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MUSICAL DESTRUCTION

Tsugime

継ぎ目　the seam

Tsugime breaks sound with the music, not against it. Its wreckage rings at the song's pitches, falls on its grid, and is played with one control that walks a sound from clean to worn, to broken, to remade.



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Tsugime, from the first sound to the last setting.

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A sound goes in. A machine wears it, breaks it and sings it again, in the key and on the grid. The seam between them is yours to move.

Welcome

Tsugime breaks sound with the music, not against it. Its damage rings at the song's pitches, falls on its grid, and is played with one control, the Seam, that walks a sound from clean, to worn, to broken, to remade.

Tsugime means the seam: the line where two things are joined. Here it is the line between a sound and what a machine leaves of it. On one side is the sound as it is: the audio coming in, or the sampler's own sound. On the other is a **Character**: a tape, a photocopier, a dot-matrix printer, a modem, the mains, a motor, a press or a home computer's sound chip. Each wears the sound in its own way, breaks down in its own way, and at the end sings the sound again with a voice of its own: a saw, a choir or the chip.

Most ways of damaging a sound add noise and glitches at random, so they fight the track they are on. Tsugime's damage obeys the music. It is **in key**: a crushed sound folds back onto its own note's harmonics, a repeat short enough to buzz buzzes on a note of the chord, a tape stop lands a fourth, a fifth or an octave down, and twelve tuned strings, **the Ring**, ring with whatever the wreckage leaves, so crackle and dropouts sound as the chord. It is **in time**: a sixteen-step **Damage** sequencer repeats, reverses, stops, crushes, drops, re-pitches and gates the sound on your host's grid, and can follow the kick that Kaminari is playing.

Around it are the parts of a machine that has been used: a cassette or a VHS tape's sound track that wears what the Character plays, a loop that sends it round again a generation at a time, breakdowns, and age. A sampler in an early 16-bit sampler's ways feeds it, and keeps what it makes: crop it, save it, drag it onto a track, or resample Tsugime's own output and break it again. After it all come the spaces of three other Denki Digital instruments: Kodama's drum echo, and Shimo's and Kumo's reverbs. Across the top, a picture shows what you hear, on a worn tape played into a television.

Five minutes with Tsugime

1. Put Tsugime on an audio track with a voice on it: a spoken phrase, a sung line, a breath; or a drum loop. It opens on Init, with the Seam at **CLEAN**: you hear the track as it is. Play it.
2. Click **Tape**, the Character's name under The Character, and choose **Copier**. Drag the **Seam**, the long bar under the picture, slowly to the right. By **WORN** you hear the sound as a copy of a copy: softer, greyer, a little out of register.
3. Carry on to **BROKEN**. The copier fails: its page slips and repeats, and the tape drops out. Now turn up **Ring**, under Key and the Ring: twelve tuned strings ring with what breaks, so it sounds as the key's chord, and HEARING names its notes. The Ring starts at 0 %, as Damage's Chance starts at Resting: nothing rings or stutters until you ask.
4. Carry on to **REMADE**. The choir sings your sound in the key, with some of the breakage left in it. Move the Seam back and forth: each stage glides into the next, and the level holds the whole way.
5. Set the song's key: click the button beside Key and the Ring (it reads Snap) and choose a Key and a Scale. Or click **Chords: Key**, choose Notes, and play a chord from a MIDI track into Tsugime: the Ring and the damage

follow it.

6. With the Seam at Broken and your host playing, turn **Pattern**, under Damage, to Stutter, then turn **Chance** up from Resting (it starts there, so nothing stutters until you ask). The damage falls on the grid: half-way for now and then; up for always. Try Wrecked.

7. Click the program's name, in the header, and try Copier Hymn on a voice, Pressed Breaks on drums, Forty Winters on a pad, or Home Computer Choirboy on a melody.

> NOTE NAMES
>
> Tsugime names keys as Ableton Live does: middle C, MIDI note 60, is C3. The sampler plays its sound at its own pitch on C3, and the on-screen keys are labelled the same way.

The panel



The Main page with the Chip as the Character, the Seam half-way between Worn and Broken and Ragged at 70 %: the machine's trace below the voice's in the picture is torn where the join tears. The Damage strip shows Hiccup's three steps.

1 **Program**	The program's number and name, with a star once you change the sound. Click the name for the program menu; the arrows step through the sounds. See Programs and your presets.
2 **Main, Sampler, Edit, Time, Space**	The five pages. The header, the picture and the Seam stay on all five; the lower half is the page's. The page lit is the one shown.
3 **Input, Sound**	The source: the audio coming in, or the sampler's sound. Clicking Sound before there is one opens a file to load.
4 **Reset, Load..., Capture**	Back to clean (it asks first: click twice); load a sound from a file; or keep the last ten seconds heard as the sound. See The sampler, and Programs and your presets for Reset.
5 **Keyboard glyph**	Shows or hides the on-screen keys, six octaves from C0 to C6, under the lower half. Click a key to play it.
6 **Size and key**	The window size, and under it the licence key.

7	**The sound's name**	The sampler's sound: a file's name, Sampled, Captured or Resampled with the time, or No sound yet. Notes such as In F# minor or Keeping the last ten seconds show here in amber for a few seconds.
8	**The picture**	The last four seconds heard: the voice above, the Character's side below, the Seam drawn through both, the stage named at the top right (or the breakdown under way) and the Damage steps along the foot. See The picture, below.
9	**Seam** 0 to 100 %; 0 %	The journey: Clean, Worn, Broken, Remade, marked beneath it. Beneath it too, as SEAM 50 %, where it is; and, while Age has carried it further, AGED TO where the journey has got to. See The Seam.
10	**Freeze** On or off; off	Holds the Character's side where it is, going round. See The Seam.
11	**The Character** Tape; 8	The Character's name: click it for the menu of eight. See The Characters.
12	**The Character's knobs**	Its machine's own three knobs, which change with it (the Chip has two; the Tape's wear is the tape's, and it has none). Below them, at the foot, Remade by names its voice, and a line says how it breaks.
13	**Follow, Ragged, Width**	How closely the remade voice follows the pitch heard; how torn the join; how wide the Character's side in stereo.
14	**Snap, key and scale** Snap	A menu: the key and scale for the whole of Tsugime, and Snap, the remade voice's pitch. It reads Snap while Snap is off, Semi, or the key, as C MAJ. See Key and the Ring.
15	**Chords, Link, In Key** Key; A; on	The chord Tsugime hears (the key's, the notes held, or Kiri's); the generators' link letter; and the damage in key. Under them, HEARING names the chord's notes.
16	**Ring, Decay, Tune** 0 %; 1.9 s; Chord	The twelve tuned strings the damage rings through: how much, how long, and what they are tuned to.
17	**The Damage strip**	The sequencer's sixteen steps, each action as a letter, lit as they play. Click it for the grid in full, on the Edit page. The title above names the pattern.
18	**Pattern, Chance, Rate, Swing**	The Damage sequencer's pattern, how many of its steps fire, how long a step is, and its swing. See Damage.
19	**Kick** Off	The steps on Kaminari's kick, between its kicks, or as written. Under it, while it is on, what the link has found.

