loudness, and you compare sound, not level.**

8.3 MIX

MIX is the vertical slider at the far right, from DRY at the top to WET at the bottom. It blends your dry track with the processed signal. The readout shows the share of dry signal: "0% D" is fully processed, the default, and "100% D" is fully dry.

Click the word DRY to go fully dry, or WET to go fully processed.

MIX comes after MAIN OUT and before the limiter. MAIN OUT sets the processed part, the dry part joins at its own level, and the limiter, when it is on, takes the blend (Chapter 9).

With ROUTING on MID or SIDE and ISOL on, the MS light beside MIX changes what it blends (7.3).

MIX is grayed out while Delta is on.

8.4 Delta

Delta is the icon at the bottom of the panel, under MAIN OUT. It plays the wet signal with your dry signal taken out of it: only what P42 Climax adds to your track, or takes away from it.

Delta flips the polarity of your dry signal and adds it to the wet, so the dry cancels and only the change remains. You have saturated and shaped the sound; Delta takes the dry away to show what P42 Climax added. Use it as a magnifier: it lets you hear exactly what a change in drive, saturation or EQ is doing. Switch it off to hear the full sound again.

While Delta is on, the limiter and MIX are out of the path, and MIX is grayed.

Delta fades in and out over 20 ms, like every other switch in P42 Climax, so turning it on or off does not click.

> **NOTE: Delta compares the processed signal with the dry signal as MIX uses it, after the same oversampling filters. The small loss those filters cause at the very top of the spectrum (above about 20 kHz at 44.1 kHz) is not part of Delta.**

CHAPTER NINE

The Limiter

The limiter catches peaks at the very end of P42 Climax, after MIX, so it works on what you hear: the processed signal and any dry signal you blend in. It sits in the bottom band, at the right.

9.1 The Controls



The limiter on, with THR at −6.0 dB, RLS at 30 ms and 3.4 dB of gain reduction.

Control	Does	Range	Default
LMTR	Switches the limiter in or out	on, off	off
THR	The threshold: the level the limiter holds peaks at	−18.0 to 0.0 dB	0.0
RLS	The release: how fast the second stage lets go after a peak (9.2)	1 to 300 ms	30 ms
GR	Shows how much the limiter is reducing the level, in dB		

THR, RLS and GR appear while LMTR is on.

To change THR or RLS, drag in the box. Double-click the box to type a value.

9.2 Using the Limiter

The limiter works in two stages. The first starts easing the level down a few dB below THR, so loud passages are already gently shaped before they reach it. The second holds the peaks at THR. RLS sets how fast that second stage lets go; the first stage has a fixed, slow release.

- Short release settings, from about 1 to 10 ms, sound tighter and more aggressive.

- Longer settings, up to 300 ms, recover more smoothly and distort less. They also hold the level down for longer, so the output is a little quieter.

Watch GR to see how often and how hard the limiter works.

The limiter comes after MAIN OUT and after MIX: it is the last stage. While Delta is on, the limiter is out of the path.

The limiter runs at the oversampled rate, with MAIN OUT and MIX, so very little of what it adds on fast peaks folds back into the audible range.

The limiter behaves like a hardware limiter: it holds peaks close to THR, but it is not a brickwall. A fast peak can pass THR by a few tenths of a dB. If your master must stay under a fixed ceiling, set THR a little lower or end the chain with a true-peak limiter.

9.3 GR in Your DAW

Some hosts show the limiter's gain reduction on their own meters. Pro Tools shows it on the insert and next to the track meter; REAPER shows a yellow bar next to the track meter in the mixer. The value is the limiter's GR and reads 0 dB while BYPASS is on.

SSL 360 Link shows it too, on the compression meter of SSL 360 Link Bus Compressor and on the GR meter of an SSL UC1, after one setup step. In Configure Link > PLUG-INS, star P42 Climax so that it appears in the Bus Compressor's load menu, then load it there. In Configure Link > MAPPING, drag "GR" from ASSIGNABLE METER DATA onto the compression meter. 360 Link keeps the mapping as a user profile.

9.4 Limiter and Clipper

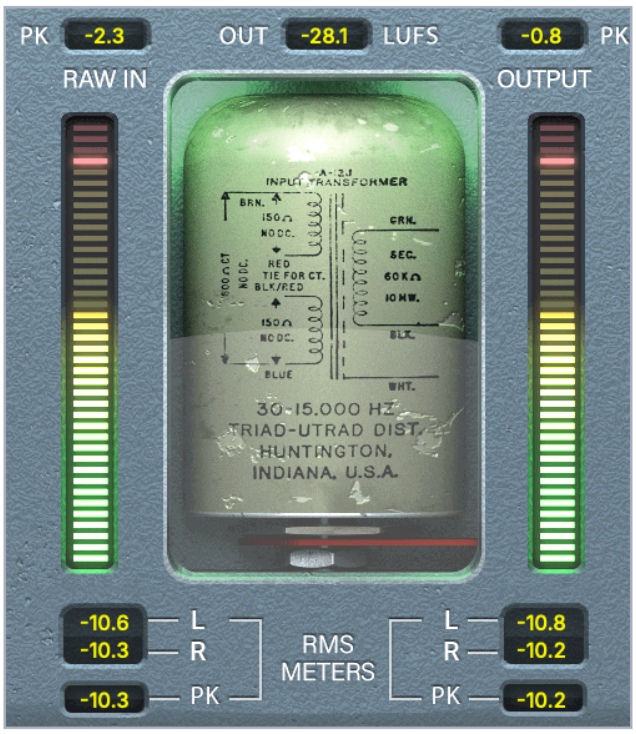
P42 Climax has a limiter; P44 Magnum has a clipper. Both manage peaks, but they sound different. A clipper shapes the transients by saturating them, adding harmonics and, if you push it, distortion as an effect. A limiter keeps the waveform intact up to the threshold and reduces the level only when it must. Use the P44 clipper for character and tone, and the P42 limiter as a clean safety net at the end.

CHAPTER TEN

Meters and the Help Strip

The meters sit around the transformer window in the center of the panel. The help strip sits in the bottom band, at the left.

10.1 The Meters



The meters and the transformer window, with audio passing through.

