PORTASOLO

4-track cassette channel · by Pointless Audio



WHAT IT DOES

PortaSolo is one channel of a 1987 four-track cassette recorder: its mixer, modeled stage by stage from measurements of a real unit, and its tape, set once and left alone.

The mixer is the same one inside PortaTwin: the input stage with its TRIM, the channel fader, a gain stage that carries the EQ, and the output amplifier, each with its own measured clipping. Switch TAPE to REC and the signal goes through a cassette at the slow speed, lightly driven and slightly worn: softer transients, a rounder top, a little movement. There are no tape controls. The tape is the way we liked it, and that's the point of PortaSolo: plug it in, set the level, play.

PortaSolo is free. The full machine, with every tape control, the noise reduction and GHOST, is PortaTwin.

FORMAT	VST3 · AU · CLAP · AAX (macOS Universal Binary) · VST3 · CLAP · AAX (Windows x64)
OS	macOS 10.13+ · Apple Silicon + Intel · Windows (64-bit)
PARAMS	8 automatable parameters
LATENCY	None reported to the host (0 samples); the processing delay is a few samples, see Sample-accurate alignment
PRICE	Free

THE FOUR-TRACK LEGACY

> Introduced in 1979, the Portastudio put a recording studio in a bedroom. By 1987, with the Tascam Porta Two, recording at home on a four-track cassette was normal, and a decade of records that were never supposed to be released came out of machines like it.
>
> PortaSolo takes one channel of that 1987 four-track: its mixer, measured on a real unit, and its tape at fixed settings. PortaTwin is the whole machine.

PARAMETERS

PortaSolo has eight controls. All of them are automatable. The panel labels a few of them the way the original deck did: TRIM is INPUT, DRIVE TYPE is CLEAN / HOT, the TAPE switch (STOP / REC) is TAPE IN, and the POWER knob is the bypass. The names the host shows are listed under Parameter names in the host.

PREAMP

PARAMETER	RANGE	DEFAULT	WHAT IT DOES
INPUT	0–1	0.5	Left half: attenuator. Right half: the TRIM, from line level at the center to +40.1 dB
EQ LOW	0–1	0.5	Boost or cut at 100 Hz, −9.1 to +9.5 dB
EQ HIGH	0–1	0.5	Boost or cut at 10 kHz, −10.7 to +10.2 dB
CLEAN / HOT	toggle	CLEAN	Channel fader at its reference mark (CLEAN) or all the way up (HOT)
AUTO GAIN	toggle	off	Evens out the level changes from INPUT, DRIVE TYPE and the tape (not the EQ)

INPUT — the left half turns the signal down, from 0 dB at the center to silence at the bottom. The right half is the four-track's TRIM: line level at the center, +40.1 dB at full. It follows the law measured on the real pot, with most of its gain in the upper half of its travel: about +13 dB with INPUT at three-quarters, about +32 dB at seven-eighths. Push it and the input stage clips, one side slightly before the other, as the real one does. The readout shows the gain in dB.

LOW / HIGH — the four-track's EQ, built into the gain stage after the fader. LOW sets the gain at 100 Hz, from −9.1 to +9.5 dB; HIGH at 10 kHz, from −10.7 to +10.2 dB. Because the EQ is part of an amplifier stage, a boosted band is the first to hit that stage's limit, and HOT pushes the stage 9.4 dB harder.

CLEAN / HOT — the channel fader. CLEAN leaves it at its reference mark. HOT pushes it all the way up: everything between the fader and the master — the gain stage with the EQ, and the tape — runs 9.4 dB hotter, and the master comes down 9.4 dB to compensate. A quiet signal comes out at the same level in both modes; a loud one distorts more in HOT. INPUT stays where it is when you switch.

AUTO GAIN — evens out the loudness changes that INPUT, DRIVE TYPE and the tape introduce, so automating or A/B-ing stays level-matched. It does not follow the EQ: lifting EQ LOW or EQ HIGH makes the output louder on material that sits in that band, as any EQ boost does. It's calibrated around a full-range signal at about −18 dBFS. Feed it something much quieter and the compensation drifts, because it reads the position of the controls rather than your input level; if your source is well below it, raise INPUT first.