20	**Cassette, VHS** VHS	The tape the Character's side is played back from.
21	**Type 0 to Type IV** Type I	The cassette's tape. Dimmed while the tape is VHS; choosing a type chooses the cassette.
22	**Depth, Wow, Rate, Dropout, Bias**	The tape's wear, how far it bends the pitch, how fast it wanders, how often it drops out, and how it was recorded.
23	**Wrong EQ** On or off; off	The cassette replayed at the other equalisation. See The tape.

Using the controls

Drag a knob up or down, or sideways, to turn it; the mouse wheel steps it. Its value shows beneath in its own unit, brighter while the pointer is over it: 20 %, 4.00 s, 189 ms, Q 0.7, As written, Hiccup. Drag the Seam's amber bar along its line. Click a button to choose it; the chosen one is lit amber. A button with a small arrow opens a menu. Rest the pointer on a control for a moment and a short tip says what it does.

Every control is a host parameter, so your host can automate any of them, the space's three effects' included, those not on the panel too. The Damage sequencer's own steps and the choir's chord are not: they are kept with the project and in presets as data.

The picture

Across the top of the panel, the last four seconds of what you heard, played back on a worn VHS tape into a television. The upper trace, VOICE, is the source; the lower, MACHINE, the Character's side after its tape and the Damage sequencer. Each is drawn every hundredth of a second, as tall as it is loud, over 48 dB, so even a quiet breath shows, the newest at the right. The amber line across both is the Seam, where the journey is: as it moves on, the voice's trace dims and the machine's brightens. At the top right the stage it is nearest is named, and while the machine breaks down, its breakdown in its place, brighter, for at least most of a second: TAPE STOP, PAGE SLIPS, HEAD JAMS, LINE DROPS, POWER CUT, MOTOR STALLS, PRESS SLAMS or CHIP HANGS, so a failure you hear is one Tsugime meant; along the foot, the Damage sequencer's sixteen steps, those with an action brighter, the step playing lit.

GAPS	A blank column where Ragged took the voice or the Character's side out, or the tape dropped out.
THE SEAM	Broken by Ragged, and jumping when the join tears.
WAVERING	The machine's trace swings sideways with the tape's wow and flutter, and the whole picture waves with it.
COLOURS	Pulled out of register, further with Depth and further still while the tracking is torn; smeared along each line, as tape keeps far less colour than brightness.
TRACKING TEARS	Where the tape drops out, a band of the picture is torn sideways for a few frames.

THE ROOM'S LIGHT	With the Mains, the picture dims as its strip light dips, more the further the Seam has gone, stutters back on as a tube does, flashes with an arc and shimmers with the ballast.

Behind it all are the screen's own scanlines, noise, darker corners and a bright band rolling slowly down. The picture moves 25 times a second while sound plays, as a European tape did, carries on for about half a second after the sound stops, then rests. It shows the sound before the Ring and the space: the strings, the echo and the reverbs are heard, not drawn. Faint scanlines run across the rest of the panel too.

The Seam

One control carries a sound the whole way: clean, worn by the Character and its tape, broken as the machine fails, then remade, sung again in the key by the Character's voice.

The journey

STAGE	WHAT HAPPENS
CLEAN	0 %. The sound as it is. Nothing of the Character is heard, not the Ring, not the Damage sequencer: at Clean the sound passes through as it is, only peaks close to full scale rounded over, softly.
WORN	A third of the way. The sound through the Character's machine, as the machine would leave it, and through the tape. From Clean to here the sound crosses over to the worn side; by Worn it is all the Character's.
BROKEN	Two thirds of the way. The machine failing. On the way from Worn to here, the tape's Depth is pushed up to half its travel further, Dropout by a third, Wow by a third; the machine's own knobs creep the way that machine's wear (more copies, fewer pins, a slower line); it breaks down, its own way, at least as often as Fail at 35 %; and the Damage sequencer's Chance, once it is up from Resting, is carried to the top, so every step with an action fires. At Resting no step fires at any stage: a loop is worn and broken, never stuttered unasked.
REMADE	100 %. The sound sung again by the Character's voice, the saw, the choir or the chip, in the key's scale while In Key is on. From Broken to here the broken sound crosses over to the voice, and the breakage eases to 40 % of what it was, so a remade sound still carries some of it.

Each stage glides into the next, smoothly, with no step anywhere along the bar. A move of the Seam glides over 30 ms, so automating it never clicks.

Along the way, the Character's side is brought to the source's loudness: worn, broken or remade, the level holds as the Seam moves and as the Ring is turned up. The match follows over about a second, never more than 6 dB either way, and learns only while the source is sounding, so the tails between notes and hits are left as they are and never turn the

next one down. The source is held back the 3.6 ms or so the Character's side takes, so the two meet in step and never comb.

Seam 0 to 100 %; 0 %	Where the journey is. Its value shows beneath it as SEAM 50 %.
Ragged 0 to 100 %; 0 %	Tears the join with tiny gaps, each 3 to 15 ms, taken out of the source or the Character's side at random: up to about thirty a second at full. They come most with the Seam half-way, fewer towards either end, and none at all at 0 or 100 %.
Width 0 to 100 %; 50 %	How wide the Character's side is in stereo. The source stays in the middle; the side moves as its machine would: the tape and the motor turning like a rotating horn, the copier's lamp sweeping across the page, the printer's head along its line and home, each strike of the press somewhere new, the mains' two tubes strobing out of step, the modem's far end, its echo, on the right, the chip's notes on its three channels in turn. At 0 the side is in the middle too.

> CUT LIKE A CROSSFADER
>
> Use the Seam as a DJ uses a crossfader. Over a drum loop, flick it quickly between Clean and Broken, back and forth in time with the beat: the break cuts between the loop and its wreck. Each move glides over 30 ms, so the cuts are sharp but never click. Map the Seam to a fader on your controller to play it by hand, and record the moves as automation.

Freeze

Freeze, at the right-hand end of the Seam, holds the Character's side where it is: the last stretch it played, as long as the loop's Length on the Time page (2 seconds as Tsugime starts), goes round and round, its join crossfaded. The source goes on as far as the Seam lets it through; the Damage sequencer and the Ring go on acting on what is held. Switch it off and the Character's side fades back in 30 ms.

> A FROZEN BED
>
> Freeze a vowel or a chord with the Seam at Worn, then move the Seam towards Broken: the held sound breaks up on the grid, in tune, while you play over it.