Meter	Where	Shows
PK RAW IN	top left	The peak of the input, before any processing
OUT LUFS	top center	The short-term loudness of the output
PK OUTPUT	top right	The peak of the output
Bar meters	left and right of the window	The RMS level of the input (left) and the output (right), with a peak marker
RMS METERS	under the window	The RMS level of the left and right channel and the higher of the two (PK), for the input (left) and the output (right)

The peak numbers show the higher of the two channels. Each reading holds a new high for a second, then falls.

The output meters read after MIX, so they show what leaves P42 Climax. While BYPASS is on, the meters rest.

10.2 Reading Gain

GCC matches loudness for you (8.2). You can also match by eye and ear: compare RAW IN with PK OUTPUT and the input bars with the output bars, then trust what you hear.

10.3 The Transformer Window

The picture in the window glows with the output level. It also changes with ROUTING, to show whether P42 Climax is processing the whole signal, the mid or the side.

An amber light over the top of the window shows how hard the signal bends: in the transformer, as INPUT DRIVE pushes it, and in SATURATION. It rises at once with a peak and falls back over about 0.7 s. Use it to see where your settings start to color the sound. It stays dark while BYPASS is on.

10.4 The Help Strip

The help strip is the dark band at the bottom left. While it is on, it explains the control under the mouse in one sentence. Point at the preset bar to read the loaded preset's description, when it has one.



The help strip, showing the text for SATURATION.

The help strip is off when you first install P42 Climax. To switch it on or off:

- click the help strip itself, or
- open the menu and choose "Tooltip is ON" / "Tooltip is OFF".

The switch is shared by every instance of P42 Climax on your computer. It is not stored in presets.

Short messages also appear in the help strip, for example after an A/B copy or a preset save. These show even while the help strip is off.

Many lines follow the setting: a switch tells you what a click will do from where it stands, and a box such as RLS shows its value.

While you turn SATURATION or INPUT DRIVE, the line changes with the knob and tells you what the setting is doing at that point, for example where the saturation starts to compress. Let go, and the line returns to the short description.

Each RMS box under the window (L, R and PK, for the input and the output) has its own line that says what it measures.

CHAPTER ELEVEN

BYPASS, Polarity, Dual Mono and ECO

Four switches in the top bar act on the whole plug-in.



The top bar: BYPASS, Polarity, ECO, the preset bar, A/B and its copy arrow, Dual Mono and the menu.

11.1 BYPASS

BYPASS is the first icon at the top left. It takes P42 Climax out of the signal path, so you hear your track untouched.

The bypassed signal stays in time with the processed one, so you can switch while the music plays. BYPASS fades over 20 ms instead of clicking. While Polarity is on, it switches at once.

BYPASS is also your DAW's bypass for the plug-in. In the LV2 on Linux, your DAW's bypass is a separate switch (20.2).

> **TIP: Click GCC first (8.2). Then BYPASS compares the sound of P42 Climax, not its level.**

11.2 Polarity

Polarity is the second icon, with the Ø symbol. It inverts the polarity of the signal at the very start of the chain. The dry signal used by MIX and Delta is inverted with it.

Use it when P42 Climax runs in parallel with another path of the same source, and the two cancel in the low end.

11.3 Dual Mono

Dual Mono is the icon at the top right, left of the menu. It appears on a stereo track with ROUTING on DI.

Dual Mono turns P42 Climax into two units, one for the left channel and one for the right, built from hand-picked, matched parts. Like two real units, they differ by a hair: the filter and shelf corners sit a fraction of a percent apart, each shelf gives a touch more or less, and SATURATION starts to bend at a slightly different point. The result is a subtle, natural width, while the mono sum stays as it was. Use it as an alternative to plain stereo.

The two units are always the same pair, in every instance and every session, so a bounce always matches the last one.

> **TIP: Try P42 Climax with Dual Mono on every group bus and on the mix bus, as you would use a summing mixer.**

See 15.7 for two mono instances in your DAW.

11.4 ECO

ECO is the third button at the top left, right of Polarity. Switch it on to lower the CPU load of P42 Climax.

ECO halves the oversampling (OS). With ECO off, OS is x4 in a 44.1 or 48 kHz session and x2 at 88.2 or 96 kHz. With ECO on, OS is x2 at 44.1 or 48 kHz and off at 88.2 or 96 kHz. From 176.4 kHz up there is no OS, and ECO changes nothing. ECO off is the setting P42 Climax was tuned at. With ECO on it uses a little over half the CPU.

ECO on can sound slightly different from ECO off. For the sound as it was designed, leave ECO off.

ECO belongs to the instance, not to the sound. Your session saves it with each instance. A preset does not store it and does not change it, and neither does an A/B switch. A new instance starts with the choice you made last.

The latency is the same with ECO on and off (13.4). ECO cannot be automated. A bounce is made with the setting you hear.

> **TIP: In a large session, leave ECO off on the tracks and buses that matter most, and switch it on everywhere else.**

PART III · WORKING WITH P42 CLIMAX

CHAPTER TWELVE

A/B and Presets

A/B holds two settings for a quick comparison. Presets keep settings for later.

12.1 A/B

A/B is the button in the top bar, right of the preset bar. The lit letter is the slot you hear. Click it to switch between A and B.

The arrow beside it copies the slot you hear into the other slot. Both slots then match, and you can change one and compare.

A/B is a single button, so you do not have to look for it. Click it with your eyes closed and listen.

Loading a preset fills both slots with it. The slots are not saved with your session, and they never hold BYPASS.

12.2 The Preset Bar

The preset bar in the top bar shows the name of the loaded preset.