TAPE

PARAMETER	RANGE	DEFAULT	WHAT IT DOES
STOP / REC	toggle	REC	Sends the signal through the tape (REC) or past it (STOP)

STOP / REC — on REC the signal goes through a cassette with fixed settings: 1⅞ ips, Type II (chrome) tape, DRIVE at 30 % (PortaTwin's nominal level sits at 50 %), FLUTTER at 5 % and AGE at 15 %: a light touch of wobble and a lightly worn tape. You hear it as softer transients, a slightly rounder top and a gentle movement on held notes, not as an effect. On STOP you get the mixer alone. The tape settings can't be changed, and BIAS stays at its nominal center (50 %): in PortaTwin each of them is a control of its own.

OUTPUT

PARAMETER	RANGE	DEFAULT	WHAT IT DOES
OUTPUT	0–1	0.735	Master fader — +0.4 dB at the default, +6 dB at full
POWER	toggle	on	Full bypass

OUTPUT — the four-track's master fader, in front of its output amplifier. It reads 0 dB at about 70 % of the way up, with 6 dB more above it and a mute at the very bottom. The default sits just above, at +0.4 dB: with TAPE on REC, that brings PortaSolo out at the same loudness as the bypassed signal. Above unity it pushes the output amplifier towards its own clipping: at +6 dB the clipping starts 6 dB sooner.

POWER — the knob in the top right corner. Off is a full bypass; the red light shows when PortaSolo is on.

Mixer hiss — the mixer has its own hiss, measured on the original unit and always on: about −92 dBFS A-weighted (−90 dBFS RMS from 177 Hz to 22 kHz) at the default settings. It enters before OUTPUT, so it follows that fader, and it sits about 9 dB lower with DRIVE TYPE on HOT, where the master runs lower. The fixed tape adds no audible hiss of its own on top of it.

PARAMETER NAMES IN THE HOST

HOST NAME	PANEL LABEL	READOUT
Input Gain	TRIM	−inf dB to 0.0 dB (left half), 0.0 to +40.1 dB (right half)
EQ Low	EQ LOW	−9.1 to +9.5 dB
EQ High	EQ HIGH	−10.7 to +10.2 dB
Gain Mode	DRIVE TYPE	CLEAN / HOT
Auto Gain	AUTO GAIN	On / Off
Tape In	STOP / REC	On / Off
Output Level	OUTPUT fader	−inf dB to +6.0 dB (+0.4 dB at the default)
Bypass	POWER	On = bypassed

FACTORY PRESETS

All factory presets are level-matched to the bypassed signal on full-range material (pink noise at −18 dBFS RMS). Fader Heat, with LOW up 2.5 dB, plays louder on bass-heavy material, as any low boost does.

#	PRESET	SETTINGS	CHARACTER
1	Init	TRIM at line level, EQ flat, CLEAN, AUTO GAIN off, TAPE on REC	The default: one channel and its tape
2	Trim Crunch	TRIM at +24 dB, CLEAN, AUTO GAIN on, TAPE on REC	Into the input stage's clipping
3	Fader Heat	HOT, EQ LOW +2.5 dB, AUTO GAIN on, TAPE on REC	The low end saturates first
4	Desk Only	TRIM at line level, CLEAN, EQ HIGH +0.9 dB, TAPE on STOP	The mixer alone, a touch brighter

User presets are saved as portable `.papreset` files (shareable between machines and projects) in their own PortaSolo folder, separate from PortaTwin's. Browse them from the preset name in the bottom strip. **A/B comparison**: click A/B to flip between two sets of settings — the one you leave is kept, so you can tweak B and jump back to A.

MOVING TO PORTATWIN

PortaSolo and PortaTwin install side by side and don't replace each other: a project made with PortaSolo opens with PortaSolo. To take a sound across, save it as a user preset in PortaSolo and copy the `.papreset` file from `~/Library/Pointless Audio/PortaSolo/Presets/` to `~/Library/Pointless Audio/PortaTwin/Presets/` (on Windows, the same folders under `%APPDATA%\Pointless Audio\`). PortaTwin lists it with its own presets: the mixer settings come across as they are, and the tape starts from PortaSolo's fixed settings, which you can then change.