Age

On the Time page, **Age** moves the journey on by itself as Tsugime runs, as a tape wears: the Seam is carried towards Remade over as long as Age says, from half an hour to a minute of sound. The knob stays where you set it; beneath it, AGED TO shows where the journey has got to. **Renew** brings it back. See Time.

> CARRIED ACROSS
>
> Automate the Seam across a phrase, from Clean to Broken over a bar or two, with Ragged up: the sound comes apart at the line where it meets the machine.

肆 TSUGIME

The Characters

Eight Characters, each a whole way of wearing a sound, breaking it and remaking it. Changing the Character changes every stage of the journey at once.

Click the Character's name, under The Character, for the menu. Each wears the sound through a machine, breaks down as that machine does, and remakes the sound with one of three voices:

CHARACTER	WORN	BROKEN	REMADE
TAPE	Worn by the tape alone: wow, flutter, hiss, its type	Drops out, stretches, stops and winds back up	The saw
COPIER	Each copy softer and out of register	The page slips and repeats, greyer each time	The choir
PRINTER	Printed in dots on a thin ribbon	The head jams, hammering one dot	The chip
MODEM	Down a phone line, coded	Packets lost and repeated; the call drops and the line retrains	The chip
MAINS	Hum and a saturating core	Brownouts, cuts and surges	The saw
MOTOR	Sagging and wobbling	Stalls and winds back up	The choir
PRESS	Squashed, steel ringing	Slams shut, then blows steam	The saw
CHIP	The home computer's volume steps playing the sound	Hangs on its note	The chip

Each machine has three knobs of its own on the Main page, the Character's colour, and a few more on the Edit page. Each keeps its settings when you choose another, so you can go back to it as you left it, and your host lists them all by machine (Copier Generations, Modem Errors) for automation. They are subtle at their lower settings and wreck the sound at their highest, and the tape still wears what they give back.

What the machines hear

Tsugime follows the source as it plays: its loudness, rising quickly and falling away more slowly; its pitch, found between about 60 Hz and 1 kHz; and its brightness. Breath, noise and many found sounds have no pitch to find: then the last note it was sure of is held. The remade voices play that pitch and that loudness; the press tunes its steel to the pitch;

the saw's filter opens with the brightness.

While the keys play the sampler's sound, the remade voice plays the key you played last instead, gliding to it in about 30 ms, and stays on it, held or not, until you play another. Choose Drone or Input and it follows the pitch heard again.

Follow Hold, 2.7 s to 30 ms; 189 ms	How closely the pitch followed chases the source's: at the top it lands within 30 ms, slower as the knob falls, about 2.7 s near the bottom. At the very bottom it reads Hold, and stays on its note whatever the source does.

Tape

The tape itself is the machine: its transport passes the sound as it is, and the wear is all the tape's, so turn up **Depth**, **Wow** and **Dropout** under The Tape to hear it worn. It has no knobs of its own; the panel says Its wear is the tape's. Broken, the tape stops: it slows to silence and winds back up, then runs a little fast until it has caught up. In key, it never stops: it lands an octave, a fifth or a fourth down and catches up the same way. Remade by the saw.

Copier

The sound as a copy of a copy. Each generation is softer than the last, its top end blurred away and its bottom thinned, and a little out of register, the copy before it showing through just behind. The contrast is pushed as a copier pushes it: quiet passages pressed darker, loud ones harder. Toner specks and grain ride on the sound where there is sound to print, and the lamp leaves faint bands as it passes. Remade by the choir.

Generations 1 copy to 8 copies; 3 copies	How many times it has been copied. One copy is nearly the sound; eight is a grey ghost of it, under 2 kHz and doubled.
Contrast 0 to 100 %; 40 %	Quiet passages quieter and loud ones louder and pressed harder, against the passage around them; more with each copy.
Toner 0 to 100 %; 30 %	Specks and grain on the sound, and the lamp's slow bands.

Printer

The sound printed in dots. Its level is put on as many steps as the head has pins, and each dot's error is carried into the next, as a halftone carries it, so quiet passages print as a sparser pattern rather than vanishing. The dots are as far apart as the head prints them: close, and the sound is only grained; far apart, and its upper half folds back on itself. In key, the dots are printed at a whole multiple of the note heard, so what folds back lands on that note's own harmonics: a brighter note rather than hash. The ribbon runs thin now and then. Remade by the chip.

Pins 3 to 64 pins; 14 pins	How many steps the level is printed on. At 64 a fine grain; at 3 the sound is all but on or off.
Dots 1.5 to 24 kHz; 7.9 kHz	How often a dot is printed. Lower, the sound darkens and folds back into a metallic grit.

Ribbon 0 to 100 %; 20 %	The ribbon running thin: patches of fainter dots, some missing.

Modem

The sound sent down a phone line. It is held to the telephone's band, then coded as the line codes it, finely when quiet and coarsely when loud, at a few thousand samples a second in as few bits as the speed allows (in key, at a whole multiple of the note heard), then sent back. Line noise rides with the call. And errors: a bit flipped here and there, crackling, and now and then a packet lost, which the far end fills by repeating what it had, so the sound stutters. Broken, the call drops, and the line retrains: it comes back slow and coarse and climbs back to speed. Remade by the chip.

Speed 300 baud to 56k baud; 6.9k baud	How fast the line: at the top the coding at 8 kHz in 8 bits, a good telephone; at the bottom 2 kHz in 3 bits, a voice from very far away.
Line 0 to 100 %; 30 %	The line itself: its band narrower and its noise louder.
Errors 0 to 100 %; 15 %	Bit errors crackling and lost packets stuttering, more of both.

Mains

The sound through a transformer on the mains. Its iron core saturates as it is driven, a little lopsided, so the warm even harmonics come, the bass blooms and the top closes. The 50 Hz of the mains rides on the sound itself, with a hum that comes and goes with it. Over it, a strip light: its ballast strobing at 100 Hz, arcs crackling at the mains' peaks, the tube dipping now and then. Broken, the power browns out, cuts out and surges back, and the picture goes dark with it. Remade by the saw.

Load 0 to 100 %; 40 %	How hard the transformer is driven: from a little warmth to a thick, saturated sound.
Hum 0 to 100 %; 30 %	The mains on the sound: 50 Hz riding on it, and a hum that comes with it.
Flicker 0 to 100 %; 10 %	The strip light: its strobe, its arcs and its dips, more of each, and the picture with them.

Motor

A motor driving the tape the sound is on. When the sound is loud the motor labours: it sags, the tape slows and the pitch sinks, then as the load comes off it catches up and the pitch comes back. Its shaft and belt turn, swinging the pitch and the level a little round and round, and under load its frame shudders. Broken, it stalls and winds back up; in key, its stall lands an octave, a fifth or a fourth down rather than stopping. Remade by the choir.