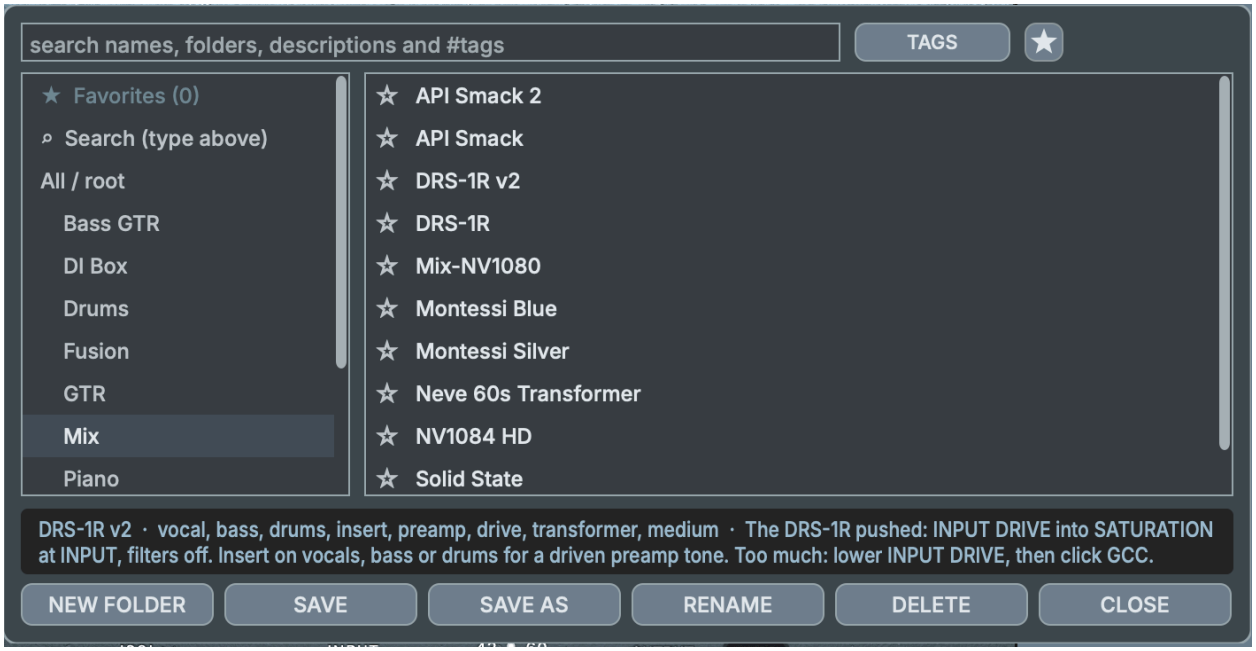
The preset bar with its two arrows.

- Click the name to open or close the browser.
- Click the arrows left and right of the name to load the previous or next preset. The arrows walk through the whole bank: the presets of a folder, then each folder in turn, and they wrap around at the ends. While the browser shows Favorites or a search, the arrows step through that list.
- A small amber dot at the left of the name shows that you have changed a setting since the preset was loaded or saved.

When the file of the loaded preset has been deleted, its name shows dim, with "(deleted)". The sound stays as it was.

12.3 The Browser

The browser opens under the preset bar. The window widens while it is open and returns to its size when you close it.



The browser. Folders at the left, presets at the right. The line under the lists shows the tags and the description of a preset.

Part	Does
Search box, at the top	Searches names, folders, descriptions and tags. Start a word with # to search tags only.
Folder list, at the left	Favorites, Search, then the bank and its folders. Click a folder to show its presets.
Preset list, at the right	The presets of the selected folder. Click to load; double-click to load and close.
Star beside a preset	Adds the preset to Favorites, or removes it.
TAGS	Adds or removes tags for the selected preset.
★ button	While lit, search shows only favorites.
NEW FOLDER	Creates a folder inside the selected folder.
SAVE	Overwrites the loaded preset, keeping its name and description.
SAVE AS	Saves the current settings as a new preset.
RENAME	Renames the selected preset, or the selected folder, and edits its description.
DELETE	Moves the selected preset or folder to the Trash (the Recycle Bin on Windows).
CLOSE	Closes the browser. Closing saves and discards nothing.

Point at a preset to read its name, tags and description in the browser's text line.

Drag a preset onto a folder to move it there, or onto Favorites to star it. Right-click a folder or a preset for more choices, among them "Reveal in Finder" and "Save these settings as the startup default".

While the browser is open, it uses these keys (Ctrl in place of Cmd on Windows):

- The arrow keys, Page Up, Page Down, Home and End move through the lists.
- Return, or the right arrow, on a folder moves into its presets and loads the one it lands on.

- Return on a preset loads it and closes the browser, like a double-click.
- Delete or Backspace deletes the selected preset or folder, after asking.
- Escape closes the browser.
- Cmd+S saves and Cmd+Shift+S saves as.

Space always goes to your DAW.

12.4 Saving a Preset

1. Set P42 Climax the way you want it.
2. Open the browser and select the folder to save into.
3. Click SAVE AS, type a name and, if you like, a description and tags.
4. Click OK.

A description holds up to 200 characters. It shows in the help strip when you point at the preset bar.

Your own presets with their own names are never replaced by an update (17.1). To change a factory preset and keep the change, save it under a new name.

12.5 What a Preset Stores

A preset stores every setting of the panel, including ROUTING and the BYPASS state. It does not store the window size; only the Default does (13.3).

Every preset remembers its routing: loading a preset sets ROUTING to the one it was saved with, DI for most presets, MID or SIDE for those saved in that mode. A preset saved in MID or SIDE shows it: its name ends in " — MID" or " — SIDE", and its description starts with "Saved in MID mode." or "Saved in SIDE mode." P42 Climax adds these words for you; they do not count toward the 200 characters. The factory presets for mid or side work, such as Mastering — MID and Mastering — SIDE, are named the same way.

12.6 The Default Preset

Every new instance of P42 Climax starts from the preset named Default, at the top of the bank.

- To make your own starting point, set P42 Climax as you like it, then right-click a preset in the browser and choose "Save these settings as the startup default". Or save over Default.

- Default cannot be renamed or deleted. If it is missing, P42 Climax writes a new one from its built-in settings.
- Default also stores the window size for new instances (13.3).

NOTE: An update never replaces your Default. It installs the factory Default only when there is none. After you install version 7, load your Default once and choose "Save these settings as the startup default". P42 Climax reads presets from earlier versions, and saving writes your Default in the version 7 format.

12.7 Where Presets Live

Platform	Folder
macOS	/Users/Shared/Pulsar Modular/P42 Climax/Presets
Windows	C:\Users\Public\Documents\Pulsar Modular\P42 Climax\Presets

Every user account on the computer shares the same bank. Choose Open Preset Folder in the menu to open it. You can organize, rename and back up presets there with your file manager; the browser shows the changes. To back up your presets, copy the folder. On Linux, the bank is in ~/.local/share/Pulsar Modular/P42 Climax/Presets, and each user account has its own (20.3).

