SPECIMEN

AUDIO DISSECTION UNIT // P036 V0.8.2



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01 THE CONCEPT

Most samplers play a file back. Specimen dissects it. Every sound you load, the **HOST**, is analysed into five related layers. A **lens** picks the region a note reads; the scan modes decide how it moves through it; eleven pages of mutation reshape it; a second file, the **GRAFT**, can be imprinted on it or resampled with it; and the result can be frozen or edited into a new specimen.

STAGE	PURPOSE
HOST / GRAFT	Load, analyse and relink the main and donor specimens.
LAYER / LENS	Choose the excavation character and the region that plays.
SCAN / CUT	Direction, transport behaviour and slicing.
MUTATE	Eleven pages: tissue, reagents, glitches, resampling, time, conversion, dynamics, editing, joining, playing and sync.
FILTER / HALO / ENV	Shape spectrum, space and amplitude.
FREEZE / ED / APPLY	Capture the whole output, or edit the specimen through the lens, and carry on with the result.

SIGNAL FLOW

Each voice reads the specimen through the lens, blends the raw sound with the chosen layer by DEPTH, then applies bit reduction, stretch, the loop crossfade, the resample routing or graft imprint, the reagents and glitches, and the envelope. The voices then pass through FOSSIL, the FILTER, STAIN, HALO, the compressor/expander, the rate converter, emphasis and OUTPUT, and finally a soft limiter.

Specimen is an instrument plug-in with 24 voices: VST3 and CLAP on Windows and Linux, VST3, AU and CLAP on macOS; there is no standalone app. The window is 1160 × 720 by default and resizes from 940 × 600 to 2000 × 1300 from the corner. Its size, MUTATE page, ED mode and keyboard visibility are saved with your project.

02 FIRST SOUND

1. Insert Specimen as an instrument and click `HOST`, or drop a WAV, AIFF or FLAC file anywhere on the window. Analysis runs in the background.
2. Play MIDI notes, the on-screen keyboard, or your computer keyboard (A to L, after clicking the screen). `PLAY` auditions the specimen at ROOT.
3. Drag the lens on the screen to choose a region; drag its edges to resize; scroll to zoom; double-click to reset.
4. Click a layer (BODY, IMPACT, RESIDUE, NEGATIVE, VEINS) and raise DEPTH.
5. Click the LCD to step through the twelve factory **strains**, or press `INCUBATE` for a random one.

> **SOURCE SAFETY**
> Your files are never overwritten. FREEZE writes to Music\Specimen Frozen and edits to Music\Specimen Edits.

INSTALLING

WINDOWS	64-bit. Copy **Specimen.vst3** to **C:\Program Files\Common Files\VST3** and **Specimen.clap** to **C:\Program Files\Common Files\CLAP**.
MACOS	macOS 11 or later. One universal installer (.pkg) for Apple silicon and Intel, signed and notarised. It installs into **/Library/Audio/Plug-Ins**: **VST3**, **Components** (AU) and **CLAP**.
LINUX	64-bit x86. Run **bash install.sh** in the unzipped folder to copy the VST3 to **~/.vst3** and the CLAP to **~/.clap** (no sudo), or copy them by hand. Rescan your host afterwards. Needs glibc 2.30+ (Ubuntu 20.04+, Debian 11+, Fedora 32+ …) and X11 or Xwayland.

03 THE INTERFACE AT A GLANCE



VEINS selected, lens at 18% / 46%, RS:MIX, MUTATE:TISSUE.

1	**FREEZE.** Records the output into a new specimen (section 12).
2	**ED:** the edit operation, one of nine (section 13).
3	**APPLY** performs the edit; **UNDO** steps back through freezes and edits.
4	**LCD.** HOST and GRAFT names and status messages. Click it for STRAINS.
5	**Reader.** The specimen as microfilm, tinted by the layer, with the lens, playhead and slices.
6	**Lens.** The region a note reads. Drag, resize, zoom.
7	**Hint line** with **KEYS:ON / OFF** for the on-screen keyboard.
8	**HOST / GRAFT** loaders.
9	**RS:** resample routing (section 11). **PLAY** auditions.
10	**CUT:** slices and the slice mode (section 7).
11	**INIT / INCUBATE** (section 14).
12	**Layer buttons.**
13	**Scan buttons:** FWD, REV, PEND, TAPE, BIO.
14	**DISSECT:** DEPTH.
15	**LOOP:** caption and the lens sliders START, LENS, MOTION, XFADE.
16	**MUTATE:** caption and its four page slots.
17	**FILTER, HALO and ENV** captions with their sliders (GRAFT sits in the HALO group).
18	**OUTPUT** and **ROOT**.