Inertia 20 ms to 2 s; 126 ms	How heavy the motor: light, every syllable bends the pitch; heavy, it sinks slowly through a phrase and takes as long to come back.
Wobble 0 to 100 %; 30 %	The shaft and the belt turning: a quick swing and a slow one in the pitch, and the level going round with them.
Strain 0 to 100 %; 40 %	How hard the load drags it: how far the pitch sinks when the sound is loud, and how much the frame shudders.

Press

The sound squashed. A compressor as hard as you ask, closing quickly and opening as slowly as the press is heavy, then flattening whatever still gets past. Steel rings in tune with it: two damped resonances at the pitch heard and at a steel bar's second tone. And between words, as the press lifts, the hiss under the sound is brought up with it, a breath. Broken, it slams shut, silent, then blows a blast of steam as it opens. Remade by the saw.

Weight 0 to 100 %; 50 %	How hard it presses: at the bottom a gentle squeeze, at the top the sound flattened, quiet and loud alike, opening slowly.
Metal 0 to 100 %; 30 %	Steel ringing in tune with the sound: more, and longer.
Steam 0 to 100 %; 30 %	The breath it lets out between words, and a slower lift.

Chip

The sound played through a home computer's sound chip, as those computers played speech: through the chip's volume register, about six thousand times a second, in four bits. Free, each step lands a little early or late, as the computers' timing did; in key, the steps are even, at a whole multiple of the note heard. Broken, the chip hangs: caught in its loop, it plays its last moment over and over, a buzz on its note. Remade by the chip's own voice, with its two knobs on the Main page.

The remade voices

The saw Tape, Mains, Press	A saw with a sine an octave below it, through a resonant low-pass whose cutoff sits above the note and opens further as the sound brightens, from 120 Hz to 9 kHz. It plays the pitch and loudness heard: a spoken line becomes a synthesizer's line that speaks with it.

The choir Copier, Motor	The sound's words sung by a choir. Tsugime hears the sound in bands, from 120 Hz to 7.5 kHz, and lays the shape of each band over a chord sung by a few voices to a note, each a little apart and wavering: a vocoder. The chord's root is the pitch heard, moved to the nearest note of the key's scale, and its other notes are the scale's, so a spoken line becomes a choir singing in the key.
The chip Printer, Modem, Chip	A home computer's sound chip, behaviour for behaviour. Its square tone counts the ticks of its clock: each cycle a whole number of steps, so the higher a note, the further it lands from true. Its loudness has only sixteen steps, about 3 dB apart, so a fading sound fades in stairs.

The saw's, the chip's and the choir's own settings are on the Edit page. The chip's two are on the Main page too, with the Chip as the Character:

Buzz 0 to 100 %; 0 %	Crosses from the chip's tone to its envelope run as a buzzing, stepped saw: the hardware envelope repeating at the note's pitch, its own period a whole number of clock ticks too, so its buzz bass is out of tune in its own way.
Noise 0 to 100 %; 0 %	The chip's noise, from a 17-bit shift register. Half-way, the tone is gated by the noise, as the chip mixed them; at full, noise alone. The brighter the sound, the higher the noise.

> TWO VOICES TO TRY
>
> The Chip remade, Buzz at full, with a bass line or a hummed note: the chip's buzz bass. The Copier remade, with a spoken line and Kumo after it: a choir in a hall, singing your words.

伍 TSUGIME

Key and the Ring

The damage obeys the music: the key and scale, and the chord being played. What breaks rings through twelve tuned strings, so crackle, dropouts and noise sound as harmony.

The key

The button at the right of Key and the Ring opens a menu: Snap, then the Key and the Scale in their own submenus, then Find the key from the sound. The key and scale are the whole of Tsugime's: the Ring, the damage in key, the Damage sequencer's Pitch steps and the remade voices all use them.

Key, Scale C to B; Major, Minor, Dorian, Mixolydian, Pentatonic, Minor pentatonic, Harmonic minor, Whole tone; C Major	Each new sound, loaded, dropped, sampled, captured or resampled, sets them to its own: Tsugime listens for its notes and picks the major or minor key they belong to, and says so where the sound's name is (In A minor). Find the key from the sound listens again. Choose another key afterwards if you like: it stays until the next sound. A program never changes them.
Snap Off, Semitones, In scale; Off	The remade voice's pitch: free, through every cent; on whole semitones; or on the notes of the scale. While In Key is on, it is always on the scale. The button reads Snap while it is off, Semi, or the key, as C MAJ.
In Key On or off; on	The damage in key, below.

In Key

With **In Key** on, as Tsugime starts, every kind of damage resolves to the music:

CRUSHING	Where the sound is held at a lower rate (the Damage sequencer's Crush, the printer's dots, the modem's coding, the chip's steps), the rate is a whole multiple of the note heard, moved to the scale; or, while no pitch is sure, of the chord's root, low. What folds back lands on that note's own harmonics: a brighter note rather than hash.
REPEATS	A repeat short enough to be heard as a tone, under 30 ms (the printer's hammered dot, the Damage sequencer's shortest repeats), is made exactly one period of the chord's nearest note, so it buzzes in tune.

STOPS	A stall of the Tape or the Motor lands an octave, a fifth or a fourth down instead of grinding to a halt; the Damage sequencer's Stop lands a fourth, a fifth, an octave or two octaves down.
PITCH	The sequencer's Pitch steps move by degrees of the scale, not semitones.
STUCK NOTES	With the Chip, the note it hangs on as it breaks is the scale's nearest.
THE REMADE VOICE	Sings on the notes of the scale.

Off, each is free, as a machine would leave it.

The chord heard

Chords Key, Notes, Kiri; Key	The chord Tsugime hears, for the Ring and the damage in key. Key: the key's own chord, the scale's first, third and fifth. Notes: the notes held on Tsugime's track, from a MIDI track or the on-screen keys, every one held, the lowest its root; kept when they are let go, until you play another. Kiri: the chords Kiri is playing, through the generators' link, as Nagare and Hibari follow them.
Link Off, A, B, C, D; A	The generators' link letter: the one Kiri and Kaminari are on. It is used for Chords: Kiri, and for the Damage sequencer's Kick. Dimmed unless something uses it: Chords on Kiri, or the Kick. A program never changes it.

Under the buttons, HEARING names the chord's notes, and with Kiri, whether it is following (KIRI), waiting for one to start on its letter, or keeping the chords last heard after Kiri has gone (KIRI'S LAST). Kiri's chords are its progression at your host's position, its edits, and any chord played into it.

The Ring

Twelve tuned strings, plucked by whatever the Character's side carries: its crackle, clicks and dropouts, its noise and its notes. They ring with what is in tune with them, so wreckage becomes harmony. They are tuned from E2 upwards, alternately left and right, the higher ones ringing a little shorter, as real strings do; the deep rumble is kept off them. The Ring is on the Character's side, so with the Seam at Clean it is silent.

