VINTAGE CHANNEL STRIP

Kohaku

琥珀

琥珀 amber

Kohaku is a stereo channel strip after the channel of a late-seventies rack mixer: a preamp that sings as it is pushed, a gentle two-band tone stage, and a pair of VU meters.



琥珀

CONTENTS

Kohaku, from the first sound to the last setting.

壱	Welcome	03
弐	The panel	04
参	Input and preamp	06
肆	Tone, mix and output	07
伍	The meters and the display	08
陸	Your controller	10
漆	Factory programs	12
捌	Programs and your presets	13
玖	Installing and unlocking	14
拾	Technical	17
拾壱	Notices	18

The level holds. Only the colour changes.

This manual walks round the panel, then through the input and preamp, the tone stage and the output, and the meters and display. The last pages cover presets, installing and unlocking.

壱 KOHAKU

Welcome

Kohaku is a stereo channel strip after the channel of an old rack mixer: a preamp that sings as it is pushed, a gentle two-band tone stage, and a pair of VU meters.

The sound goes through the strip in the mixer's order. An input switch and the **Drive** set how hard the preamp is pushed; the preamp leans into its rails softly and a little unevenly, adding even harmonics and a touch of sag. **Color** chooses which end of the spectrum meets the clip first. Then come broad bass and treble shelves, a gentle low cut, a mix with the dry sound, and the output.

As you drive it, Kohaku holds the level where it was, so what you hear is what the preamp does to the sound, not simply that it became louder. The display shows where your signal sits on the preamp's curve, the harmonics it adds there, and the shape of the tone.

Five minutes with Kohaku

1. Put Kohaku on a track or a bus. It opens on Clean Channel: the quietest input, a little drive, the tone flat.
2. Play the track at its usual level. If the needles sit well below 0 VU or hard against the right, set **0 VU at**, under the meters, to the level you work at.
3. Turn **Drive** up slowly. Watch the drive pane go from Clean to Warming to Into the rail, and the harmonics grow. The level stays where it was.
4. For more, choose the **−35 dB** or **−50 dB** input: each asks the preamp for 12 dB more.
5. Turn **Color** down for a darker, rounder push, or up for a brighter edge. Then shape the result with **Bass** and **Treble**.
6. For drive under the dry sound, bring **Mix** down. The two stay perfectly in time.

> COMPARE
>
> Switch your host's bypass on and off to compare. The factory programs are matched in loudness to the dry sound, so what changes is the colour, not the level.

The panel



Kohaku on Mic Pre Overdrive, pushed into the rail: the shaded reach on the drive curve, and the harmonics it adds.

1	**Program**	The program's number and name. Click the name for the program menu; the arrows at the window's ends step through the sounds.
2	**Size and key**	The window's size, and below it the licence key.
3	**Output meters** Left and right	Two VU meters reading what Kohaku sends out, each with a lamp that lights near full scale.
4	**0 VU at** −12, −14, −18 or −20 dBFS	The level the meters read as 0 VU.
5	**The strip**	The preamp's curve with your signal on it, the harmonics the strip adds, and the tone stage's curve.
6	**Input** −20 dB, −35 dB, −50 dB	The mixer's input switch: the source the channel is set for. Each step asks the preamp for 12 dB more.
7	**Drive** 0 to 100	Trims the gain into the preamp, from 12 dB less to 18 dB more.

8	**Color** 0 to 100, 50 flat	Which end of the spectrum meets the clip first: the bass, or the treble.
9	**Bass** ±15 dB	A broad shelf turning over near 300 Hz.
10	**Treble** ±15 dB	A broad shelf turning over near 1.6 kHz.
11	**Low cut** On or off	A gentle cut below 80 Hz.
12	**Mix** 0 to 100 %	The dry sound to the strip. Kohaku starts at 100 %.
13	**Output** −24 dB to +12 dB	The level of everything Kohaku sends out.
14	**HQ 8x** On or off	Runs the preamp and the tone stage's rails at eight times the sample rate instead of four.

