BLEVINS TONE CO.

LUNCHBOX

EIGHT-SLOT CHANNEL STRIP · 25 MODULES · AU · VST3

User Manual



BLEVINS TONE CO. · VERSION 4.0.0

WELCOME

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SECTION 1

Introduction

Lunchbox is a complete channel strip built like a rack of classic 500-series studio modules, each with its own photographed faceplate, character and controls. It runs as an Audio Unit and a VST3 plug-in on macOS.

Signal flows left to right through eight slots, and every slot can hold any of twenty-five modules: preamp and saturation, four kinds of EQ, a de-esser, nine compressors and limiters, two gates, phase alignment, a transient designer, ambience tools, stereo width, tape and an enhancer. A master Output fader finishes the chain.

Every module is modelled on the behaviour of a well-known kind of studio hardware: the circuits, the way the controls respond, and the way the gear reacts when you push it hard. The panels borrow the look of that era of equipment, but the names, designs and artwork are original to Blevins Tone Co.

New in version 4.0

- **Eight component-modelled (CM) modules.** Equaliser CM, Gate CM, Leveling CM, Tube Opto CM, FET 76 CM, VCA CM, Bus Comp-N CM and Bus Comp-S CM are built from the original hardware's factory drawings and solved part by part: every resistor, capacitor, tube, transistor, transformer and light cell. Where the hardware had more than one revision, each is on a selector. See *Component-modelled (CM) modules*.
- **Three new kinds of module:** Tube Opto CM (an early-'90s optical tube compressor), Bus Comp-N CM (a two-channel diode-bridge limiter and compressor) and Bus Comp-S CM (a classic console centre-section stereo bus compressor).
- **A new look.** Every module has a photographed faceplate with real 500-series screws, photographed knobs and photo buttons and toggles.
- **Air Space** is smoother at larger sizes, and has a new HIGH CUT knob next to LOW CUT.
- Sessions made with earlier versions open with the same sound. Every existing module is still here, exactly as it was.

CM IN THE MENU

Modules marked CM in the slot menu are component-level models. They sound and respond the most like the hardware, and they use more CPU than the other modules.

New in versions 3.2 to 3.7

- **Move modules (3.2):** drag a module by its faceplate to another slot; its settings and MIX go with it.
- **Module settings (3.2):** Save, Load, Copy, Paste and Reset to Default for each module.
- **Close-up view (3.2):** double-click a faceplate to see that module on its own, as large as your screen allows.
- **Air Space LOW CUT (3.3)**, **Mono to stereo (3.4)** on mono tracks, and the **LOW LATENCY** switch for tracking (3.5).
- **Character controls on Leveling and FET 76 (3.7):** a UNIT selector for the version of the hardware and an AGE knob for how far it has drifted.

SECTION 2

Installing Lunchbox

Lunchbox comes in the Blevins Tone Co. installer, a standard Mac installer. It installs two versions of the plug-in, so it works in almost any recording app:

- **Audio Unit (AU)** for Logic Pro, GarageBand, MainStage and other AU hosts.
- **VST3** for most other recording apps that load VST3 plug-ins.

What you need

- A Mac running macOS 11 or later (Apple silicon or Intel; it runs natively on both).
- A 64-bit AU or VST3 host.

Install

1	Quit your recording app.
2	Double-click **Install Blevins Tone Co.pkg** and follow the steps. Click **Customize** if you only want some of the plug-ins.
3	Open your recording app. If Lunchbox doesn't appear, ask the app to rescan its plug-ins.
4	**Logic Pro:** on a track or bus Audio FX slot, choose **Audio Units › Blevins Tone Co. › Lunchbox**. **Other apps:** look in the VST3 list under Blevins Tone Co.

If something goes wrong

Problem	What to do
Lunchbox doesn't appear in Logic	In Logic, open Settings › Plug-in Manager, find Lunchbox, and click Reset & Rescan Selection.
Lunchbox doesn't appear in another app	Make sure the app is scanning /Library/Audio/Plug-Ins/VST3, then rescan its plug-ins.

UNINSTALLING

The installer puts **Blevins Tone Co. Uninstaller** in Applications › Blevins Tone Co. Open it to remove Lunchbox, or any of the other plug-ins.

SECTION 3

Trial and activation

Lunchbox runs as a full, free 14-day trial on each computer: every feature works. When the trial ends, Lunchbox goes quiet until you activate it with your licence from your Blevins Tone Co. purchase.

Start a trial or activate

- Open Lunchbox in your recording app. The first time, the activation panel covers the window. Click **Activate online**.
- Your browser opens your Blevins Tone Co. account. Sign in, or create an account with your email. If you have bought Lunchbox, your licence activates; if not, your 14-day trial starts. Go back to your recording app: Lunchbox unlocks within a few seconds. There is no serial number to type.
- During the trial, a small Trial pill in the bottom-right corner shows the days left. Click Unlock on it to open the activation panel at any time.

Your licence and your computers

- Each licence works on up to 3 computers. Once activated, Lunchbox keeps working without an internet connection.
- To move it to another computer, deactivate it from the licence panel on the old one, or sign in to your account and remove the old computer; then activate on the new one.
- Studio computer never online? Click **No internet? Activate offline** in the activation panel and follow the steps.
- To update, download the latest installer from your account and run it again. Your licence, settings and presets stay as they are.

SECTION 4

The rack at a glance



The default rack: Pre, Equaliser, De-Esser, Leveling, FET 76, Sonic and two empty slots.

Lunchbox opens with Pre, Equaliser, De-Esser, Leveling, FET 76, Sonic and two empty slots. Audio enters at the left, passes through each slot in turn, and leaves through the Output fader on the bottom rail.