Ring 0 to 100 %; 0 %	How much of the strings is heard. The level match holds the loudness as it is turned up: the Ring changes what is heard, not how loud.
Decay 0.3 to 12 s; 1.9 s	How long the strings ring.
Tune Roots and Fifths, Chord, Scale; Chord	What they are tuned to: the chord's root and fifth, a drone; the chord's notes; or every note of the key's scale. The button reads TUNE: CHORD, or TUNE: FIFTHS for Roots and Fifths; the same menu is on the Edit page.

DRUMS IN THE CHORD

Put Tsugime after a drum loop, Chords on Notes, and play the song's chords into it from a MIDI track: the drums' damage rings as each chord in turn.

Damage

A sixteen-step sequencer that damages the sound on your host's grid: each step an action, with a chance and an amount.

The Damage sequencer acts on the Character's side, after its tape and before the Ring, so the Ring rings with what it does, and with the Seam at Clean it does nothing heard. It keeps your host's time while it plays; stopped, it keeps its own, at your host's tempo; in the standalone, 120 to the minute.

The actions

Pass -	Nothing: the sound as the Seam has it.
Repeat R, RPT	The step's first slice, over and over: from half the step at the lowest amount to a thirty-second of it at the highest. Short enough to buzz, in key, it buzzes exactly on a note of the chord.
Reverse RV, REV	What was just played, backwards: from a quarter of the step to the whole of it.
Stop S, STOP	A tape stop: slowing over the first part of the step, then holding. In key, it lands a fourth down at the lowest amount, a fifth, an octave, or two octaves at the highest. Free, it slows as far as the amount says, and stops altogether at the top, silent. Stops on steps in a row carry on from each other.
Crush C, CRSH	The sound held at a lower rate in fewer bits: from 8 kHz in 12 bits down to 500 Hz in 4. In key, the rate is a whole multiple of the note heard.
Drop D, DROP	The machine breaks down for the step, its own way, and the level dips, by as much as the amount says.
Pitch P, PTCH	The step moved up or down: at half the amount it stays, lower down, higher up, as far as an octave either way. In key by degrees of the scale; free by semitones. Its two read heads are kept a whole number of the note's periods apart, so it stays in tune.
Gate G, GATE	The end of the step silent: from its last quarter to all of it. The Ring rings on through the silence.

Each step's edges are faded over 3 ms, so nothing clicks as an action starts or ends.

On the Main page

Pattern Hiccup, Skip, Tape Stop, Stutter, Crushed, Backspin, Broken Radio, Wrecked, Custom; Hiccup	Eight patterns, from sparse to wrecked, below; and Custom, the steps as you have edited them on the Edit page. The section's title names it, as DAMAGE: HICCUP.
Chance Resting, 1 to 100 %; Resting	Every step's chance at once: at the bottom, Resting, none fire; half-way, As written, each step as likely as its own chance; at the top, every step with an action fires. The Seam's Broken stage carries it to the top, from 10 % up; at Resting nothing fires, whatever the stage.
Rate 1/8, 1/16, 1/32; 1/16	How long a step is: an eighth, a sixteenth or a thirty-second note at your host's tempo.
Swing 0 to 100 %; 0 %	The second step of each pair late, by up to a third of a step.
Kick Off, On the Kick, Between Kicks; Off	With Kaminari on the generators' link letter, the steps fire only where its kick falls, or only between its kicks. Under the button, Tsugime says what it has found: KAMINARI ON A, WAITING FOR KAMINARI ON A, KAMINARI'S LAST (the pattern last heard, kept after Kaminari has gone), or that the link is off. With nothing found, the steps fire as written.

The strip beside them shows the sixteen steps, each step with an action as its letter (R, RV, S, C, D, P, G), every fourth step marked, the step playing lit, brighter while its action is under way. Click it for the Edit page, where the steps can be changed.

The patterns

HICCUP	Now and then a step caught: two repeats and a reverse, late in the bar.
SKIP	The off-beats cut short, and a repeat.
TAPE STOP	The bar's end slowing down, three stops in a row.
STUTTER	Rolls quickening into a buzz at the bar's end.
CRUSHED	The off-beats ground down, and a step moved.
BACKSPIN	Steps thrown backwards, and a stop.
BROKEN RADIO	Dropping out, crackling, cutting.
WRECKED	Something on every step.

A FILL

Set the Seam just short of Broken and Chance at Resting, then automate Chance up into a fill: the bar falls apart on the grid, and back.

The tape

The Character's side is played back from a tape, and the tape wears it. The source is never taped: the wear is all on the Character's side of the Seam.

Silence in, silence out. The tape's hiss, clicks and crackle, the Damage sequencer's breakdowns, and the echo's own hiss and hum in the space all follow the sound: they come in with it, carry on for two seconds after it stops, so the machine still sounds alive between phrases, then fade away over a second. A loop held by Freeze or Hold counts as sound. Given nothing, Tsugime is silent. What the sound itself leaves, its echoes and reverb, the strings and the decay loop, rings out as it always has.

The controls

Cassette, VHS VHS	The tape: a cassette, of one of five types, or a VHS tape's sound track.
Depth 0 to 100 %; 0 %	The wear: how far the pitch wavers, how much treble is lost, how hard it saturates, how loud the hiss, and how deep a dropout dips. At 0 the tape leaves the sound as it is but for the top of its treble, which a dropout still takes for a moment. The Seam's Broken stage pushes it up to half its travel further.
Wow 0 to 100 %; 0 %	How far the tape bends the pitch, apart from its wear. At 0 the tape wears the sound without bending it at all, until the Seam's Broken stage, where a failing tape starts to sway. It starts at 0: turn it up for the drift of a worn cassette.
Rate 0 to 100 %; 50 %	How fast the transport wanders, from a quarter of its pace to four times it: slow seasick drifts, or a quick, nervous flutter.
Dropout 0 to 100 %; 0 %	How often the tape drops out, up to about four times a second at full. Each lasts 10 to 50 ms; the treble goes first, a few milliseconds ahead of the level, and comes back slowly, as worn oxide does. How deep it dips, 10 to 30 dB at full wear, follows Depth.
Bias Under 100 % to Over 100 %; Right	How the tape was recorded. Under-biased, brighter and dirtier, saturating sooner; over-biased, duller and cleaner. In the middle it reads Right. It works on either tape.