KNOBS

Double-click any knob to return it to where Kohaku starts. Drag up and down, or side to side, to turn it.

Input and preamp

The input switch

On the mixer, the input switch tells the channel what it is plugged into: a line source, something quieter, or a microphone. The quieter the source it expects, the more gain the preamp gives. Kohaku keeps the three settings, and steps them by 12 dB so the top one stays usable on a track.

INPUT	WHAT IT IS FOR
−20 DB	A line source. No extra gain: the clean end of the strip. Kohaku starts here.
−35 DB	12 dB more gain. A track pushed into the preamp: warmth turning to crunch.
−50 DB	24 dB more: the microphone input. A line source here is properly overdriven.

Drive

Drive trims the gain around the switch, from 12 dB less at 0 to 18 dB more at 100. It starts at 35. Together, the switch and Drive set the preamp's gain, from −12 dB to +42 dB, and the drive pane of the display shows the total. At the −20 dB input with Drive at 40, a full-scale signal just meets the preamp's rail.

The preamp is an op-amp running into its supply rails. It does so softly and a little unevenly: its balance leans further as the level rises, so it adds even harmonics, and the loudest moments sag a little. Below the rail it is nearly clean; as the signal reaches the rail the curve rounds the peaks; well past it the sound thickens and compresses.

The level holds

Kohaku takes back what the preamp adds. Up to about 16 dB of gain it turns the level down by exactly as much as the preamp turned it up. Beyond that, a track at a working level, around −18 dBFS, keeps its loudness as it is driven into the rail; quieter material comes up as the drive rises, as it does through a hard-driven preamp. Either way, Drive changes the colour far more than the loudness.

Color

Color tilts the sound around 1.2 kHz on its way into the clip, and takes most of the tilt back out afterwards. Towards 0 the bass reaches the rail first: a darker, rounder, heavier push. Towards 100 the treble does: a brighter edge that bites. At 50 the clip treats the whole spectrum alike. What changes is mostly the character of the drive; a slight tilt in the balance stays at either end. Color matters most when the preamp is working: on a clean channel it does little.

Tone, mix and output

Bass and Treble

The tone stage is a pair of broad, gentle shelves, in the manner of a classic tone control. **Bass** lifts or cuts everything below about 300 Hz, and **Treble** everything above about 1.6 kHz, each by up to 15 dB. Each shelf is half way to its setting at its turnover, so the change spreads across the spectrum rather than starting at a corner: a little Treble opens a whole sound, not just its top octave. Both start at 0 dB, and changes glide smoothly while the sound plays.

The tone stage has rails of its own, 6 dB above full scale. Only big boosts on loud material reach them, where they round the result a little more.

Low cut

Low cut is the master section's filter: a gentle slope of 6 dB per octave below 80 Hz. It clears rumble and low build-up without thinning a sound. It comes after the tone stage, so it also tames a big Bass boost at the very bottom.

Mix and Output

Mix blends the dry sound with the strip, from all dry at 0 % to all strip at 100 %, where Kohaku starts. The dry sound is the input as it arrived, held back by exactly the strip's delay, so the two stay in time and nothing smears: turn the drive hard up and Mix down for grit under a clean attack. **Output** sets the level of everything Kohaku sends out, from −24 dB to +12 dB, and the meters read after it.

HQ 8x

The preamp and the tone stage's rails run at four times the sample rate, so the drive stays smooth at the top of the spectrum. **HQ 8x** runs them at eight times, for the cleanest drive at a little more processor.

In your host

Kohaku delays its output by 84 samples, 1.75 ms at 48 kHz, the same with HQ on or off. It tells your host, which keeps it in time with your other tracks. It works in mono, mono in and stereo out, or stereo; a mono input feeds both sides. It has no bypass switch of its own: use your host's, which passes the dry sound in time. Every control can be automated, including the input switch and the meters' calibration, and each can be learned from a knob or fader on your MIDI controller: see Your controller.