Choosing a module

Click the plate under any slot and pick a module from the menu. The menu lists them grouped by job, with each CM model right after the module of the same kind: Pre, Phase, Gate, Gate CM, Equaliser, Equaliser CM, Graphic EQ, Program EQ, Air EQ, De-Esser, Leveling, Leveling CM, Tube Opto CM, FET 76, FET 76 CM, VCA Comp, VCA CM, Bus Comp-N CM, Bus Comp-S CM, Transient, Recovery, Tape, Sonic, Width, Air Space, and Empty.

- **Any order, duplicates allowed.** Two Equalisers side by side, or a Leveling amp into two FET 76s, all work. Each copy has its own settings.
- **Settings are remembered.** Every slot keeps its own settings for every module type. Switch slot 3 from Equaliser to FET 76 and back again, and your EQ settings are still there.
- **Click-free.** When you change a module, Lunchbox fades the audio out and back in over about 25 ms.

The MIX knob

The small MIX knob next to each plate blends that module's output with what went into it. 100% is normal; lower settings give parallel processing, for example a heavily squashed FET 76 at 30% under the untouched signal.

Moving modules

Drag a module by its faceplate (anywhere that isn't a control) or by the rail above it, and drop it on another slot. It's inserted there with all its settings and its MIX, and the modules in between shift over by one, as when you re-rack hardware. A gold bar shows where it will land. Logic's automation stays with the slot number, not the module: after moving a module, check any automation you drew on that slot.

Module settings and close-up

- The menu button on the rail above each module has **Save Settings**, **Load Settings**, **Copy**, **Paste** and **Reset to Default**. Saved settings appear in every Lunchbox, for any slot holding the same kind of module, and are kept in ~/Library/Audio/Presets/Blevins Tone Co./Lunchbox Modules.
- **Close-up:** click the corner-brackets button on the rail, or double-click a faceplate, and the window shows that one module, as large as your screen allows. The arrows step to the previous or next slot; the button at the top right (or Esc) goes back to the rack.

Working the controls

- **Knobs:** drag up/down or left/right. Hold the mouse on a knob to see its exact value. Double-click to return it to its default.
- **Toggles, push buttons and keycap selectors:** click to change.
- **IN switches:** every module has one. When it's off, the module is bypassed with a short crossfade.
- **Window size:** Lunchbox opens at 80% because eight slots are wide. Drag the bottom-right corner to resize; the size is remembered.

SECTION 5

Quality, latency and CPU

The bottom rail carries the QUALITY buttons, the LOW LATENCY switch, the LUNCHBOX plate and the master Output fader (-48 to +12 dB; double-click to return to 0 dB).

Quality

The QUALITY buttons choose how much Lunchbox oversamples the chain. Oversampling runs the saturation and dynamics at a higher internal sample rate, so the harmonics they create don't fold back as harsh, unrelated tones.

Setting	What it does	When to use it
NORMAL	4x oversampling	Tracking and mixing; lowest CPU
HQ	8x oversampling: cleaner saturation and limiting on bright material	Heavily driven Pre, Tape or FET 76; final mixes
HQ BOUNCE	NORMAL while you play; HQ automatically when you bounce or export	Best of both: light on CPU while you work, highest quality in the final file

The CM modules run their circuits at their own internal rate (about 96 to 192 kHz, depending on the module) whatever the QUALITY setting, so they sound the same in all three.

Low latency

Lunchbox delays audio by about 8 ms, whatever modules are loaded and in every quality setting, and your host compensates for it automatically. Most of it is the De-Esser's look-ahead. **LOW LATENCY** turns the look-ahead off, so Lunchbox adds only about 0.1 ms and Logic keeps it active in Low Latency Mode: use it while tracking, turn it off for mixing. After switching it on, turn Logic's Low Latency Mode off and on again (or toggle the track's record-enable) so Logic re-checks the delay.

CPU

The original modules are light. The CM modules solve their circuits part by part and use more: on a fast Mac, from a few percent of one core (Equaliser CM, Gate CM, VCA CM, FET 76 CM, Bus Comp-S CM) up to roughly a tenth to a quarter of a core (Leveling CM, Tube Opto CM, Bus Comp-N CM). If a session gets heavy, use NORMAL or HQ BOUNCE, raise your host's buffer size, or bounce finished tracks.

SECTION 6

Module overview

Group	Module	In the style of	Use it for
Front end	Pre	A console preamp with three saturation voicings	Low-cut, level and analog colour
	Phase	Phase-alignment boxes	Lining up two mics
	Gate	A classic console gate / expander	Removing bleed and noise
	Gate CM	A British console channel's gate / expander card, part by part	The console gate's exact feel
EQ	Equaliser	A large-format console channel EQ	Precise four-band tone shaping
	Equaliser CM	Three British console EQ cards, part by part	The real cards' curves and interaction
	Graphic EQ	A 500-series 10-band graphic	Quick, broad tone moves
	Program EQ	A passive tube program equaliser	Smooth weight and air
	Air EQ	A five-band air-band EQ	Big boosts that never get honky
Dynamics	De-Esser	Modern and broadcast de-essers	Taming sibilance
	Leveling	An optical leveling amplifier	Smooth, musical compression
	Leveling CM	The optical leveling amplifier, part by part	The real tube and light-panel behaviour
	Tube Opto CM	An early-'90s optical tube compressor	Smooth, transparent, all-tube compression
	FET 76	A solid-state FET limiter	Fast, aggressive peak control
	FET 76 CM	Three revisions of the FET limiter, part by part	The real unit's punch and grit
	VCA Comp	A 500-series VCA compressor	Clean, punchy compression
	VCA CM	The first RMS compressor with a VU meter, part by part	Smooth, program-dependent RMS levelling
	Bus Comp-N CM	A two-channel diode-bridge limiter / compressor	Thick, glued mix-bus and drum compression
	Bus Comp-S CM	A console centre-section stereo bus compressor	The classic mix-bus glue
	Transient	A two-knob transient designer	More or less attack and sustain
Character and space	Recovery	Ambience recovery processors	More or less room sound
	Tape	A two-track mastering tape deck	Head bump and soft saturation
	Sonic	A phase-aligned enhancer	Clarity and definition

Group	Module	In the style of	Use it for
	Width	A stereo image box	Wider, narrower, mono-safe bass
	Air Space	A natural short ambience	Natural room on a close mic

SECTION 7

Component-modelled (CM) modules



A rack of CM modules: Equaliser CM, Leveling CM, FET 76 CM, Tube Opto CM and Bus Comp-S CM, between Pre, De-Esser and Air Space.