The cassette

A cassette's transport wavers more than a VHS deck's: its wow swings the pitch by up to about 2 ms of tape either way, with flutter on top. It saturates, more as it wears, and loud treble closes its own treble, as tape erases its highs when they are loud. Its hiss sits under everything, and the layer of tape wound over this one prints through faintly, as an echo 1.3 seconds on. Five types of tape, each after the published comparisons of its formulation:

TAPE TYPE	ITS SOUND
TYPE 0	Basic ferric, the cheapest. Dull, 12 kHz new and 3.5 kHz worn; the most hiss; twice as many dropouts as the rest.
TYPE I (FERRIC)	Normal bias, 120 µs. Strong bass and more hiss; loud treble crowds out the treble; a little print-through. As Tsugime starts, the cassette's type.
TYPE II (CHROME)	High bias, 70 µs. Very low, darker hiss and the least noise on the signal, but shy in the bass, 5 dB down at full wear and saturating sooner, and a sharp, dissonant overload.
TYPE III (FERRICHROME)	Ferric's bass under chrome's treble.
TYPE IV (METAL)	The most headroom and the cleanest treble, 7 kHz even worn; bass a little lower than ferric's.

Wrong EQ On or off; off	Replays the cassette at the other equalisation, as a deck switched to the wrong tape does. A 70 µs tape, Type II, III or IV, played at 120 µs comes out about 4 dB brighter and hissier; a 120 µs tape, Type 0 or I, played at 70 µs that much duller.

The tape types and Wrong EQ are dimmed while the tape is VHS. Choosing a type chooses the cassette.

The VHS sound track

A VHS tape's linear sound track, as a home recorder made it. Its transport is steadier, the wow a third of the cassette's and the flutter two thirds. Its treble runs to 14 kHz new and 6 kHz worn, and the deep bass goes, more as it wears. The recorder's automatic level control lifts quiet passages and holds loud ones back, slowly, so the sound breathes, and the hiss it recorded comes up in the pauses, for as long as the noises follow the sound. There is playback hiss on top, a faint click as the heads switch fifty times a second, and dropouts that crackle as the heads lose the track. As Tsugime starts, the tape is VHS.

> WEAR WITHOUT THE WOBBLE
>
> For a tape that hisses and breathes but stays in tune, turn Wow to 0 and Depth up. For a warped, seasick tape, Depth and Wow up and Rate down. With the Tape as the Character, these are its whole wear.

The sampler

The source is what goes into the journey: the input as it comes, or the sampler's sound. The sampler keeps one sound of up to ten seconds, in the ways of an early 16-bit sampler, and keeps what Tsugime makes of it.



The Sampler page with a voice captured at 36 kHz, trimmed with S and E. Under the screen, Crop, Undo, Save, Drag, Resample, Stretch, Grain and Fit.

The source

Input As Tsugime starts	The audio coming in, mixed to one channel. The keys play no sound while it is the source, though the notes held still set the chord when Chords is Notes.
Sound	The sampler's sound, played from the keys or as a drone. Sampling, loading or capturing a sound chooses it. If there is no sound yet, clicking it opens a file to load.

Getting a sound

Sample	Arms the sampler, and makes the sound the source. It waits for the input to reach the **Trigger** level, then records for the **Length** set, and the new sound plays at once, its trim opened out to the whole sound, its name Sampled with the time. The button reads Wait while it waits and Rec while it records; click it again to cancel. The sampler always records the input, whichever source is playing. Clicked while Resample is recording, it waits for that to finish, then arms.
Trigger 0 to 100 %; 8 %	How loud the input must get to start the recording. The knob's travel is squared, so its lower half covers the quiet levels: 8 % is about −44 dB below full scale, 50 % about −12 dB. At 0 recording starts the moment you arm it.
Length 0.10 s to 10 s; 4.00 s	How long the sampler records once it starts, and how long Resample records.
Load...	In the header. Loads a WAV, AIFF, FLAC or Ogg file: up to its first ten seconds, mixed to one channel, at the rate chosen. Its name is the file's. You can also drop a file anywhere on the panel, from File Explorer, the Finder or your host's browser; on the Sampler page, the screen is ringed in amber while it is over the panel, and on every page the picture reads INSERT TAPE. When a sound goes in, the picture says so for a few seconds: its name, its length and how to hear it. A file Tsugime can't read, or one with no sound in it, is refused, the sound left as it was, and the picture says that instead.
Capture	In the header. Keeps the last ten seconds of the source as the sound, at the rate chosen, with no need to arm anything first: the input, or, while Sound is the source, the sound as you played it, so you can capture what you played and play it again. Its name reads Captured with the time. While Sample or Resample is recording, Capture keeps nothing and says so: let the recording finish, or stop it, first. Before your host has played anything there is nothing to keep, and it says that too.

The rate

A sound is kept at one of three rates, at 16 bits, and passes on its way in through the filter its rate sets, as the original's did:

36K	36 kHz, through a 14 kHz filter. The clearest.
18K	18 kHz, through a 9 kHz filter, gentle, so a little of what lies above it folds back as harsh tones.
9K	9 kHz, through a 4.5 kHz filter, gentle too, so more folds back: the grainy, telephone end.

The rate applies to the next sound you sample, load, capture or resample. A sound already kept stays at the rate it was kept at.

The screen

A small dot-matrix screen, pale with dark dots, shows the whole sound as a waveform. The top line reads EMPTY before there is a sound, WAIT while the sampler waits for the trigger, REC while it records, then SMP and the rate chosen; at the right, the sound's length in seconds, and LOOP and REV while they are on.

S and E The whole sound	The start and the end. The part between them, the trimmed sound, is drawn dark; the rest faint. Drag a dotted line sideways to move it.
L and L A quarter and three quarters	The loop's two points, shown while Loop is on, as parts of the trimmed sound: trim it and the loop moves with it. The loop is drawn inverted. With Rev on they are where the loop is heard, mirrored between S and E as the sound plays backwards, and Crop to Loop keeps what they show.

Click near a point, within a few dots of it, and drag. The start, the end and the loop's points are host parameters too, so they can be automated.

Playing it

Keys As Tsugime starts	The keys play the sound, eight voices at a time. C3 plays it at its own pitch; each key reads it faster or slower, and each sample is held until the next, with no smoothing between them, as the original's converters held them. That is the grit of transposing: low notes step, high ones alias. A ninth note takes the oldest voice. Each note rises in 2 ms, and its level follows velocity, the softest notes much quieter. Without a loop, a note ends where the trimmed sound does, even with its key held.
Drone	The trimmed sound over and over at its own pitch, with no keys needed: the loop, if Loop is on, or the whole trimmed sound from its start. A new sound starts the drone from its beginning, faded in over 2 ms so it never starts with a click. It is no note: a host's All Notes Off or All Sound Off leaves it playing.
Loop On or off; off	While a note sounds, release included, the sound goes round between the L points, jumping back from the second to the first.
Cross 0 to 100 %; 20 %	The loop's crossfade: as the loop nears its end, the sound just before its start fades in, so the jump is smooth. At 100 % it takes half the loop. It never reaches back before the sound's start. Stretch and Fit go round through it too.
Rev On or off; off	Plays the trimmed sound backwards.