The meters and the display



Kohaku on Clean Channel: the signal well inside the curve, and barely a harmonic.

The output meters

Two VU meters, left and right, read what Kohaku sends out, after Mix and Output. Their needles move as a VU's do, taking about 300 ms to settle, so they show loudness rather than peaks. The scale runs from −20 to +3, red past 0. The lamp at each meter's corner lights when the level nears full scale.

0 VU at sets where the needle reads 0: a sine at −12, −14, −18 or −20 dBFS. It starts at −18 dBFS. Set it to the level you mix at, and the needles sit around 0 when a track is where it should be. It is part of the project, not the sound: programs and presets leave it as it is.

Drive

The left pane of the display is the preamp. Its heading shows the gain the input switch and Drive set together. The curve is the preamp's: what goes in, across, against what comes out, up. The dashed lines mark the rails. While sound plays, the shaded band shows how far your signal reaches along the curve, with a lamp at each end, and the curve leans as the preamp is pushed harder. Below the curve, a word says how hard it is working: Clean, Warming, or, in red, Into the rail.

Harmonics

The middle pane shows the harmonics the strip adds, from the 2nd to the 8th, against the note itself: 0 dB at the top, −80 dB at the floor. The even harmonics, the warm ones, are in brass; the odd ones, which bring the edge, are in cream. The total is given underneath as a percentage. While sound plays it is measured at your signal's level, and reads Live; at rest it is measured at 0 VU, and reads At 0 VU. The measurement includes the tone stage and the low cut, but not Mix or Output.

Tone

The right pane draws the tone stage and the low cut: their effect on the level from 20 Hz to 20 kHz, ±15 dB. The dashed lines mark the two turnovers, 300 Hz and 1.6 kHz. With Low cut on, the pane says so.

Your controller

MIDI learn

The knobs, keys and menus on Kohaku's panel can be moved by a knob or fader on your MIDI controller. Right-click it (Control-click on a Mac), choose Learn MIDI control, and move the hardware. While Kohaku waits, a thin outline breathes round the control (on a knob, its value reads MOVE A CONTROL); once learned, the controller's number shows there for a moment.

Learn MIDI control	Waits for the next controller (CC) to arrive, on any channel. While it waits, the menu reads Waiting for a MIDI control… (click to stop).
Forget CC 74	Shown when the control has one: lets that controller go.
Knob	Shown when the control has one: what kind of knob it is, as learning found it (ticked). Choose another if it guessed wrong: Ordinary knob, or one of three kinds of Endless knob.
Use these for every new Kohaku	Keeps the controllers learned now as the starting set for every Kohaku you add from now on. Projects keep their own. Choose it with none learned to start new ones with none again.
Forget every MIDI control	Lets every learned controller go, on every control.

A controller moves one control, and a control answers one controller: learning a controller already in use moves it to the new control. Its whole travel, 0 to 127, sweeps the control's whole travel, as the mouse does; a switch turns on from the middle up, and a choice steps evenly through its choices. The moves reach your host as the mouse's do, so it writes them as automation and undo takes them back.

Controls never jump. An ordinary knob sends where it is, so when it and the control disagree (a project just opened, a new program, the mouse moved the control) the control waits until the knob reaches it, then follows; meanwhile its value reads TURN UP or TURN DOWN, with a steady outline round it. An endless knob, one that turns round and round, sends only a little up or a little down, so the control moves on from wherever it is. Learning tells the two apart from the first few turns, so turn the knob a little way after it is learned before you judge it.

The controllers learned are kept with the project; a project saved before Kohaku had MIDI learn opens with none. Notes, pitch bend, aftertouch, bank select and the like are never learned.

The starting set is a small file, `%APPDATA%\Denki Digital\Kohaku\midi-map.json` on Windows and `~/Library/Application Support/Denki Digital/Kohaku/midi-map.json` on a Mac.