12.8 The Factory Presets

P42 Climax comes with 93 presets: Default, -FLAT and 32 Console at the top of the bank, and the folders Bass GTR, DI Box, Drums, Fusion, GTR, Mix, Piano, Preamps, Synths, Tape Emu and Vocal.

-FLAT is the starting point for a sound of your own: no saturation, Class A off, and the filters and bands off, so only the transformer is in the path.

Every factory preset is balanced to the level of your dry signal, so when you load one and switch BYPASS, you compare color, not loudness.

Each preset has a description and tags. The description tells you what the preset is for and which controls to reach for next: for example, which knob adds more grit and which one brings the level back. Point at the preset bar, or at the preset in the browser, to read it. Search the tags with # (12.3), for example #vocal or #parallel.

Seven presets end in "Parallel", such as Mix Glue Parallel and Bass Grit Parallel. They push P42 Climax hard and use MIX to blend the processed sound under your dry track, the way engineers use a parallel bus.

12.9 Presets in Pro Tools

Pro Tools has its own Settings menu at the top of the plug-in window. It works side by side with the P42 Climax browser. Your session keeps the settings of every P42 Climax in it by itself. To make every new P42 Climax start with your own setting:

1. Set P42 Climax the way you want it.
2. Click the small round ▾ button next to Preset at the top of the window to open the Settings menu. Choose Save Settings As..., type a name and click Save.
3. In the Settings menu, choose Set As User Default.
4. In the Settings menu, choose Settings Preferences > Set plugin Default To > User Setting.

Set As User Default stays grey until you have saved a settings file. Steps 3 and 4 are both needed. Without them, a new P42 Climax starts from its Default preset, which loads the first time its window opens (12.6).

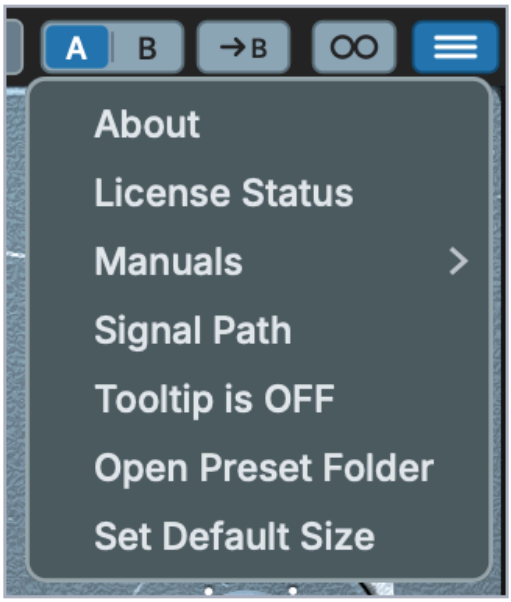
Settings Preferences > Save plugin Settings To only chooses where Pro Tools saves settings files: Session Folder puts them in the Plug-In Settings folder of the session, Root Settings Folder in the usual Pro Tools settings folder. It does not change what the session keeps.

CHAPTER THIRTEEN

The Menu, Sessions and Hosts

13.1 The Menu

The menu button is the last icon at the top right.



The menu.

Row	Does
About	Shows the version and the license state.
License Status	Opens the license window (17.3).
Manuals	Opens a page with the Quick Guides on the web and this guide in English, German and Japanese, each in a Dark and a Print version.
Signal Path	Shows the picture of the signal path over the panel (1.1).
Tooltip is ON / OFF	Switches the help strip on or off, for every instance (10.4).
Open Preset Folder	Opens the preset bank in Finder or Explorer.
Set Default Size	Makes the current window size the size of every new instance (13.3).

A guide in the Manuals page is grayed when its file is not installed.

13.2 What the Session Saves

Your DAW session saves every setting of P42 Climax, the ECO switch, the name of the loaded preset and the window size of each instance. The A/B slots are not saved; on reopening, both start from the saved setting.

All the controls of the panel can be automated, except ECO. Your DAW's automation list also shows a few entries kept for sessions made with earlier versions (OS, OS Type, TX and eight SC entries). They have no effect.

13.3 Window Size

Drag the corner of the window to resize it. The panel keeps its shape. The smallest size is half the default size; the largest is twice the default, within the size of your screen.

Each instance remains at its own size in the session. To set the size of new instances, size one the way you like and choose Set Default Size in the menu. The size is stored in the Default preset. On Linux, see 20.3.

13.4 Latency

P42 Climax reports its latency to your DAW, so the processed signal stays in time with your other tracks. The latency is fixed for a session rate: no control changes it, ECO included.

The latency is 60 samples at 44.1 and 48 kHz, 49 at 88.2 and 96 kHz, and none from 176.4 kHz up.

13.5 Formats and Hosts

P42 Climax comes as VST3, AU (macOS) and AAX. It runs at any session rate. It has no sidechain and uses no MIDI. On iPad and iPhone it comes as an AUv3 plug-in and a standalone app (Chapter 19). On Linux it comes as VST3 and LV2 (Chapter 20).

Space always goes to your DAW. While the preset browser is open, it also takes Return, the arrow keys, Delete/Backspace and the save shortcuts (12.3).

CHAPTER FOURTEEN

Mouse and Keyboard

These gestures work on the controls of P42 Climax, in every plug-in format. Most work the same way in the other Pulsar Modular plug-ins. On iPad and iPhone, see 19.1 for touch. On Linux, use the keys given for Windows (20.3).

14.1 Knobs and Sliders

Gesture	Does
Drag	Turns the knob or moves the slider.
Roll the mouse wheel over it	Turns the control.
Control-drag (Ctrl-drag on Windows), or drag with the right mouse button	Fine adjustment.
Double-click, or Option-click (Alt-click on Windows)	Returns the control to its default.
Point at it	Shows the value under the control.
Click the value while it shows, type, press Return	Sets an exact value.

On THR and RLS of the limiter, double-click opens a box to type a value (9.1).

Values can be typed with units or shorthand: for a frequency, "8k", "8000" and "8.0 kHz" are the same.

14.2 Clicks

Click	Does
The LO SHELF or HI SHELF label	Switches the band between shelf and bell (6.3).
INPUT or OUTPUT beside SATURATION	Moves the saturation (4.2).
DI, MID or SIDE	Sets ROUTING (7.1).
DRY or WET by MIX	Sets MIX fully dry or fully processed (8.3).
The help strip	Switches the help strip on or off (10.4).