Captions such as LOOP:, MUTATE:, FILTER:, HALO: and ENV: are buttons: click to step forward, right-click (or shift-click) to step back. A caption lights amber when it is away from its default. Every control has a tooltip.

04 THE FIVE LAYERS

BODY
The smooth instrument mass: sustain and recognisable core.

IMPACT
Transient shards and strike edges.

RESIDUE
Surface dust, air and grain.

NEGATIVE
Body removed: the shadow layer.

VEINS
Hidden resonant traces.

DEPTH sets how far into the chosen layer the specimen is excavated, from the raw sample to the layer alone. On RESIDUE, NEGATIVE and VEINS some of the layer is always present, so DEPTH 0 isn't quite the raw sound there. Clicking a layer button also auditions it.



NEGATIVE // narrow centred lens, CUT 8, FILTER CUTICLE, HALO ORBIT.



BODY // full lens, MUTATE REAGENT, HALO ECHO.

05 THE READER AND THE LENS

The reader shows the specimen as backlit microfilm: the waveform outline tinted by the layer, layer-specific particles (shards for IMPACT, dust for RESIDUE, filaments for VEINS), a frame counter while it sounds, and the playhead beam. Outside the lens is darkened; inside it the waveform is magnified.

GESTURE	EFFECT
Drag inside the lens	Move it.
Drag an edge	Resize from that side (minimum 2%). The grab zone scales with the lens, so a narrow lens can still be moved.
Click outside	Centre the lens there and audition.
Double-click	Start 0, size 100%, audition.
Mouse wheel	Zoom around the lens centre.
Drag the tape marker	In TAPE, seek the shared transport, even when stopped.

LENS SLIDERS AND LOOP

START	Where the lens starts (0–100%).
LENS	How much of the specimen it covers (2–100%).
MOTION	Drifts the lens slowly back and forth. In BIO it sets the scan speed; with SYNC on it reads in bars.
XFADE	Crossfades the end of a looping lens into its start so the loop has no gap. At 0 the loop edges fade instead. Default 30%; projects saved before P033 open at 0 so they sound as they did.
LOOP:	**AUTO** loops when the lens is under full size, **ON** always loops, **OFF** plays once.

06 SCAN: FWD, REV, PEND, TAPE, BIO

FWD	Plays forward through the lens.
REV	Plays backward through the lens.
PEND	Swings forward and back between the lens edges.
TAPE	One shared transport that pauses where it stops. A new note continues from the saved position; releasing pauses it; it wraps at the lens end. PLAY starts and pauses it, and the dashed marker seeks.
BIO	Biopsy: the playhead moves forward while a second scanner sweeps through all five layers. The selected layer is the centre, DEPTH sets how many layers it travels, MOTION the speed. Faint layer bands and a moving cross-section line show it on the screen.



BIO // VEINS centre, DEPTH 80%, MOTION 50%, HALO ECHO.

07 MICROTOME SLICING

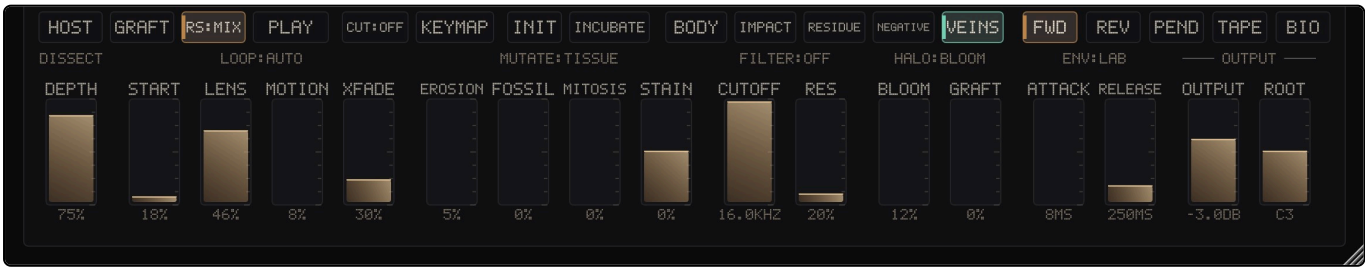
CUT: cuts the lens into OFF, 2, 4, 8, 16 or 32 slices; the cuts show as dashed lines and the last slice played lights up. The slice mode beside it decides which slice a note plays:

KEYMAP	One slice per key, counted from ROOT, played at its own pitch.
CYCLE	Steps to the next slice on each note, pitched.
SCATTER	Picks a slice at random, pitched.

Slices play once and don't loop (TAPE wraps). MOTION moves the sliced region; PEND swings inside the slice.