Every knob and key, and the meters' **0 VU at** menu, can learn a controller. The needles and the display are only for reading.

Kohaku is an effect, so your controller has to be sent to it. In Live, add a MIDI track, set its MIDI To to Kohaku's track and choose Kohaku in the menu below it, then arm the MIDI track or set it to monitor. In the standalone, choose Options, then Audio/MIDI Settings..., and tick your controller among the MIDI inputs. Kohaku only reads the MIDI it is sent: notes pass by unheard, and the strip sounds the same with MIDI as without.

In Logic Pro, Kohaku's Audio Unit is the audio effect it has always been and takes no MIDI, so it has no Learn MIDI control there: move its controls with Logic's own controller assignments instead (choose a control, then Learn in Logic's Controller Assignments).

> HOSTS
>
> A knob your host has kept for itself (Live's MIDI Map) stays your host's: free it there, or learn another.

Factory programs

Eleven starting points, from a clean channel to a small radio. Each is matched in loudness to the dry sound on a mix, so switching between them compares colour, not level.

01 Clean Channel
The channel as it comes: the −20 dB input, Drive at 35, the tone flat. A touch of the preamp and nothing more.

02 Warm Glue
A little more drive and a little lift at both ends, for a mix or a bus: the rail rounding the peaks.

03 Vocal Presence
Treble up, a little Bass out, Low cut on, and a slightly bright push: a voice brought forward.

04 Bass Weight
Bass up 5 dB, the top eased, and a darker push: weight under a bass.

05 Drum Bus Crunch
The −35 dB input, both ends lifted a little: bite and a thicker body on drums.

06 Mic Pre Overdrive
The −50 dB input with a line source: the preamp properly overdriven.

07 Parallel Grit
The −50 dB input driven hard and bright, at 35 % Mix: grit under the dry sound, the attack untouched.

08 Small Radio
Bass down 12 dB, Treble down 8, Low cut on, a bright push from the −35 dB input: small, boxy and far away.

09 Round & Dark
Treble down 6 dB, a little more Bass, and the darkest push: rounded edges.

10 Open Top
A clean channel with Treble up 6 dB and Low cut on: air on top.

11 Init
Kohaku as it starts: the same as Clean Channel.

Programs leave **HQ 8x** and **0 VU at** as you set them.

Ways to use it

MIX BUS	Warm Glue, with Drive turned back if the mix starts to lean.
DRUMS	Drum Bus Crunch on the bus; Parallel Grit for weight under a clean attack.
BASS	Bass Weight, or the −35 dB input with Color down for a rounder growl.
VOCALS	Vocal Presence; Mic Pre Overdrive with Mix at half for an edge that stays intelligible.
SOUND DESIGN	Small Radio for a distant voice or a sample in another room; Round & Dark to take the sting out of a harsh synth.

Programs and your presets

Kohaku keeps two kinds of sound: the factory programs it ships with, which never change, and your own presets, which are plain text files you can keep, copy and share.

Click the program's name, at the top of the panel, to open the program menu. The arrows at the window's ends step through every sound in turn. The number reads USR for one of your own, and a * after the name means the sound has changed since it was loaded or saved.

The program menu

Factory programs	In the Factory submenu. Choosing one replaces the current sound; your changes are kept with the project until you choose another.
User	Your own presets, grouped by the category you gave them.
Designer	Banks of presets from other sound designers, if you have added any. They load like your own, but can't be overwritten: save a changed one under a new name.
Save	Saves the current sound over your own preset of the same name. Only offered while one of your own is loaded.
Save As...	Saves the current sound as a new preset, with a name, a category and an author.
Rename...	Renames your own preset, and its file with it.
Delete...	Deletes your own preset. Its file goes, so this can't be undone.
Import Preset...	Adds a preset file someone has sent you to your own.
Export Preset...	Saves a copy of your own preset wherever you choose, ready to send.
Open Preset Folder	Shows the folder in File Explorer, or in the Finder on a Mac.