The eight CM modules are built from the original hardware's factory schematics, card drawings and service notes. Instead of imitating how the unit sounds, Lunchbox solves the circuit itself, sample by sample: the transformers, tubes, transistors, op-amps, diodes, light cells, pots and switches, with the values on the drawings. That's why they react to level, frequency and timing the way the hardware does, including the quirks.

- **Revisions.** Where the hardware changed over the years, the module has a selector for each documented revision (REV, CARD or a set of keycaps). Each revision uses that version's own drawing.
- **Separate modules.** Each CM sits next to the original module of the same kind, which stays exactly as it was. Use the original when CPU matters or for its own sound; use the CM when you want the hardware's behaviour.
- **AGE.** Leveling CM, FET 76 CM and VCA CM have an AGE knob that drifts the parts a service technician would trim: the default, 30%, is a well-used unit.
- **Every instance is a slightly different unit**, within the parts' tolerances, saved with the session so it reopens the same.

WHY MORE CPU

A CM module works out every part of the circuit for every sample. Each one is made as efficient as possible while still matching a full, unhurried solve of the same circuit, but they are heavier than the original modules.

SECTION 8

Pre



Pre is the front end of the strip: clean up the low end, set your level, and add as much analog colour as the track wants. Inside the module the signal runs High Pass, Gain, Grit, then Trim. The small tube window glows brighter the harder you drive it.

Grit is tapered so the first half of the knob adds colour and the heavy saturation lives in the top third. Its output is level-compensated, so turning Grit up changes the tone without making the track much louder.

Control	Range (default)	What it does
High Pass	Off, 20–400 Hz (Off)	Removes rumble before anything else hears it. 12 dB per octave.
Gain	-12 to +24 dB (0)	Level into Grit. More gain drives the saturation harder.
Grit	0–100% (25%)	Amount of saturation.
Tube / Tran / Tape	3-way (Tube)	**Tube:** warm, mostly 2nd harmonic, blooms on loud notes. **Transistor:** clean until near its limit, then a bright, crunchy edge. **Tape:** a slow 7.5 ips machine: soft onset, low-end bump, highs that saturate first.
Trim	-24 to +12 dB (0)	Level leaving the module.

SECTION 9

Phase



A phase-alignment tool for lining up two mics on one source, such as a bass DI and amp, or kick in and out. Best in the first slot. Below 100% Blend, the shifted signal sums with the original and carves a moving notch, like the phase-EQ boxes.

Control	Range (default)	What it does
Polarity (Ø)	on / off	Flips the polarity, click-free.
Phase In	on / off	Switches the variable phase shift in.
Phase	0–180° (0)	Phase rotation at the reference frequency.
Lo / Hi	switch (Lo)	Reference frequency: Lo = 80 Hz, Hi = 400 Hz.
Delay	0–4 ms (0)	Fine time alignment, accurate to a fraction of a sample.
Blend	0–100% (100%)	Processed against untouched signal.

SECTION 10

Gate



A gate and expander in the style of a classic console dynamics section. In GATE mode it opens at the threshold and closes 3 dB below it, so it doesn't chatter. EXPAND is a gentle 2:1 downward expander below the threshold.

The KEY filters shape only what the gate listens to: high-pass a snare mic so the kick doesn't open it. KEY LISTEN lets you hear the key.

Control	Range (default)	What it does
Threshold	-80 to 0 dB (-50)	Level at which it opens.
Range	0–80 dB (40)	How far it turns down when closed.
Fast	on / off (on)	Fast attack, for drums; off for a softer opening.
Hold	0–500 ms (20)	Keeps it open after the signal falls away.
Release	5 ms–2 s (120)	How long it takes to close.
Gate / Expand	switch (Gate)	Hard gate, or soft 2:1 expansion.
Key HPF / LPF	Off–1 kHz / 1–20 kHz or Off	Filters on the detector only.
Listen	on / off	Hear the filtered key.

SECTION 11

Gate CM



A component-level model of the gate / expander card from a classic British console channel (the same card in its E- and G-series channels). It has a true-RMS side chain with a very short averaging time, so, as on the console, low notes near the threshold can make it chatter. A trigger opens it a little above the THRESHOLD setting, with a gap that widens as the threshold is turned down. The gain cell is solved transistor by transistor. Five LEDs show the attenuation at 3, 6, 10, 14 and 20 dB.

As on the console, there is no hold control and no key filter.

Control	Range (default)	What it does
E / G	switch (E)	The console series: RANGE goes to 40 dB (E) or 50 dB (G).
Threshold	-30 to +10 (-10)	Where it opens.
Range	0 to 40 / 50 dB (full)	How far it turns down when closed.
Release	0.1–4 s	How long it takes to close.
Fast	on / off (off)	Attack of 40 dB in 1.5 ms, or 100 µs with FAST.
Gate / Expand	switch (Gate)	Gate, or 2:1 expansion.

SECTION 12

Equaliser



A four-band parametric EQ with high- and low-pass filters, modelled on the channel EQ of a classic large-format console. The HF and LF bands are shelves; press BELL to turn either into a peaking band.

The bells use proportional Q: small moves are broad and musical, big moves become focused and surgical. The module runs oversampled, so its top band keeps its true analog shape right up to 16 kHz.