Cutoff 20 Hz to 20 kHz; 20 kHz	A resonant low-pass on every voice and the drone. Its cutoff moves in 256 steps, as an 8-bit register sets it, so a slow sweep steps.
Resonance Q 0.7 to Q 10.9; Q 0.7	The peak at the cutoff.
Release 10 ms to 4 s; 148 ms	How long a note takes to fade once its key is let go.

A loop needs a trimmed sound of more than a few dozen samples.

Stretch and Fit

Stretch On or off; off	The key sets the pitch and the sound keeps its own length. Two read heads move through the sound at its own speed, each reading a short slice at the key's pitch, crossfaded; each new slice starts so its middle reads where the sound has got to, lined up as well as it can be with the one still sounding, compared over a whole period of even a low note, so the note stays in tune from the bottom of the keyboard to the top, its attack is heard whole, and a drum loop's hits stay near their time. It has the grain of the later rack samplers' time-stretch. Off, a higher key plays the sound faster and shorter, as the early samplers did.
Grain 15 to 120 ms; 30 ms	How long each slice Stretch and Fit read, from a menu: short for smoother, long for choppier. It can change as a note plays without a waver. Dimmed while neither is on.
Fit Off, Auto, 1 Bar, 2 Bars, 4 Bars, 8 Bars; Off	The loop, or the trimmed sound without one, stretched to a whole number of bars at your host's tempo and metre, so a sampled phrase stays in time whatever the tempo, its pitch where the key puts it. Auto chooses the nearest whole number of bars, at least one. The drone keeps time with it too. It plays the sound at an eighth of its speed at the slowest, eight times at the fastest, and keeps to whole bars: asked for more or fewer than that allows, it takes as many as it can.

Cutting and keeping

Crop	Cuts the sound itself, from a menu. Crop to the loop (L to L) keeps the loop alone, its crossfade made part of the sound, so it loops cleanly from its first sample (Loop must be on). Crop to S and E keeps the trimmed sound. The marks move to the new ends. A cropped sound is smaller in the project, and Rev still plays it backwards.
Undo	Brings back the sound as it was before the last crop, its marks with it. It is there until the next crop or a new sound; dimmed when there is nothing to undo.

Save	Saves the sound as it plays, S to E, backwards if Rev is on, as a 16-bit WAV file, from a menu: at its own rate (36, 18 or 9 kHz) or at the project's rate. It offers `Documents/Denki Digital/Tsugime/Samples`, the file named after the sound and the date.
Drag	Drag this button onto a track in your host: the sound as it plays, at the project's rate, as a WAV file (a copy is kept in the Samples folder, named with the date and time).
Resample	Records Tsugime's own output, everything you hear, the Seam, the Character, the Ring, the tape and the space, back into the sampler as the new sound: starting at once, for as long as Length, or until you click it again (it reads Stop). The new sound takes the old one's place, its name Resampled with the time, and its key is found from it. If Input is the source, choose Sound to play it. Destroy, resample, destroy again: each pass goes further.

Before Tsugime is unlocked, a sound saved or dragged out leaves out the last beat of every bar, at your host's tempo and metre, and the last beat of the sound, and the file's name, as Tsugime offers it, ends in demo; a resampled sound keeps the rests where they fell as you heard it. Once Tsugime is unlocked, they come out whole.

> A WORD, PLAYED
>
> Sample a single word with Trigger low and Length short, set the rate to 9K, and play it two octaves down: the old sampler's grain. Then loop its vowel with Cross at 50 % for a held note, Crop to the loop, and Fit it to a bar.

The Edit page

The Edit page holds what is inside the journey: the Damage sequencer's sixteen steps in full, the Ring's tuning and the chord it hears, the Character's machine's own settings, and its remade voice's.



The Edit page with the Modem as the Character and Broken Radio as the pattern: each step's action, chance and amount. At the right, the Ring tuned to the chord heard; below, the modem's own settings and the chip that remakes it.

The Damage grid

Each column is a step, left to right, every fourth marked, as a bar's beats are. The step playing is lit.

Does	The step's action. Click the cell for a menu: Pass, Repeat, Reverse, Stop, Crush, Drop, Pitch, Gate.
Chance 0 to 100 %	How likely the step is to fire, before the Chance knob scales them all. Click or drag the bar.
Amount 0 to 100 %	How far the action goes: how short a repeat, how much reversed, how far a stop falls, how hard the crush, how deep the drop, how far the pitch moves, how much is silent. Click or drag the bar.

Editing starts from the steps you hear, the pattern's, and makes the pattern Custom, its knob's last place. Turn the Pattern knob back to any of the eight whenever you like; your own steps stay, and Custom brings them back. They are kept with your project and in presets, and Reset puts them back as they start.

The Ring

The Ring's tuning again, as on the Main page, and HEARING with the chord's notes.

The choir's chord



The Edit page with the Copier: its remade voice is the choir, so the choir's chord shows, the triad as it starts (degrees 1, 3, 5 and 8), with the choir's seven settings below.

With a Character the choir remakes, the Copier or the Motor: the degrees of the key's scale above the root the choir hears. 1 is the root itself, 3 the third, 5 the fifth, 8 the octave in a seven-note scale, up to 15; LOW is the root an octave down. Click a degree to put it in the chord or take it out. Up to eight notes sound, from the lowest. Editing makes the choir's Chord Custom, as the Damage grid does the pattern.

The Character's machine

Under the grid at the left, the settings behind the machine's three knobs. As each starts, the machine sounds as it does with the Main page alone. The Tape has none: its wear is the tape's, on the Main page.

Copier: Lamp 0.10 to 2.00 Hz; 0.45 Hz	How fast the lamp passes, and its bands with it.
Copier: Register 0 to 200 %; 100 %	How far each copy sits out of step with the last.

Copier: Paper 0 to 200 %; 100 %	How thin each copy leaves the sound: how much of its low end goes.
Printer: Wander 0 to 100 %; 50 %	How often the ink changes from rich to thin.
Printer: Jitter 0 to 100 %; 0 %	The head's timing uneven: each dot a little early or late.
Printer: Halftone On or Off; On	On, each dot's error is carried into the next, so a quiet passage prints as a sparser pattern of dots. Off, plain steps: what falls below the first step is gone.
Modem: Packet 10 to 60 ms; 20 ms	How long a packet: a lost one is this long, repeated.
Modem: Echo 10 to 200 ms; 45 ms	How far back the far end's echo comes, on the right with Width up.
Modem: Coding Mu-law or A-law; Mu-law	The line's coding: mu-law, as North American and Japanese lines code a voice, or A-law, as European ones do. Each is coarse in its own way.
Mains: Mains 50 Hz or 60 Hz; 50 Hz	The mains: 50 Hz, as in the UK and Europe, or 60 Hz, as in North America.
Mains: Lopsided 0 to 200 %; 100 %	How lopsided the transformer: the even harmonics it adds.
Mains: Dip 0 to 100 %; 85 %	How dark the strip light goes when it falters, and the sound with it.
Motor: Shaft 1.0 to 10.0 Hz; 4.3 Hz	How fast the shaft turns: Wobble's quick swing.
Motor: Belt 0.20 to 2.00 Hz; 0.83 Hz	How fast the belt turns: Wobble's slow swing.
Motor: Shudder 10 to 60 Hz; 28 Hz	How fast the frame shakes under load.
Motor: Sag 10 to 60 ms; 30 ms	How far the motor can drag the tape behind at full Strain: how far the pitch can sink.
Press: Attack x0.25 to x4.00; x1.00	How quickly it comes down, as against what Weight sets: lower, quicker.
Press: Release x0.25 to x4.00; x1.00	How slowly it lifts, as against what Weight and Steam set: higher, slower, and more of a breath.