08 THE SLIDERS

Seventeen vertical sliders in seven groups. Double-click a slider to reset it. Values read out underneath in the plug-in's pixel font (75%, -3.0DB, 16.0KHZ, C3).



GROUP	SLIDERS
DISSECT	DEPTH (default 75%).

LOOP:	START, LENS, MOTION (default 8%), XFADE (default 30%).
MUTATE:	Four slots whose meaning follows the MUTATE page (section 9).
FILTER:	CUTOFF (60 Hz – 16 kHz), RES (default 20%).
HALO:	BLOOM (amount, default 12%) and GRAFT (imprint, or resample depth with RS on).
ENV:	ATTACK (1 ms – 2 s, default 8 ms), RELEASE (5 ms – 5 s, default 250 ms).
OUTPUT	OUTPUT (−24 to +12 dB, default −3 dB) and ROOT (C0 to C6, default C3 = MIDI 60). ROOT is also the audition note and the KEYMAP origin.

09 THE ELEVEN MUTATE PAGES

The **MUTATE:** caption steps through eleven pages that share the four slots: click for the next page, right-click for the previous.

PAGE	CONTROLS
TISSUE	**EROSION** pitch wobble and dusty level loss (default 5%) · **FOSSIL** sample-and-hold blur · **MITOSIS** three detuned, spread voices per note · **STAIN** tone tilt, negative darker, positive brighter.
REAGENT	**NECROSE** darkens and droops in pitch as the note ages · **ANTIGEN** ring modulation at the note's own pitch · **FLINCH** random playhead jumps inside the lens · **VERTIGO** a slow pitch spiral.
GLITCH	**REPEAT** short grains reaching back behind the playhead · **REVERSE** backwards grains · **SKIP** dropouts · **FOLD** wavefolding. With SYNC on, REPEAT and SKIP land on the DIV grid.
RESAMPLE	**DETUNE** ±24 st · **DELAY** 0–2 s · **TONE** (FRG modes) · **RETURN** (the + modes). See section 11.
STRETCH	**STRETCH** 25–400% of the length with the pitch unchanged · **FADE** splice crossfade, 20–2000 samples, or AUTO.
CONVERT	**RATE** 48K to 15K with no reconstruction filter (only below the host rate) · **BITS** 1–15 · **SKIP** every 2–32 addresses · **EMPH** +EMPH / −EMPH fixed shelf. Modelled on classic sampler conversions.
LEVEL	**THRESH** · **RATIO** (1:1 at 100%, below compresses, above expands) · **ATTACK** and **RELEASE** 0–127.
EDIT	**FADE IN** and **FADEOUT**, 0–500 ms, used by APPLY.
JOIN	**G.FROM**, **G.SIZE**, **G.LEVEL** (0–127): the GRAFT region used by INSRT, MIX and COMB.
PLAY	**VOICE** POLY / MONO / LEGATO · **GLIDE** 0–2 s · **VEL>DPT** velocity to DEPTH (±100%) · **VEL>TONE** soft notes darker.
SYNC	**SYNC** OFF / HOST · **DIV** 1/32 to 1/2 (with 1/8D). Locks MOTION to bars, and ECHO and the GLITCH rhythms to DIV, at the host tempo.



MUTATE:CONVERT.



MUTATE:PLAY.

10 FILTER, HALO AND ENVELOPE

CAPTION	MODES
FILTER:	OFF · **PORE** resonant lowpass · **SIEVE** comb · **MEMBRANE** narrow bandpass · **CAVITY** formants (two bands) · **CUTICLE** highpass · **SCAR** notch.
HALO:	**BLOOM** short taps with feedback · **SMEAR** six damped taps · **ECHO** three repeats (DIV length with SYNC) · **ORBIT** cross-stereo · **GLASS** bright modulated taps. BLOOM sets how much.
ENV:	**LAB** straight ramps · **PLUCK** fast attack, decays while held · **SWELL** blooms · **PULSE** repeats while held.

11 GRAFT AND RESAMPLE

Load a second file with **GRAFT** (or drop two files at once: the first becomes the HOST, the second the GRAFT). With **RS:OFF**, the GRAFT slider imprints the donor on the host.

RS: picks one of six two-source routings, in which the GRAFT plays as its own voice, follows the note's pitch, and is set by the RESAMPLE page:

RS:MIX	HOST and GRAFT side by side; GRAFT sets the balance.
RS:STK	Stacked through the filter together.
RS:RNG / RNG+	Ring modulation; the + version returns some of the dry sources (RETURN).
RS:FRG / FRG+	Filtered ring modulation, with TONE on the donor; + adds RETURN.