Control	Range (default)	What it does
HPF	Off to 350 Hz	18 dB per octave. Fully left is off.
LPF	3–22 kHz or Off	12 dB per octave. Fully right is off.
HF (red)	1.5–16 kHz, ±15 dB	Shelf, or bell with BELL.
HMF (green)	600 Hz–7 kHz, ±15 dB, Q 0.1–4	Upper-mid bell.
LMF (blue)	200 Hz–2.5 kHz, ±15 dB, Q 0.1–4	Lower-mid bell.
LF (brown)	30–450 Hz, ±15 dB	Shelf, or bell with BELL.

SECTION 13

Equaliser CM



A component-level model of the classic British console channel EQ, from three factory card drawings. Every resistor and capacitor on the drawings is in the model, including the resistors that cross-couple neighbouring bands, the centre-tapped gain pots and the Q networks, so the bands interact the way they do on the console. The knob readouts show what the selected card does at that rotation.

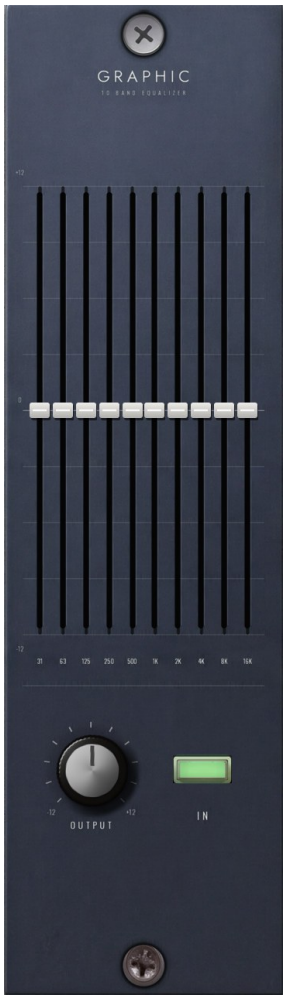
CARD	What it is
BROWN	The first card of the E-series console. Four bands, BELL on HF and LF, ±15 dB, mid Q 0.5 to 2.5, and 12 dB/oct filters that stay in circuit (their knob ends are real roll-offs, not OFF).
BLACK (default)	The later E-series card. HMF up to 10 kHz, LMF down to about 140 Hz, ±15 dB at the widest Q rising to ±18 dB at the narrowest, mid Q 0.5 to 4.5, an 18 dB/oct high-pass, and filters that switch out at the knob ends.
G	The G-series card, a different design: the bandwidth tightens as the gain goes up, about ±20 dB, shelves with a small dip before the shelf, a **x3** switch on HMF (1.8 to 18 kHz) and a **/3** switch on LMF, and no bell switches.

Control	What it does
HPF / LPF	High- and low-pass filters (slopes and ends as the card above).
HF / LF	Shelves, with BELL on the BROWN and BLACK cards.

Control	What it does
HMF / LMF	Mid bells with Freq, Gain and Q. On G: HMF x3 and LMF /3.
IN	Switches the card in or out.

SECTION 14

Graphic EQ



A 500-series style 10-band graphic EQ. Each band's width depends on how far its slider is moved: small moves are wide and gentle, big moves get focused. Neighbouring bands overlap and add up the way the hardware's do.

Control	Range (default)	What it does
31 Hz – 16 kHz	±12 dB each (0)	Ten octave-spaced bands.
Output	±12 dB (0)	Level.

SECTION 15

Program EQ



A passive tube program equaliser. The low Boost and Atten are deliberately offset: use both at once for extra weight at the very bottom and a dip in the low mids just above it. The tube make-up stage adds a faint, level-dependent warmth.

Control	Range (default)	What it does
Low Freq	20, 30, 60, 100 Hz (30)	Frequency for Low Boost and Atten.
Low Boost / Atten	0–10 (0)	Boost up to about +13.5 dB; Atten up to -10 dB, a gentler shelf sitting higher.
High Freq	3–16 kHz (8 kHz)	Centre of the high boost.
High Boost	0–10 (0)	Up to +18 dB.
Bandwidth	0–10 (5)	Sharp to broad.
Atten Sel / High Atten	5, 10, 20 kHz / 0–10	High shelf cut, up to -16 dB.
Output	±12 dB (0)	Level.

SECTION 16

Air EQ



A five-band air-band EQ: boost-mostly, very broad curves that you can push a long way without the sound getting honky, plus the AIR high shelf. Each band spans three to four octaves.

Control	Range (default)	What it does
Sub (10 Hz), 40, 160, 650, 2.5k	-4.5 to +15 dB (0)	Broad bells.
Air	0 to +20 dB (0)	A very wide high shelf.
Air Freq	Off, 2.5k–40k (Off)	Where the shelf sits. 40k adds a gentle lift you feel in the top octave.
Output	±12 dB (0)	Level.

SECTION 17

De-Esser



Turns down harsh "s", "sh" and "t" sounds only when they jump out. The LED ladder shows the reduction.

Setting it up: turn on LISTEN and sweep Freq until you hear mostly the "s" sounds; turn LISTEN off; lower Thresh until the ladder lights on the sibilants. Around 3–6 dB is natural.

Control	Range (default)	What it does
Freq	2–16 kHz (6.5 kHz)	Where the sibilance lives. Most voices sit between 5 and 8 kHz.
Width	wide to narrow	Width of the band (Band filter only).
Thresh	-60 to 0 dB (-22)	How loud the sibilance must be before it acts.
Range	0–24 dB (8)	The most it will ever turn things down.
Attack / Release	0.1–10 ms / 10–250 ms	How fast it reacts and lets go.
Mode	Wide / Split (Split)	Split turns down only the sibilant frequencies; Wide ducks the whole signal for a moment.
Filter	Hi / Band (Hi)	Hi targets everything above Freq; Band targets a band centred on Freq.