HOW IT WORKS

You don't need any of this to use PortaSolo — but if you're curious what's happening to your signal:

The mixer is the four-track's channel and master, modeled stage by stage from measurements of a real unit: the input stage with its TRIM, the channel fader, a gain stage that carries the EQ, then the master fader and the output amplifier. Each amplifier stage has its own clipping curve, measured on the real unit, with different limits on the positive and negative side. The coupling capacitors of the circuit are in the model too: with the tape on STOP, the mixer is flat within 0.2 dB from 1 kHz to 18 kHz and about 1 dB down at 40 Hz.

The tape is PortaTwin's tape model, the same code, with its controls fixed: how tape soft-limits when you hit it, how the top rolls off at the slow speed, and the small wobble of the transport.

Nothing in the signal path hits a hard digital ceiling — it saturates and rounds over instead, so overdriving it stays musical.

INSTALLATION

MACOS

Double-click the `.pkg` installer in the download and follow it — the Customize step lets you pick VST3, AU, CLAP and AAX (for Pro Tools). Formats install system-wide to `/Library/Audio/Plug-Ins/VST3/`, `Components/` and `CLAP/`, and the AAX to `/Library/Application Support/Avid/Audio/Plug-Ins/`. Restart your DAW.

> **Note:** The installer is signed with an Apple Developer ID and notarized by Apple — macOS opens it directly, with no security warnings.

WINDOWS

Copy the `PA PortaSolo.vst3` folder to `C:\Program Files\Common Files\VST3\`, the `PA PortaSolo.clap` file to `C:\Program Files\Common Files\CLAP\` and/or the `PA PortaSolo.aaxplugin` folder to `C:\Program Files\Common Files\Avid\Audio\Plug-Ins\` — or to the custom plugin folders your DAW uses. Restart your DAW.

> **Note:** SmartScreen may warn — click "More info" → "Run anyway". Windows binary is **not Authenticode signed**.

PRO TOOLS (AAX)

The AAX format is a real-time insert, in Pro Tools on macOS and Windows. It has no AudioSuite version.

LINUX (BETA)

The zip with the Linux build holds the VST3 and the CLAP, no installer. Copy `PA PortaSolo.vst3` to `~/.vst3/` and `PA PortaSolo.clap` to `~/.clap/`, then rescan in your DAW. It is a beta: checked with automated tests, not yet in a real DAW.

TROUBLESHOOTING

Plugin doesn't appear in DAW — most DAWs rescan plugins on launch. In Logic Pro: Preferences → Plug-In Manager → Reset & Rescan. In Ableton: Preferences → Plug-Ins → Rescan. In Reaper: Preferences → Plug-ins → VST → Re-scan.

Bottom strip in Logic, GarageBand and MainStage — on macOS Tahoe these hosts lose clicks in a band about 16 points high along the bottom of a plugin window. Since v1.0.2 PortaSolo leaves an empty band there, so in those hosts the strip sits a little higher and S/M/L and A/B respond to every click. Other hosts look exactly as before.

State doesn't persist between sessions — verify your DAW saves plugin state in the project. PortaSolo uses APVTS standard, supported by every modern DAW. POWER is saved too.

Sample-accurate alignment — PortaSolo doesn't report a plugin-delay-compensation value to the host. On STOP the processing delay is about 4 samples. On REC it is about 15 samples (0.3 ms at 48 kHz), moving by about one sample either way with the fixed flutter. On a single track you won't hear it; if you blend PortaSolo with the dry signal on a parallel bus, set TAPE to STOP or nudge the track manually.

Mono track, stereo output — PortaSolo takes a mono or a stereo input and always outputs stereo. With a mono input both output channels carry the signal, also when POWER or your DAW's bypass is off.

CREDITS

- Inspired by a 1987 four-track cassette recorder (see The four-track legacy). The mixer is modeled from measurements of a real unit.
- Brand, name and visual language: Pointless Audio, 2026.
- The license and the third-party notices are in `LICENSE.txt`, in the download.

SUPPORT

Bug reports, questions, feature requests: hello@pointlessaudio.studio

What to include so it gets fixed faster: https://pointlessaudio.studio/support/

Pointless Audio pointlessaudio.studio

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