RS modes need a GRAFT loaded. Swapping the GRAFT doesn't cut playing notes.

12 FREEZE

FREEZE records Specimen's own output, everything included, and loads it as the new HOST. While capturing, the button reads **STOP** and the LCD says FREEZING... CLICK AGAIN TO STOP. Specimen auditions ROOT once so there is something to record, and anything you play is captured too.

It stops after a quarter second of silence, at 20 seconds, or when you click STOP. The result is saved as **Music\Specimen Frozen\<name> frozen.wav** and the lens opens to the whole sample. UNDO goes back to the previous HOST.

13 EDITING: ED, APPLY AND UNDO

Choose an operation with **ED:** (click forward, right-click back), set the region with the lens, set the fades on MUTATE:EDIT, then press **APPLY**. While MUTATE is on EDIT or JOIN, the reader hatches the area the edit will affect and names the operation.



ED:CUT // the hatched lens will be removed and the ends spliced.

OPERATION	WHAT IT DOES
ED:TRUNC	Keeps only the lens, with fades inside it.
ED:CUT	Removes the lens and crossfades the two ends (FADE IN sets the splice).
ED:ERASE	Silences the lens; the fades sit just outside it.
ED:INSRT	Replaces the lens with the GRAFT region (JOIN page). Needs a GRAFT.
ED:MIX	Adds the GRAFT region from the lens start (plus the RESAMPLE DELAY). Needs a GRAFT.
ED:COMB	The HOST up to the lens end, then the GRAFT region, crossfaded by FADEOUT. Needs a GRAFT.
ED:REV	Reverses the lens in place.
ED:NORM	Raises the lens to the sample's peak level.
ED:LOOP	Bakes the lens into a seamless loop using XFADE, then sets LOOP:ON and XFADE 0.

Results are saved in **Music\Specimen Edits** and loaded as the HOST; the file on disk is left alone. **UNDO** keeps up to 32 steps of freezes and edits in memory: each step restores the earlier HOST file and its lens and loop settings. It doesn't undo ordinary knob moves, loads, INIT or strains, and it needs the earlier file to still exist.

14 STRAINS, INIT AND INCUBATE

A **strain** is a preset of every control (the loaded files are kept). Click the LCD to open the strain view: **<PREV** and **NEXT>** load and audition the factory strains, then your own; **SAVE** saves the current settings as a .strain file in **Documents\Specimen Strains**; **BACK** returns. In the strain view, click the strain's name for a list of every strain.

INIT and the factory strains also appear in your DAW's own preset list (VST3 and AU, not CLAP), and picking one there loads it. The last entry, **(Custom sound)**, shows when you are on your own sound (a user strain or INCUBATE); picking it does nothing.



The LCD strain view with BONE DUST loaded.

FACTORY STRAIN	CHARACTER
BONE DUST	RESIDUE dust under a short looping lens, CUTICLE filter, smeared halo.
GHOST CHOIR	NEGATIVE with MITOSIS, a membrane filter and a slow swell.
RUSTED SAMPLER	22 kHz, 10-bit conversion, eroded and stretched.
VEIN PULSE	VEINS pulsing in sync with an eighth-note echo.
RING GRAFT	Filtered ring routing with the GRAFT a fifth up.
HALF SPEED	Stretched to double length, pitch unchanged.
CONVERTER GRIT	15 kHz, 8-bit, address skipping, emphasis and compression.
GLASS ORGAN	A tiny VEINS loop with MITOSIS and GLASS halo.
NECROTIC PAD	Necrosis and vertigo on a drifting RESIDUE pad.
SCATTER KIT	Eight slices scattered, plucked and synced to sixteenths.
LEGATO LEAD	Legato with glide and a resonant lowpass.
BIOPSY DRIFT	BIO scanning through the layers with an orbiting halo.

INIT returns every control to its default and keeps the loaded files. **INCUBATE** grows a random new strain across layer, lens, scan, tissue, reagents, glitches, filter, halo, envelope, slicing, stretch, conversion and level (and a resample routing if a GRAFT is loaded); OUTPUT, ROOT, LOOP, the PLAY and SYNC pages and the edit settings are left alone. Shift-click INCUBATE only drifts the current settings by a little.