Control	Range (default)	What it does
Detect	Abs / Rel (Abs)	Rel compares the sibilance with the rest of the voice, so it keeps working as the singer moves.
LOOK / LISTEN	on / off	2 ms look-ahead to catch the first edge; solo the targeted band.

SECTION 18

Leveling



A smooth, program-dependent compressor modelled on a classic optical leveling amplifier with a tube output stage. Two big knobs and almost nothing else.

The attack takes about 10 ms, so the first part of a transient slips through. About half the reduction recovers within a tenth of a second and the rest over one to several seconds; the harder it has worked, the slower that last part. The light cell distorts most at light gain reduction and cleans up as it clamps down, and the transformer saturates gently in the low end.

Control	Range (default)	What it does
Peak Reduction	0–100 (0)	How much compression.
Gain	0–100 (40 ≈ unity)	Make-up gain, about -20 to +30 dB. It doesn't change the amount of compression.
Mode	Comp / Limit	Comp is gentle, about 3:1. Limit is firmer, about 10:1 and more.
Meter	GR / +4 / +10	Gain reduction, or output (0 VU at -18 or -12 dBFS).
HF Emph	0–100 (0)	Makes it react more to bright material. Useful on vocals that get edgy when loud.
Unit	'67 / '65 / '62 ('67)	**'67:** brightest, fastest, cleanest. **'65:** a bit slower, more tube colour, darkens more. **'62:** an aged light panel: slowest, longest memory, least headroom, darkest.

Control	Range (default)	What it does
Age	0–100% (30%)	The light panel dims (more Peak Reduction for the same reduction, slower attack, longer release tail), and it gets darker the harder it works.
Trim	-24 to +12 dB (0)	Output level after the tube stage.

SECTION 19

Leveling CM



A component-level model of the optical leveling amplifier. Instead of a behavioural model, it solves the circuit every sample: the input transformer, the gain pot and photocells, both preamp tube stages, the output tube pair with its overall feedback, the output transformer, and the side chain driving the light panel. The light panel and the photocell are modelled from their physics: panel brightness from drive voltage, the cell's fast and slow responses, and its memory. COMPRESS / LIMIT is the real switch in the circuit. The meter is a photographed VU with a live needle.

Control	Range (default)	What it does
Peak Reduction	0–100 (0)	How much compression.
Gain	0–100 (22)	The real audio-taper gain pot; full clockwise is the circuit's maximum gain.
Comp / Limit	switch (Comp)	The circuit's own switch.
HF Emph	0–100 (0)	More reaction to bright material.
Meter	GR / +4 / +10	Gain reduction or output.
REV	'65 / '68 ('65)	**'65** follows the 1966 factory drawing; **'68** the 1968 drawing, with the later input transformer and a retuned driver stage.
Age	0–100% (30%)	How far the unit has drifted.
Trim	-24 to +12 dB (0)	Final level.

Two linked channels share one control voltage, like two units strapped for stereo.

SECTION 20

Tube Opto CM



A component-level model of an early-'90s optical tube compressor, from the factory service drawings: the input transformer, the front-panel network (Threshold, Ratio and Gain all sit around the light cell), a twin-triode gain stage and phase splitter, a push-pull tube output stage with feedback from its own transformer winding, and the whole solid-state side chain. The sealed light cell is modelled from photocell physics and tuned to the factory calibration. It's one documented unit, so there is no revision selector.

Control	Range (default)	What it does
Threshold	Off to -40 dBu (Off)	The input level where gain reduction reaches 1 dB. -40 dBu is about -62 dBFS.
Ratio	2:1 upward (2:1)	As in the circuit, it firms up with depth: a soft knee at light reduction, toward 10:1 when it works hard.
Attack	0.5–300 ms	Used in MANUAL and FIX/MAN.
Release	0.05–10 s	The long times live near the top of the knob, as on the hardware.
Attack / Release	Fixed / Manual / Fix-Man (Manual)	**Fixed:** the light cell's own 1 ms / 50 ms. **Manual:** the knobs. **Fix-Man:** fast release after short peaks, the RELEASE time after long ones.

Control	Range (default)	What it does
Gain	Off to +30 dB (unity)	Make-up gain after the gain reduction; about 30 on the knob is unity.
Meter	In / Comp / Out (Comp)	0 VU = +4 dBu = -18 dBFS.
Trim	-24 to +12 dB (0)	Lunchbox's own output trim.

The two channels link like two units on the side-chain bus: whichever compresses more controls both.

SECTION 21

FET 76



A fast, aggressive peak limiter modelled on a classic solid-state FET limiter. There's no threshold: set the compression with Input, match the level with Output. ALL lowers the threshold and over-compresses, so louder input can come out quieter; on room mics and drum buses it gives the classic explosive, pumping sound.

Control	Range (default)	What it does
Input	0–48 (20)	Drives the signal into a fixed threshold. More input, more compression.
Output	0–48 (28)	Make-up gain, -24 to +24 dB (24 is unity).
Attack	SLOW / OFF, 1–7 (3)	1 to 7 runs from 800 µs to 20 µs; higher is faster. The bottom is SLOW (10 ms) on Modern, OFF (no compression, amplifier colour only) on the other units.
Release	1–7 (5)	1 = 1.1 s, 7 = 50 ms; higher is faster.
Ratio	2, 4, 8, 20, ALL (4)	2:1 and 4:1 compress; 8:1 and 20:1 limit; ALL is the all-buttons mode, which lags on the first hit.
Meter	GR, +8, +4, OFF	Gain reduction, output level, or needle parked.