Where they live

Your presets are in `Documents/Denki Digital/Kohaku/Presets`, one `.txt` file each, in your Documents folder on Windows and on a Mac alike. Designer banks go beside them, in `Documents/Denki Digital/Kohaku/Banks`, one folder per bank. The files are readable text, so a preset can be sent in an email as easily as attached. Back the folder up with your music.

Your host saves the whole sound with every project as well, so a project always opens as you left it, whether or not the preset is still in the folder.

Installing and unlocking

Installing on Windows

1. **Close your music software.** Windows can't replace a plugin that is in use.
2. Run `Kohaku-1.0.0-Windows.exe`. Windows asks whether to allow it to make changes; the publisher should read Denki Digital Limited. If it says Unknown publisher, don't run it, and write to **hello@denkidigital.com**.
3. **If Windows shows "Windows protected your PC",** choose More info, check the publisher, then Run anyway. Windows says this about new releases while it learns to recognise them.
4. **Choose what to install.** The VST3 plugin always installs; the standalone application is ticked too.
5. **Open your music software.** Kohaku is under Denki Digital, listed as Kohaku Strip. If it isn't there, ask your host to rescan its plugins.

PLUGIN	`C:\Program Files\Common Files\VST3\Kohaku.vst3`
STANDALONE	`C:\Program Files\Denki Digital\Kohaku`, and in the Start menu under Denki Digital
THIS MANUAL	`Kohaku Manual.pdf` beside the standalone, and in the Start menu under Denki Digital Manuals
YOUR PRESETS	`Documents/Denki Digital/Kohaku`
LICENCES	`Documents/Denki Digital/Licences`

Installing on a Mac

Kohaku runs on macOS 12 or later, Apple silicon or Intel.

1. **Close your music software.**
2. Open `Kohaku-1.0.0-Mac.pkg`. It is signed by Denki Digital Limited and notarised by Apple, so it opens without a warning. If your Mac says it can't check it for malicious software, don't open it, and write to **hello@denkidigital.com**.
3. **Agree to the licence, and choose what to install.** The VST3 plugin, the Audio Unit and the standalone application are all ticked; Customise leaves any out. Your Mac asks for your password, as it does for any plugin installed for everyone on the computer.
4. **Open your music software.** Kohaku is under Denki Digital, listed as Kohaku Strip: Logic Pro and GarageBand find the Audio Unit as they start, and other hosts may need to rescan their plugins.

VST3 PLUGIN	`/Library/Audio/Plug-Ins/VST3/Kohaku.vst3`
AUDIO UNIT	`/Library/Audio/Plug-Ins/Components/Kohaku.component`
STANDALONE	`/Applications/Denki Digital/Kohaku/Kohaku.app`
THIS MANUAL	`Kohaku Manual.pdf` beside the standalone, whichever parts you install, and on www.denkidigital.com, from Kohaku's page
YOUR PRESETS	`Documents/Denki Digital/Kohaku`
LICENCES	`Documents/Denki Digital/Licences`

Unlocking

Your licence comes with your order, in the email and on the order page: a few lines of text that begin Denki Digital licence and end with a signature. It carries your name, and nothing in it needs the internet: no account and no activation, now or later.

1. **Copy all of it,** from Denki Digital licence to the end of the signature line. Then click the small key under the window-size control, at the right-hand end of the nameboard and choose Paste licence from the clipboard.
2. **Or keep it as a file:** paste it into a plain text file (ending `.txt` or `.denkilicence`) and drop that onto the panel, or choose Load licence file... from the same key.
3. **That's all.** The key's menu now reads Licensed to your name, and every instrument the licence covers unlocks at once, in every open project.

Before it is unlocked, Kohaku works fully, with no time limit, and rests for two seconds once a minute: the sound fades out and back. A small Demo notice on the panel says so, with Buy and Load licence; its cross closes it until the panel is next opened. The key's menu also shows the licences folder, and the notices for the fonts and code inside.