14.3 Shift: Linking INPUT DRIVE and MAIN OUT

Gesture	Does
Shift-drag INPUT DRIVE or MAIN OUT	The other knob moves the same number of dB the other way, so the level stays put.
Shift-Option-drag (Shift-Alt on Windows)	The other knob moves the same way.

In MID or SIDE, the link works the same way between the MS settings of the two knobs.

14.4 Hearing a Stage Without It

Hold **Cmd and Option** (macOS) or **Ctrl and Alt** (Windows) and point at one of these controls. Its stage leaves the path until you release the keys:

- the frequency knob of LO SHELF or HI SHELF (shelf or bell),
- HP FILTER and LP FILTER,
- the AIR frequency knob,
- SATURATION,
- MIX, which goes fully processed.

The control grays while its stage is out. This is the fastest way to hear what one stage is doing.

14.5 Automation in Pro Tools

In Pro Tools, Control-Option-Command-click a control (Ctrl-Alt-Start-click on Windows) to enable it for automation. This is a Pro Tools gesture; P42 Climax leaves it to Pro Tools.

PART IV · IN PRACTICE

CHAPTER FIFTEEN

Recipes

Each recipe gives a goal, the settings to start from and what to listen for. Use your ears for the rest.

15.1 Focus and Weight in the Low End

Goal: a solid, controlled low end with depth.

1. Raise HP FILTER until you hear it touch the low end, then back it off a little. This removes the mud under the bass without thinning it.
2. Set LO SHELF to about twice the HP FILTER frequency. Raise its slider until the low end feels focused and solid, not bloated.
3. Raise SATURATION for density and depth. Lower it if the upper bass and the mids crowd.
4. For more weight and body, move LO SHELF higher. For tighter focus, move it back toward twice the HP FILTER.

Why it works: the filter and the shelf carve the space and reinforce the useful bass. The saturation replaces the warmth you removed with harmonics, so the low end never sounds hollow.

15.2 Layered Color on a Drum Bus

Goal: heavy lows and clear, textured highs, from two or three instances in series.

1. **First instance: the body.** Set HP FILTER, then LO SHELF at about twice its frequency for the low end. Use HI SHELF lightly around 700 Hz to turn the snare's "pock" into a "puck". Leave LP FILTER at its top.
2. **Second instance: the definition.** Switch LO SHELF off and set HP FILTER to its lowest; the first instance already handles the low end. Sweep HI SHELF while the music plays until you find a color to bring out, for example around the snare's crack, and raise its slider. Then switch AIR on and raise it.
3. **Third instance, if you need it: the air.** Switch LO SHELF off, HP FILTER at its lowest and LP FILTER at its top. Raise AIR. Search HI SHELF around 3 to 4 kHz for muffled highs, and smooth the very top with LP FILTER.
4. Go back to each instance and fine-tune them together, often with LP FILTER.

Why it works: each instance works on its own zone, like layers of colored glass. Small boosts on each layer stack more cleanly than one large boost.

15.3 Conditioning Tracks for the Mix

Goal: a big, deep mix at a low CPU cost.

Put P42 Climax in the first insert of every track before you mix. Prepare each track with it: filters, a little shelf and saturation. Do not be shy with the saturation, the bands and the filters. Once the tracks sound good together, mix on top of that.

On a drum kit, use one instance per drum and tune each one; the Tape Studer A812 preset is a good start. The plug-ins that come after P42 Climax have better material to work with.

15.4 Mid and Side in Series

Goal: treat the mid and the side differently while you hear the full stereo image.

1. Put two instances of P42 Climax in series on a stereo track or bus.
2. Set ROUTING to MID on the first and to SIDE on the second.
3. Shape each part while listening to the whole mix.
4. To hear details, switch ISOL on for a moment. Then the MS light beside MIX lets you blend the processed part with the same part of the dry signal (7.3).

No mid/side utility plug-in is needed.

15.5 Mid and Side in Parallel

Goal: separate level and processing for the mid and the side.

1. Duplicate the stereo track, or send it to two buses.
2. Put P42 Climax on each, with ROUTING on MID and ISOL on in one, and ROUTING on SIDE and ISOL on in the other.
3. The MID instance plays the mid on both channels. The SIDE instance plays the side on the left and the side inverted on the right. Together they rebuild the stereo signal.
4. Balance the two tracks with their faders.

15.6 The MS Knobs: Drive the Whole, Add to One Part

Goal: push the whole stereo signal and give the mid a little more on top.

1. Set ROUTING to MID.
2. With the MS light beside INPUT DRIVE off, set INPUT DRIVE for the whole signal, for example +6 dB.
3. Switch the MS light on and set INPUT DRIVE for the mid, for example +3 dB.
4. Click the MS light a few times and watch the knob move between the two settings.

MAIN OUT works the same way for the level. Use this to warm a vocal in the mid while the sides stay clean, or to push the sides for effect while the center stays clear.

15.7 Two Mono Instances in Your DAW

Goal: each side of a stereo track saturated on its own.

Some DAWs, such as Logic Pro and Pro Tools, can insert a plug-in as two mono instances on a stereo track. Each instance is the same unit. What changes is how SATURATION follows the level of the music (4.1): a stereo instance follows both channels together, while two mono instances follow each side's own level. When one side plays louder, it saturates on its own, and the image moves a little with the playing.

For two units that differ as real hardware does, use the Dual Mono switch in one stereo instance instead (11.3).

With a mid/side encoder plug-in before P42 Climax and a decoder after it, a dual mono insert processes the mid on its left instance and the side on its right instance. ROUTING is not available then, since each instance sees a mono signal.

15.8 Group Processing

Goal: one sound for a whole group of tracks.

1. Put P42 Climax on a group bus and set its sound there.
2. Drag the instance to the first track of the group, then copy it to each of the others.
3. Fine-tune single tracks as needed.

If your DAW can link plug-in settings across channels, an edit in one instance then reaches all of them. This works like a multitrack tape machine: one sound and a unified weight for the group. Push groups forward with saturation and shelves, or back with less top end.

CHAPTER SIXTEEN

Gain Staging

P42 Climax changes level as well as tone. Keep track of the level so you judge the sound, not the loudness.

16.1 Where Level Changes

- **INPUT DRIVE** raises the level into the transformer and everything after it.
- **SATURATION** and the bands add level as they add color.
- **MAIN OUT** sets the level of the processed signal.
- **MIX** adds the dry signal at its own level.