Control	Range (default)	What it does
Unit	Modern / Blue / Black / Silver (Modern)	**Modern:** the original Lunchbox sound. **Blue:** more gain and grit, the most FET distortion. **Black:** the low-noise circuit, the "clean punch". **Silver:** the cleanest.
Age	0–100% (30%)	The FET bias creeps (a little reduction that never lets go), threshold and timing drift, and the amps distort more.
Trim	-24 to +12 dB (0)	Final level.

SECTION 22

FET 76 CM



A component-level model of the FET limiter from the factory drawings, one revision per faceplate. The gain-reduction cell (the FET working as a variable resistor) and the whole side chain are solved part by part: the ratio switch's bias ladder, the diode detector, the attack network and the release network into the hold capacitor. The audio loop runs at about 192 kHz, so the FET's distortion doesn't fold back when you drive it hard. Each unit's FET bias is trimmed against its own FET, the way the factory set them up.

Control	Range (default)	What it does
Input	numbered like the hardware (24)	dB of loss: a lower number means more signal into the limiter. Turn clockwise for more compression.
Output	numbered like the hardware (24)	Output level, the same way.
Attack	OFF, 1–7 (3)	7 is fastest (about 0.13 ms). All the way down is OFF: no reduction, amplifier colour only.
Release	1–7 (4)	About 1.5 s (1) to 0.1 s (7).
Ratio	4, 8, 12, 20, ALL (4)	As on the hardware, the higher ratios also raise the threshold, so at a light setting 12:1 and 20:1 compress less than 4:1 and 8:1. ALL clamps hardest.
Meter	GR, +8, +4, OFF	The GR meter reads the control voltage, like the hardware's.

Control	Range (default)	What it does
REV	Blue / Black / Silver (Black)	**Blue:** the 1967 original, the most colour. **Black:** the early-'70s low-noise version with the class A output. **Silver:** the late-'70s version, the cleanest.
Age	0–100% (30%)	How far the unit has drifted.
Trim	-24 to +12 dB (0)	Final level.

SECTION 23

VCA Comp



A 500-series style VCA compressor: clean, punchy and predictable. NEW is feed-forward with an exact ratio; OLD is a feedback design with the softer, glued response of older units. THRUST tilts the detector so it reacts to energy per octave instead of the low end, so kick and bass stop pumping the mix.

Control	Range (default)	What it does
Threshold	-40 to +10 dB (-10)	Where compression starts.
Ratio	1:1 to ∞:1 (4:1)	Amount of compression above the threshold.
Attack	1–25 ms (10)	How fast it clamps down.
Release	50 ms–3 s (300)	Recovery time; short peaks recover faster.
Output	-12 to +24 dB (0)	Make-up gain.
Thrust / Old-New / Hard	switches	Detector tilt; feedback or feed-forward; hard or soft knee.

SECTION 24

VCA CM



A component-level model of the first RMS compressor / limiter with a VU meter (1976), from the factory main-board schematic and the drawing of its potted gain module. The gain cell is solved transistor by transistor, and the RMS detector is the log-domain circuit itself. Its timing comes from the parts, which is why there are no attack or release knobs: about 15 ms for a 10 dB jump, 7 ms for 20 dB and 3 ms for 30 dB, and a release of about 120 dB per second. The BELOW and ABOVE lamps show which side of the threshold the signal is on.

Control	Range (default)	What it does
Threshold	10 mV to 3 V RMS (about -10 dB)	Where compression starts, with a hard knee.
Compression	1:1 to ∞	The panel's ∞ is 120:1.
Output Gain	±20 dB (0)	Make-up gain.
Meter	In / Out / GR (GR)	What the VU shows.
Age	0–100% (30%)	Detunes the symmetry trims and the timing capacitor, the trims a service tech would reset.
Trim	-24 to +12 dB (0)	Final level.

Both channels share one detector, as with two units' stereo coupling. A little 2nd and 3rd harmonic distortion comes from the circuit itself, as on the original.

SECTION 25

Bus Comp-N CM



A component-level model of a two-channel diode-bridge limiter / compressor, from the factory handbooks and drawings. The signal goes through the input transformer, the four-diode bridge, the transistor followers, the interstage transformer, the output card and the output transformer, all solved device by device, and both side chains are complete. **ST** links the two channels, so both bridges follow the higher control voltage. The LIMITER and COMPRESSOR lamps light while their section is in.

Control	Range (default)	What it does
REV	'89 / '99 / N (N)	**'89:** the 1989 board with the IC output card and the shorter limiter hold. **'99:** the late-'90s board with the discrete class A output card. **N:** as '99, plus the compressor FAST switch.
Limit In	on / off (off)	Switches the limiter in.
Limit Level	+4 to +15 (+12)	The limiter's output ceiling.
Limit Recovery	50, 100, 200, 800 ms, Auto 1, Auto 2 (Auto 1)	How fast the limiter recovers.
Limit Fast	on / off (off)	A faster limiter attack.
Compress In	on / off (on)	Switches the compressor in.
Threshold	-20 to +10 (-4)	Where compression starts.
Ratio	1.5:1 to 6:1 (2:1)	Amount of compression.

Control	Range (default)	What it does
Compress Recovery	100 ms, 400 ms, 800 ms, 1.5 s, Auto 1, Auto 2 (Auto 1)	How fast the compressor recovers.
Gain	0–20 dB (4 dB)	Make-up gain.
Compress Fast	on / off (off), N only	A faster compressor attack; off, a gentle low cut in the side chain.
ST	on / off (on)	Stereo link.
Trim	-24 to +12 dB (0)	Final level.

SECTION 26

Bus Comp-S CM



A component-level model of the classic console centre-section stereo bus compressor, from the original card drawings. It models the audio VCAs, the matched side-chain VCAs that make it behave like a feedback compressor, the full-wave rectifiers, the ratio network with its dead zone and the 2:1 position's diode knee, the stereo link (the louder channel's rectifier wins), and the two-stage AUTO release. Its faceplate is in the original's colours.