The window

The window-size control, the square of corner marks at the right-hand end of the nameboard, sets the window's size, from 60 % to 160 % of its natural size, with Fit to screen for the largest that fits. You can also drag the window's corner. The size is kept with your project, and the window never opens bigger than the screen it is on. In the standalone application, Full screen in the same menu, or the F11 key (Control-Cmd-F on a Mac), fills the whole screen with the panel; the same key or Esc brings the window back.

On a Mac: where this manual says Ctrl, press Cmd; where it says Alt, press Option; and a right-click is a Control-click, or a two-finger click on a trackpad.

Ableton Live on Windows: if the window looks soft, right-click the title of Kohaku's device in Live's Device View, untick Auto-Scale Plug-In Window, then open the window again. Kohaku scales itself to your screen and stays sharp at any size; Live's auto-scaling stretches a smaller picture instead.

Updating and moving

Run a newer installer over the old one; your presets, licence and projects are left as they are. On a new computer, Windows or Mac, install, then copy `Documents/Denki Digital` across: your licences and presets come with it. To uninstall on Windows, open Windows Settings, then Apps, then Installed apps, and choose Kohaku. On a Mac, drag the plugin files and the standalone's folder, where the table above shows them, to the Bin. Either way, your files in Documents stay where they are.

The full guide, with each host's rescan menu, is at **www.denkidigital.com/support/install**.

Technical

TYPE	Stereo channel strip
INPUT	−20, −35 and −50 dB ranges; Drive trims −12 to +18 dB
TONE	Bass ±15 dB (near 300 Hz), Treble ±15 dB (near 1.6 kHz), Low Cut at 80 Hz
OUTPUT	Mix, Output (−24 to +12 dB)
METERING	Stereo VU, 300 ms; 0 VU at −12, −14, −18 or −20 dBFS
OVERSAMPLING	4x, or 8x in HQ
FACTORY PROGRAMS	11, matched in loudness to the input, plus a library for your own
LATENCY	84 samples (1.75 ms at 48 kHz)
CPU	1.5% of one core, 2.6% in HQ (stereo, 48 kHz)
CHANNELS	Mono, mono to stereo, stereo
MIDI	Controllers (CC) on any channel, for MIDI learn on the panel's controls: in the VST3 plugin and the standalone; the Audio Unit takes none
FORMAT	VST3 plugin and standalone application; on a Mac also an Audio Unit
SYSTEM	Windows 10 or 11, 64-bit; or macOS 12 or later, Apple silicon or Intel
VERSION	1.0.0

Notices

Kohaku is © 2026 Denki Digital Limited. Its sounds, programs, panel and this manual are the studio's own.

Using Kohaku is governed by Denki Digital's end-user licence agreement, which the installer shows before it installs, and which is at **www.denkidigital.com/licence**. In short: use it on any of your own computers, for any music; what you make with it is yours; keep your licence file to yourself; every update is free.

Its panel is set in Rajdhani and Inter, both under the SIL Open Font License 1.1, and it carries code from the open-source projects listed in its notices: choose Third-party notices… from the key's menu, or open `THIRD-PARTY-NOTICES.txt` in the `Licences` folder beside the standalone.

VST is a trademark of Steinberg Media Technologies GmbH, registered in Europe and other countries. Windows is a trademark of the Microsoft group of companies. Apple, Mac, macOS, Finder, Logic Pro, MainStage and GarageBand are trademarks of Apple Inc., registered in the U.S. and other countries. Other names of music software in this manual belong to their owners and are used only to say what Kohaku works with.

琥珀

電 DENKI DIGITAL

Inspired by Tokyo. Built in Aberdeen.

東京に着想を得て、アバディーンで作る。

www.denkidigital.com · hello@denkidigital.com
Denki Digital Limited, registered in England and Wales, number 17280402
167–169 Great Portland Street, London W1W 5PF
© 2026 Denki Digital Limited. Kohaku 1.0.0.