16.2 Matching Level

The fastest way is GCC: play the music, click the arrow, and the output matches your dry track (8.2). Repeat it after a large change.

While you turn INPUT DRIVE, hold Shift to keep the level steady (14.3).

16.3 Feeding the Next Plug-in

The output meters read what leaves P42 Climax. Watch PK OUTPUT for peaks and OUT LUFS for loudness.

If the next stage needs a safe peak level, switch the limiter on and set THR (Chapter 9). The limiter takes the blend, dry signal included. A fast peak can still pass THR by a few tenths of a dB, so leave a little room.

16.4 Pushing Hard

To hear the harmonics clearly, push INPUT DRIVE and SATURATION and bring the level back with MAIN OUT. Its range down to −26 dB covers a full +24 dB of INPUT DRIVE.

PART V · REFERENCE

CHAPTER SEVENTEEN

Installation and the First Insert

Install the format your DAW uses. The sound is the same in each. On iPad and iPhone, P42 Climax comes from the App Store (Chapter 19). On Linux, see 20.1.

Format	Platform	Installed at
VST3	macOS	/Library/Audio/Plug-Ins/VST3/Pulsar Modular/P42 Climax.vst3
VST3	Windows	C:\Program Files\Common Files\VST3\Pulsar Modular\P42 Climax.vst3
AU	macOS	/Library/Audio/Plug-Ins/Components/P42 Climax.component
AAX	macOS	/Library/Application Support/Avid/Audio/Plug-Ins/Pulsar Modular/P42 Climax.aaxplugin
AAX	Windows	C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Pulsar Modular\P42 Climax.aaxplugin

The installer offers the formats, the presets and the user guides as separate items.

17.1 Presets and Updates

With the Presets item selected, an update replaces the factory presets with fresh copies. Your Default is never replaced (12.6). Presets you saved under your own names are never touched. To keep a change to a factory preset, save it under a new name, or leave Presets unselected when you update.

17.2 Where Presets and Guides Live

Platform	Folder
macOS	/Users/Shared/Pulsar Modular/P42 Climax/Presets and /User Guides
Windows	C:\Users\Public\Documents\Pulsar Modular\P42 Climax\Presets and \User Guides

17.3 License

Without an activated license, P42 Climax plays a soft noise instead of your audio. Open the license window from the menu, License Status:

1. Paste your license key.
2. Click Activate.

The status line shows "Licensed" and your audio returns at once, with no restart.

Button	Does
Activate	Activates this computer with the key.
Deactivate	Frees this computer's activation.
Refresh	Checks the license now.
Account	Opens your account page on the web, where you manage your licenses and computers.

One activation covers every format of P42 Climax on one computer. Activation needs an internet connection. Your key is not stored on the computer. On Linux, see 20.1.

A demo license shows the days left in the license window. The license window opens by itself on an unlicensed instance, and comes back if you close it.

To move P42 Climax to another computer, click Deactivate on the old one, then activate on the new one. You can also free the old computer from your account page.

If you used an earlier version of P42 Climax, your activation moves to the new license system by itself, the first time version 7 runs online.

While the computer is online, P42 Climax renews the license by itself, once a day. Without a connection, it keeps playing for 14 days. In the last two days, the panel shows "CHECK OVERDUE - plays until" and the date. After 14 days offline, P42 Climax plays the soft noise and the license window says "The license server cannot be reached. Connect to the internet, then click Refresh." Connect, click Refresh, and your audio returns.

17.4 Uninstalling

To keep your presets, copy the P42 Climax folder first. Then delete:

- the plug-in files in the first table;

- the P42 Climax folder in /Users/Shared/Pulsar Modular or C:\Users\Public\Documents\Pulsar Modular (presets, user guides and licenses of included fonts);
- the settings (help strip switch, favorites): on macOS in your user Library under Application Support/Pulsar Modular/P42 Climax; on Windows in your user application data under Pulsar Modular\P42 Climax.

If you are leaving the computer for good, deactivate the license first. Delete the Pulsar Modular folder too if it is left empty. On Linux, see 20.1.

On iPad and iPhone, touch and hold the P42 Climax icon, tap Remove App, then Delete App. The plug-in and the presets stored in the app go with it: export the presets you want to keep first (19.3).

17.5 Specifications

Formats	VST3, AU (macOS), AAX, LV2 (Linux), AUv3 and standalone app (iPad and iPhone)
Channels	Mono and stereo, matching input and output
Sample rates	Any session rate
Latency	Reported to the host and compensated: 60 samples at 44.1 and 48 kHz, 49 at 88.2 and 96 kHz, none from 176.4 kHz up (13.4)
Processing	64-bit floating point
Sidechain, MIDI	None

CHAPTER EIGHTEEN

Troubleshooting and FAQ

18.1 Sound

I hear a soft noise instead of my track. P42 Climax is not licensed on this computer. Open License Status from the menu and activate it (17.3).

P42 Climax is louder than my dry track. INPUT DRIVE, SATURATION and the bands add level. Click GCC while the music plays (8.2).

A band with its slider at 0 still changes the sound. In shelf mode, and for AIR, 0 is the gentlest setting, not off: about +1 dB on the band's side. Switch the band off with its light to remove it (6.2, 6.6).

I hear only the mid (or only the side). ISOL is on; it blinks while it is on. Click it off (7.2).

MIX does nothing. Delta is on, and MIX is grayed. Switch Delta off (8.4).

Peaks pass the limiter's threshold. By a few tenths of a dB, that is how the limiter works: it behaves like a hardware limiter, not a brickwall (9.2). Set THR a little lower.

18.2 Panel

Where are the OS and TX switches? Version 7 removed them. P42 Climax now chooses its processing for your session rate by itself, and the transformer stage is fixed (1.4). ECO takes the place of the OS choices (11.4). Old sessions open without them.

Where is the S button that saved the size? Use Set Default Size in the menu (13.3).

I cannot find ROUTING, ISOL or Dual Mono. They need a stereo track. Dual Mono also needs ROUTING on DI.

The MS lights and knobs are missing. They appear only with ROUTING on MID or SIDE (7.4). The MS light by MIX also needs ISOL on (7.3).

The help strip is gone. It is switched off. Switch it on with a click on the band, or with the Tooltip row of the menu (10.4).