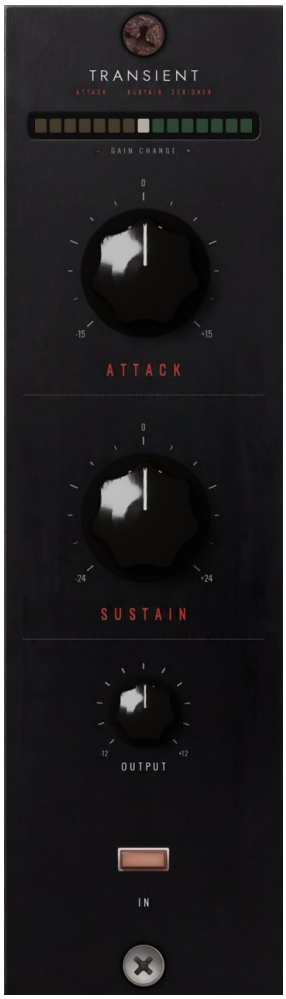
Control	Range (default)	What it does
REV	'81 / '87 ('87)	**'81:** the early cards. **'87:** the later centre section, with a single-chip side-chain VCA and faster side-chain op-amps.
Threshold	-15 to +15 dB (+10)	Where compression starts.
Make-Up	-5 to +15 dB (0)	Make-up gain.
Attack	0.1, 0.3, 1, 3, 10, 30 ms (3 ms)	How fast it clamps down.
Release	0.1, 0.3, 0.6, 1.2 s, Auto (Auto)	Auto recovers fast after short peaks and slowly after sustained compression.
Ratio	2:1, 4:1, 10:1 (4:1)	Amount of compression.
IN	on / off	Switches the compressor in.
Trim	-24 to +12 dB (0)	Final level.

MIX BUS START

Ratio 2:1 or 4:1, Attack 10 or 30 ms, Release Auto, and lower Threshold until the meter shows 2 to 4 dB on the loudest parts. Use Make-Up to match the level.

SECTION 27

Transient



A two-knob transient designer. It works the same at any level, so a quiet hit is shaped like a loud one, and steady sounds are left completely untouched. ATTACK shapes just the front edge of each hit, easing off over about 15 ms. SUSTAIN follows how fast the note decays, resetting on every new hit.

Control	Range (default)	What it does
Attack	±15 dB (0)	Up for more punch, down to soften the front of each hit.
Sustain	±24 dB (0)	Up to bring out the body and ring, down to tighten.
Output	±12 dB (0)	Level.

SECTION 28

Recovery



One knob that reduces or recovers the room sound in a single track. Negative values lower the room and bleed in the decays smoothly (never chopped like a gate); positive values bring up the ambience and the low-level decay of every note. Direct sound and steady notes are left untouched, so sustained parts never pump.

Control	Range (default)	What it does
Amount	-100% to +100% (0)	Reduce (-) or recover (+).
Tail	50 ms–1.5 s (250)	How long after a peak the treatment lasts.
Low Cut / High Cut	20 Hz–1 kHz / 2–20 kHz	Limits the treatment to a band, so bass and top don't bloom.
Width	0–100% (0)	Applies the recovered ambience more to the sides.

SECTION 29

Tape



A two-track mastering deck on modern tape as a channel colour box: head bump, smooth top-end loss and very soft, gradual magnetic saturation. It's a different animal from Pre's Tape grit, which is a slow machine pushed hard.

Control	Range (default)	What it does
Record	-6 to +18 dB (0)	Level onto tape. More level, more saturation.
Speed	7.5, 15, 30 ips (15)	Slower is warmer, with a lower head bump and earlier top-end saturation.
Bias	Under – Nominal – Over	Under-bias is brighter and grittier; over-bias is darker and cleaner.
Output	-18 to +6 dB (0)	Playback level.
Wow & Flutter	0–100% (0)	Subtle pitch movement of the transport.

SECTION 30

Sonic



A phase-aligned enhancer: it makes a track clearer and more defined without adding distortion. It delays the lows by about 2.5 ms and the mids by about 0.5 ms, so the highs arrive first and every attack snaps into focus. With both knobs at 0 the frequency response is perfectly flat and only the timing changes. Start with both around 3.

Control	Range (default)	What it does
Lo Contour	0–10 (3)	Adds weight in the low end, up to +12 dB.
Process	0–10 (3)	Lifts the high end from about 2.5 kHz, peaking near 5 kHz, up to +12 dB.

SECTION 31

Width

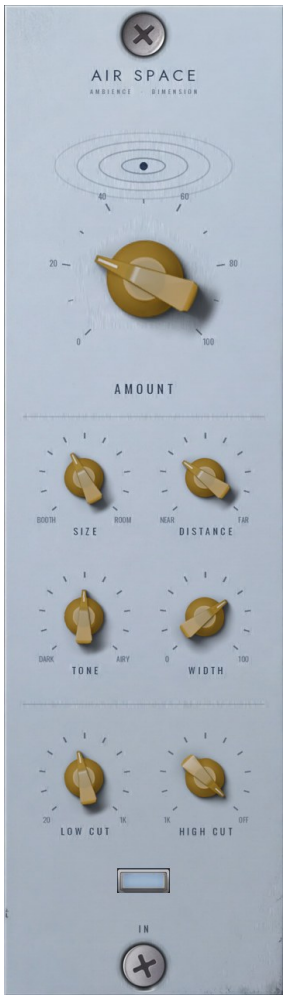


A stereo image module. The low end can be kept in mono, and SPACE adds a subtle, mono-compatible widening: anything it adds cancels exactly when the track is summed to mono.

Control	Range (default)	What it does
Width	0–200% (100%)	0 is mono, 100 unchanged, 200 very wide.
Mid / Side	±12 dB (0)	Levels of the centre and sides.
Mono Bass	Off, 40–300 Hz (Off)	Keeps everything below this frequency centred.
Space	0–100% (0)	Frequency-dependent widening that stays mono-safe.