15 PLAYING: KEYBOARD, MIDI, SYNC

- **On-screen keyboard**: five octaves, C1 to C6 (MIDI 60 is C3). Show or hide it with KEYS:ON / OFF.
- **Computer keyboard**: click the screen first, then A to L plays white keys from C3, W E T Y U O P the sharps, Z and X shift the octave. Some hosts keep these keys for their own shortcuts.
- **MIDI**: velocity sets level (and VEL>DPT / VEL>TONE); pitch bend ±2 st by default; mod wheel adds vibrato; aftertouch and breath (CC2) push the note deeper into its layer and lift it; CC7 volume, CC11 expression, CC64 sustain; all channels.
- **Voices**: POLY, MONO or LEGATO on MUTATE:PLAY, with GLIDE.
- **Sync**: MUTATE:SYNC set to HOST locks MOTION to bars, BIO to beats, and ECHO, REPEAT and SKIP to DIV, following the song position while the host plays.
- `PLAY` reads PAUSE while sounding; outside TAPE, clicking it silences everything, including held notes and effect tails.

16 FILES AND RELINKING

Specimen loads WAV, AIFF and FLAC. Files longer than 60 seconds are cut to 60 s; mono is copied to both sides; everything is normalised. The project remembers each file's location, size and a fingerprint. If a file has moved, Specimen searches beside the other file, the last folder you used, the old folder's nearest surviving parent, and Music, and finds it by name or by fingerprint (so a renamed file is found too). If nothing matches, the LCD shows Missing: name.

17 PARAMETER REFERENCE

All 64 parameters are automatable. Bend Range and Pressure have no panel control.

HOST NAME	RANGE · DEFAULT	HOST NAME	RANGE · DEFAULT
Layer	Body…Veins · Body	Stretch	25–400% · 100%
Lens Start	0–1 · 0	Stretch Fade	Auto / 20–2000 smp · Auto
Lens Size	0.02–1 · 1	Rate	Off / 48k…15k · Off
Depth	0–1 · 0.75	Bits	Off / 1–15 · Off
Motion	0–1 · 0.08	Skip Address	Off / 2–32 · Off
Erosion	0–1 · 0.05	Emphasis	Off / +Emph / −Emph · Off
Bloom	0–1 · 0.12	Comp Threshold	0–100 · 70
Graft	0–1 · 0	Comp Ratio	0–1000% · 100% (1:1)
Attack	1 ms–2 s · 8 ms	Comp Attack	0–127 · 10
Release	5 ms–5 s · 250 ms	Comp Release	0–127 · 40
Root Note	24–96 · 60	Edit Fade In	0–500 ms · 20
Output	−24…+12 dB · −3	Edit Fade Out	0–500 ms · 20
Scan	Fwd / Rev / Pend / Tape · Fwd	Edit Graft From	0–1 · 0
Tape Play	off / on · off	Edit Graft Size	0–1 · 1
Tape Position	0–1 · 0	Edit Graft Level	0–127 · 127
Mitosis · Fossil	0–1 · 0	Loop	Auto / On / Off · Auto
Stain	−1…+1 · 0	Loop Crossfade	0–1 · 0.3
Slices	Off / 2–32 · Off	Tempo Sync	Off / Host · Off
Slice Mode	Keymap / Cycle / Scatter	Sync Division	1/32…1/2 · 1/8
Filter Mode	Off…Scar · Off	Voice Mode	Poly / Mono / Legato
Cutoff	60–16000 Hz · 16000	Glide	0–2 s · 0
Resonance	0–1 · 0.2	Velocity to Depth	−1…+1 · 0
Halo Mode	Bloom…Glass · Bloom	Velocity to Tone	0–1 · 0
Env Mode	Lab…Pulse · Lab	Biopsy	off / on · off
Necrosis · Antigen	0–1 · 0	Bend Range	0–24 st · 2
Flinch · Vertigo	0–1 · 0	Pressure	0–1 · 0.35
Repeat · Reverse	0–1 · 0	Resample	Off / Mix…FRing+ · Off
Skip · Fold	0–1 · 0	Graft Detune	±24 st · 0
Graft Delay	0–2 s · 0	Graft Tone · Return	0–1 · 1 / 0.5

18 TROUBLESHOOTING

SYMPTOM	TRY THIS
An old project's loop dips	It opened with XFADE 0. Raise XFADE.
RS does nothing	Load a GRAFT, and raise the GRAFT slider.
CONVERT RATE does nothing	It only acts below the host's sample rate.
APPLY is refused	Read the LCD: EDIT NEEDS A GRAFT, EDIT REGION TOO SMALL, WAIT FOR THE FREEZE…
UNDO says MISSING	The earlier file was moved or deleted. UNDO needs it on disk.
The computer keyboard doesn't play	Click the reader screen first. Your host may also be using those keys.

Everything stopped when I clicked PLAY	Outside TAPE, PAUSE silences every voice. Play again.
"REVERSE" means what?	Three things: the REV scan button, the GLITCH REVERSE grains, and the ED:REV edit.