The window grew when I opened the browser. The browser needs the room. The window returns to its size when you close it (12.3). In the LV2 in Ardour and Mixbus, the window keeps its size and the wider panel fits inside it (20.3).

18.3 Presets and Sessions

My favorites are gone after the update. Favorites from earlier versions are not carried over. Star your presets again (12.3).

A preset changed my ROUTING. Every preset sets ROUTING to the one it was saved with: DI for most, MID or SIDE for those saved in that mode (12.5).

The amber dot is lit, but I changed nothing. A setting differs from the saved preset, for example after automation moved a control. Save, or reload the preset.

The A/B slots are not in my reopened session. The session keeps the setting you were hearing, not the two slots (13.2).

18.4 Hosts

My DAW shows OS, TX and SC entries in its automation list. They are kept so sessions from earlier versions open. They have no effect (13.2).

The manuals in the menu are grayed. The user guides were not installed. Run the installer again with User Guides selected. On Linux, install the package again; an account created after the .deb was installed gets the guides with 'sudo dpkg-reconfigure p42-climax' (20.1).

Does P42 Climax oversample? Yes: x4 at 44.1 and 48 kHz, x2 at 88.2 and 96 kHz. ECO on halves it (11.4).

P42 Climax uses a lot of CPU. Switch ECO on. It halves the oversampling, and P42 Climax uses a little over half the CPU (11.4).

P42 Climax is missing in Ardour or Mixbus after an update. On Linux, the VST3 needs their scan first: choose Window > Plugin Manager > Discover New/Updated, then reopen the session (20.1).

CHAPTER NINETEEN

iPad and iPhone

P42 Climax runs on iPad and iPhone with iOS 15 or later. The sound, the controls and the presets are the same as on your computer. The app from the App Store holds two forms:

- **AUv3 plug-in.** For hosts such as AUM, Cubasis and Logic Pro for iPad.
- **Standalone app.** Processes the microphone or the input of an audio interface. It starts with its input muted, to prevent feedback: tap Unmute Input once headphones or an interface are connected.

There is no license to activate on iPad and iPhone. The menu has no License Status, and P42 Climax never plays the soft noise of an unlicensed computer (17.3).

19.1 Touch

Gesture	Does
Drag	Turns the knob or moves the slider.
Double-tap	Returns the control to its default.
Tap a knob, then tap its value while it shows	Opens the numbers keyboard for an exact value. Return sets it.
Double-tap THR or RLS	Opens a box to type a value (9.1).
Tap	Does what a click does (14.2).
Touch a control and keep your finger on it	Explains the control in the help strip, while the help strip is on (10.4).
Drag INPUT DRIVE or MAIN OUT with Link DRIVE & MAIN OUT ticked in the menu	The other knob moves the same number of dB the other way, as a Shift-drag does (14.3).

A finger has no Shift key, so the menu has the row Link DRIVE & MAIN OUT. The link acts only while your finger is on one of the two knobs: loading a preset, typing a value or host automation never moves the other knob. The app and the plug-in share the setting.

Fine adjustment, Shift-Option-drag and hearing a stage without it (14.4) need a mouse and a keyboard. On a touchscreen, type a value for fine steps.

19.2 The Menu and the Panel

The menu has four rows here: About, Manuals, Tooltip is ON / OFF and Link DRIVE & MAIN OUT (19.1). There is no license to manage, no preset folder to open and no window size to set. About shows the version, with no license line.

Manuals offers the Quick Guides and the User Guides on pulsarmodular.com. The app opens them in Safari. A plug-in inside a host cannot open a browser, so it copies the link and says so in the help strip: paste the link into Safari.

The panel always fits the screen, upright or sideways, or the window the host gives the plug-in. While the browser is open, only the preset bar and the browser are fitted to the screen, so their rows stay large enough to tap.

19.3 Presets on iPad and iPhone

Where presets live. Presets are stored inside the app and shared by the app and the plug-in. They are part of the device's backups, and deleting the app deletes them (17.4). There is no folder to open.

Browsing. Tap a preset to load it; double-tap loads it and closes the browser. Touch and hold a preset or a folder for the menu that a right-click opens on the computer. A finger drag scrolls the lists: to move a preset or a folder, choose Move to folder in its menu; to star a preset, tap its star.

Import and export. EXPORT shares the selected preset as a file, for example to the Files app or by AirDrop. IMPORT adds preset files from the Files app to the selected folder.

Deleting. DELETE removes a preset or a folder for good, after asking: iPad and iPhone have no Trash.

Factory presets and updates. The factory presets are copied into the app the first time it starts. An update adds the new factory presets of that version and leaves every preset already there as it is, your Default included. A factory preset you delete does not come back.

CHAPTER TWENTY

Linux

P42 Climax for Linux is the macOS and Windows plug-in built for Linux: the sound, the controls and the presets are the same. It installs as VST3 and LV2 on 64-bit x86 Linux with glibc 2.34 or later: Ubuntu 22.04, Debian 12, Fedora 35, Linux Mint 21 and their later versions, and current Arch-based distributions. 'getconf GNU_LIBC_VERSION' shows the version on your computer. P42 Climax is tested in Ardour 9, Mixbus 11 and REAPER 7.

20.1 Installing and Activating

The download holds two packages that install the same plug-in. Use one of them, never both:

- **.deb package (Ubuntu, Debian, Linux Mint, Pop!_OS).** In its folder, run 'sudo apt install ./p42-climax_<version>-1_amd64.deb'. It installs the LV2 for the whole computer, links the VST3 into every user account's ~/.vst3, and gives each account the factory presets and the user guides. An account created later gets them with 'sudo dpkg-reconfigure p42-climax' and can use the LV2 until then.
- **.tar.gz archive (any distribution, no administrator rights).** Unpack it and run './install.sh' in its folder. It installs into your own ~/.vst3, ~/.lv2 and ~/.local/share.

Two copies of the LV2 make Ardour and Mixbus crash, so install.sh refuses to run while the .deb is installed, and the .deb warns about an archive copy it finds. After installing, rescan plug-ins in REAPER or Bitwig Studio. Ardour and Mixbus load the LV2 when they start, so restart them. For a new or updated VST3, also choose Window > Plugin Manager > Discover New/Updated in Ardour or Mixbus: they do not scan for new or updated VST3 plug-ins at start-up unless "Scan for [New] Plugins on Application Start" is on (Plugin Manager > Show Plugin Prefs). Until then, a session that uses the VST3 opens with a "Missing Plugins" message and keeps P42 Climax as an inactive placeholder: scan, then reopen the session. To update, install the new version the same way. As on macOS and Windows, it writes the factory presets again and refreshes the user guides; your Default and the presets you saved under your own names stay as they are, so save a changed factory preset under a name of your own to keep it.