SECTION 32

Air Space



Gives close-miked, dead sources a natural sense of space, like moving the mic back a little in a good-sounding room, rather than an obvious reverb. The dry signal is never touched; at Amount 0 the output is identical to the input. In 4.0 the early reflections and the tail are diffused more densely, so the larger sizes are smooth rather than pingy.

Control	Range (default)	What it does
Amount	0–100% (25%)	Ambience level. 100% is still tasteful.
Size	0–100% (40%)	Small booth to medium live room.
Distance	0–100% (30%)	Near to far: more pre-delay, darker, more room.
Tone	0–100% (50%)	Darker to brighter ambience.
Width	0–100% (70%)	Stereo spread of the ambience.
Low Cut	20 Hz–1 kHz (120 Hz)	High-pass on the ambience only, 12 dB per octave.
High Cut	1 kHz to Off (Off)	Low-pass on the ambience only, 12 dB per octave. New in 4.0.

SECTION 33

Automation and sessions

Automation

Every control can be automated. Parameters are named by slot, for example Slot 3 EQ HMF Gain or Slot 5 FET Input, so duplicate modules never get mixed up. Automation for a module that isn't currently loaded in that slot is kept, and takes effect when you select that module. The module choice itself can be automated too; each change makes a short fade.

Sessions and presets

Your host saves everything with the session. Use its preset menu (in Logic Pro, the Settings menu at the top of the plug-in window) to save and recall your favourite chains. Sessions from every earlier version open with the same modules and the same sound.

SECTION 34

Factory presets

Open the preset menu at the top of the plug-in window in your recording app. Each preset is a complete chain: it sets the module in every slot and every control except the quality switch. Default returns to the standard rack. Set the level going in first, then adjust by ear.

Preset	Chain, left to right
Lead Vocal	Pre (Tube) Equaliser De-Esser FET 76 Leveling Air EQ Air Space
Podcast Voice	Pre Gate (Expand) Equaliser De-Esser VCA Comp Leveling (Limit)
Bass DI	Pre (Tube, Grit 50%) FET 76 Leveling Equaliser Tape (15 ips) Width (Mono Bass 120 Hz)
Kick and Snare	Gate Transient (more attack, less sustain) Equaliser VCA Comp (Thrust)
Drum Room Crush	Pre (Tape) FET 76 (ALL, MIX 50%) Recovery (+40%) Program EQ
Overheads	Pre (HPF 150 Hz) Equaliser De-Esser (Wide, cymbal splash) VCA Comp Width
Acoustic Guitar	Phase (line up two mics) Pre (Tape) Equaliser Leveling Air Space
Electric Guitar	Pre (Transistor) Equaliser (LPF 8 kHz) Leveling FET 76 (Slow attack)
Piano	Pre (Tube) Equaliser Leveling Tape (30 ips) Air Space
Lo-Fi Tape Vocal	Pre (Tape, Grit 65%) Graphic EQ (telephone curve) FET 76 Tape (7.5 ips, wow)
Mix Bus	VCA Comp (2:1, Thrust) Program EQ (low and high lift) Tape (30 ips) Width (Mono Bass 100 Hz)

TRY A CM

The presets use the original modules, so they stay light on CPU. To hear the hardware's behaviour, swap a compressor or EQ for its CM: settings don't carry across, so set the CM by ear.

SECTION 35

Tips and troubleshooting

Problem	What to do
The level jumps when I turn up Gain or a compressor	That's the module working. Bring the level back with that module's Trim or Output, or with the Output fader.
A short dip when I change a slot's module	Normal: Lunchbox fades out and in over about 25 ms so the change never clicks.
Automation on a slot has no effect	That automation belongs to a different module type. Select that module in the slot.
The De-Esser isn't doing anything	Check that IN is lit and lower Thresh. Use LISTEN to make sure Freq is on the sibilance.
The gate chatters	Raise Hold, use the Key HPF/LPF to focus it, or switch to Expand. Gate CM can chatter on low notes near the threshold, as the console does: raise its Threshold a little or use Expand.
FET 76 CM's Input works backwards	It's numbered like the hardware, in dB of loss: turning it clockwise still gives more compression.
Many instances use a lot of CPU	The CM modules are the heavy ones. Use the original module of the same kind where you don't need the hardware's behaviour, raise your host's buffer size, or bounce finished tracks.
A slot suddenly passes the dry sound	Lunchbox's safety net reset a module after an invalid sample. Play on; it recovers by itself.
I hear a delay while recording	Turn on LOW LATENCY, or use your host's low-latency monitoring mode.

SECTION 36

Specifications

Item	Value
Formats	Audio Unit (AU) and VST3 effect; universal binary (Apple silicon and Intel)
Channels	Mono, mono to stereo, or stereo (stereo is processed with linked detection in the dynamics modules)
Sample rates	44.1 kHz to 192 kHz
Processing	64-bit floating point; the chain runs at 4x oversampling (8x in HQ); CM circuits at about 96 to 192 kHz
Latency	About 8 ms, fixed (390 samples at 48 kHz), reported to the host; about 0.1 ms with LOW LATENCY
Slots	Eight, each assignable to any of twenty-five modules, with a MIX knob
Modules	Pre, Phase, Gate, Gate CM, Equaliser, Equaliser CM, Graphic EQ, Program EQ, Air EQ, De-Esser, Leveling, Leveling CM, Tube Opto CM, FET 76, FET 76 CM, VCA Comp, VCA CM, Bus Comp-N CM, Bus Comp-S CM, Transient, Recovery, Tape, Sonic, Width, Air Space
Output	-48 to +12 dB
Presets	Default plus eleven factory presets
Requirements	macOS 11 or later; a 64-bit AU or VST3 host

SECTION 37

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