Uninstalling. Run 'sudo apt remove p42-climax' for the .deb package, or './uninstall.sh' in the folder you installed the .tar.gz archive from. Both keep your presets, the user guides and your settings. To remove them too, delete the P42 Climax folders in ~/.local/share/

Pulsar Modular and ~/.config/Pulsar Modular, but keep the Licensing folder there: it holds every Pulsar Modular license on the computer.

License. Until P42 Climax is activated, it plays a soft noise instead of your audio and opens the license window by itself (17.3). Activate it there as on the other platforms: one activation covers every host and both formats for your user account on this computer.

A new computer. The license is tied to this installation of Linux: reinstalling the system or cloning it counts as a new computer. Before you reinstall, or move P42 Climax to another computer, click Deactivate in the license window; uninstalling does not do it. If P42 Climax reports that it is unlicensed on a computer where it was activated, please contact us instead of activating again: activations are limited.

20.2 Formats and Hosts

- **REAPER.** Use the VST3: REAPER cannot automate the LV2 parameters of JUCE plug-ins such as P42 Climax.
- **Ardour and Mixbus.** Both formats work.
- **Bitwig Studio.** Use the VST3; Bitwig has no LV2 host.
- **Mono and stereo.** The LV2 is stereo only. The VST3 runs on stereo tracks and, where the host offers one, on mono tracks.
- **GR in your DAW.** Only the VST3 reports the limiter's gain reduction to the host (9.3); LV2 has no way to report it.
- **BYPASS.** In the LV2, the host's bypass and the panel's BYPASS are separate switches: the host's bypass takes P42 Climax out of the path in the same way and leaves BYPASS off (11.1).
- **Parameter values.** Hosts show the LV2's parameters as plain numbers, ROUTING as 0 to 2 for example; the VST3 shows the values as the panel does.

20.3 Files, Window and Performance

Each user account has its own presets and settings:

- **Presets:** ~/.local/share/Pulsar Modular/P42 Climax/Presets, in the factory category folders
- **User guides:** ~/.local/share/Pulsar Modular/P42 Climax/User Guides; Manuals in the menu opens them in your PDF viewer
- **Settings:** ~/.config/Pulsar Modular/P42 Climax/Settings

- **License:** ~/.config/Pulsar Modular/Licensing, shared by every Pulsar Modular product on the computer

Open Preset Folder in the menu opens the bank in your file manager. A preset or folder you delete in the browser goes to the desktop's trash, so you can restore it from your file manager. Uninstalling leaves all of these folders in place (20.1).

Window size. The window can be made as small as half the default size and as large as twice the default, within 90 % of the screen; the panel keeps its shape. Resize the VST3 by dragging its corner, and the LV2 by dragging the window frame (in REAPER, the corner). In Ardour and Mixbus the LV2 window does not grow when the browser opens: the wider panel fits inside it, so drag the window wider for a larger browser. Set Default Size in the menu keeps the size for new instances. On a HiDPI screen, both formats follow the DAW's own interface scale, and the window never opens larger than the screen.

Mouse and keyboard. Use the keys given for Windows: Ctrl-drag for fine adjustment, Alt-click to return a control to its default, Ctrl and Alt to hear a stage without it (14.1, 14.4). A desktop that moves windows with Alt and a drag, such as Xfce, takes those clicks: set the key it uses to move windows to Super, or double-click to return a control to its default.

Audio dropouts. Crackles at small buffer sizes usually mean that the DAW is missing realtime privileges. Add your account to the audio group ('sudo usermod -aG audio $USER'), give that group realtime limits (LINUX-NOTES.txt in the download has the command), then log out and back in. On a laptop, also switch to the performance power profile ('powerprofilesctl set performance') for low-latency sessions.

Appendix A. Compatibility With Earlier Versions

Sessions and presets made with earlier versions of P42 Climax open in version 7. A few things work differently.

A.1 Limiter Release (RLS)

RLS now shows the true release time in milliseconds, from 1 to 300 ms. Sessions and presets saved with earlier versions are converted when they load. With the limiter on, they keep their release time. The limiter itself was retuned in version 7 for a cleaner top end: its first stage now starts a few dB below THR (Chapter 9). While the limiter is working, an older session or preset can play up to about 2 dB quieter, so check its level. With the limiter off, RLS starts at the new default, 30 ms. Once you save, the new value is stored.

Host automation of RLS recorded in an earlier version is not converted. Such a lane plays a different release time in version 7. Check it if you automated RLS.

A.2 Other Differences

- **Favorites** are not carried over to the new browser (12.3).
- **OS, OS Type, TX and eight SC entries** stay in your DAW's automation list so old sessions open. They have no effect (13.2).
- **Activation** moves to the new license system by itself the first time version 7 runs online (17.3).
- **SATURATION above 100 %** uses a new preamp stage (4.1). A session or preset saved above 100 % plays it, so it sounds different from version 6: more crunch and even harmonics, at about the same level on full mixes. Below 100 % this stage is not used.
- **Dual Mono** now runs two matched units, one per channel (11.3). A session saved with Dual Mono on sounds very slightly different from version 6.
- **ECO in older sessions.** A session saved with version 6 opens with ECO off when its OS button was on with HD, and with ECO on in every other case (11.4).
- **The limiter is the last stage**, after MIX. In version 6 it sat before MIX, so a session with LMTR on and dry signal blended in with MIX can sound different (Chapter 9).

- **LP FILTER keeps its own slope to the top of the band**. At 48 kHz, with LP FILTER at 20 kHz, the range from 16 to 19 kHz is about 1 dB lower than in version 6. With LP FILTER set low, a little more passes above 12 kHz. Below 5 kHz nothing changed.
- **Mid and Side presets** carry " — MID" or " — SIDE" in their names. The installer removes the old factory names, so you do not see the same preset twice.

Credits

P42 Climax is a product of **Pulsar Modular**.

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P/N: 15013

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