Press: Ring x2.00 to x4.00; x2.76	The steel's second ring, above its first: 2.76 is a bar of steel's; others, other metals.
Chip: Digi rate 3 to 12 kHz; 6 kHz	How fast the sound is played through the chip's volume: coarse and gritty at 3 kHz, clearer at 12.

The remade voice

Under the grid at the right, Remade by the Character's voice, and its settings.

Saw: Sub 0 to 100 %; 60 %	How loud the sine an octave below the saw.
Saw: Detune 0 to 30 cents; 0 cents	A second saw, tuned just above the first, fading in as the knob leaves 0: a fatter, beating saw.
Saw: Resonance 0 to 100 %; 58 %	How resonant the saw's filter.
Saw: Bright 0 to 200 %; 100 %	How far the sound's brightness opens the filter: at 0 it sits just above the note, dark; higher, it opens wide as the sound brightens.
Chip: Clock 1 MHz, 1.79 MHz, 2 MHz; 1 MHz	The chip's clock. Its notes are whole numbers of clock steps, so each clock puts a different set of them out of tune, by a different amount.
Chip: Shape Falling, Rising, Up and down; Falling	The envelope that Buzz plays: a falling saw, a rising one, or a triangle.
Chip: Buzz, Noise	As on the Main page: see The Characters.
Choir: Chord Octaves, Fifths, Triads, Sevenths, Ninths, Custom; Triads	How many notes the choir sings: the root and its octave, with the fifth, the triad, the seventh, or a wide ninth chord with the root an octave down; Custom, the chord set above.
Choir: Bands 8 to 24 bands; 18 bands	How finely the choir hears the sound: few bands, a soft, vowel-like choir; many, clearer words.
Choir: Breath 0 to 100 %; 20 %	Air in the voices: the consonants come through, and the choir breathes.
Choir: Voices 1 to 4 voices; 2 voices	How many voices sing each note.
Choir: Detune 0 to 30 cents; 6 cents	How far apart a note's voices are tuned: more, a wider, more chorused choir.

Choir: Vibrato 0 to 100 %; 15 %	How much each voice wavers, up to about a sixth of a semitone.
Choir: Rate 2 to 8 Hz; 5 Hz	How fast the voices waver.

Time

Machines run, break down and wear out. The Time page has three ways for Tsugime's to.



The Time page with the Modem: the loop going round at 60 %, breakdowns at 40 %, and Age at five minutes, the journey carried from 70 % to 81 % so far, its gauge at 37 %.

The loop

What the Character played goes round again: it is recorded as it comes out, and a loop later it goes back in, through the machine and the tape, and comes out again, another generation. A copy of a copy of a copy; a phrase printed, then the print printed. Each time round it keeps as much as Decay says, worn further each time: with the Copier it greys away, with the Modem it breaks up, with the tape at full wear it sinks into hiss. The loop is on the Character's side: with the Seam at Clean you hear none of it.

Decay Off, 1 to 100 %; Off	How much of what the Character played goes round again. Low, an echo or two; high, a long fade; at the top it hardly fades at all, and the machine and the tape wear it away. It keeps that share however loud the machine makes things.
Length 0.25 to 16 s, or a sixteenth to 8 bars; 2.00 s	How long the loop, and what Freeze holds. Change it while it plays and the new length glides in, bending the pitch as a varispeed would.

Sync On or off; off	The loop's length in your host's beats, at its tempo.
Hold On or off; off	Nothing new goes into the loop. What is there goes round and round, wearing away a generation at a time, while the source carries on. The source is eased out of the loop over 40 ms as Hold comes on, as a looper crossfades, so the join never clicks as it comes round.

A LOOP WEARING OUT

Capture a phrase, play it once with the Seam at Worn, Decay at 90 % and Hold on, then leave it: a minute later it is a ghost of itself. Kumo after it makes it a room.

Breakdowns

Now and then the machine fails, as often as Fail says, and only while it is running. The Character's name and how it fails are written beside the knob; the way each fails is in The Characters. The Seam's Broken stage breaks it down too, whatever Fail says, and so does the Damage sequencer's Drop.

Fail Never, 1 to 100 %; Never	How often: from about once in twenty-five seconds to every second or so.
Sync On or off; off	While your host plays, breakdowns start on its eighth notes and last whole sixteenths, so they fall in time: a rhythm of failures. Repeats keep time too.

Age

The journey moves on by itself as Tsugime runs, as a tape wears. It runs while it has sound to play, and only then: silence doesn't age it. As it ages, the Seam is carried on towards Remade: the knob stays where you set it, and beneath it AGED TO shows where the journey has got to. How far it has aged shows as a gauge, AGED with a percentage, and is kept with your project, so an aged machine stays aged.

Age Off, 30 min to 1 min; Off	How fast: the time, while it runs, to carry the journey all the way to Remade. Off, the journey stays where the Seam is.
Renew	Takes the age away: the journey back where the Seam is.

A SONG'S WORTH OF WEAR

Set the Seam at Worn and Age to a song's length, and record a long take: the sound is worn at the start, breaks down through the middle and is remade by the end, without your touching a thing.

The space, MIDI and the host

After the journey, three effects, in the order the sound passes through them: Kodama's drum echo, Shimo's airy reverb and Kumo's dark one. Each is the engine of its own Denki Digital instrument, with all its controls.



The Space page with all three on: Kodama's echo, Shimo and Kumo, each with its own switch and its own controls.

Click **Space** for the page. All three are off as Tsugime starts, and each program chooses its own. Each has its own **On** switch at the right of its title. The source sits in the middle, the Character's side and the Ring in stereo; the reverbs give it all their width.

THE ECHO	Kodama's magnetic drum echo, with its preamp drive. Echo, Repeat or Swell (Repeat as it starts); Sync, to the host's tempo, and beside it the note value it keeps, from a sixteenth to a whole bar, triplet and dotted too (a quarter as it starts; Speed rests while Sync is on); Head 1 to Head 4 (head 4 as it starts). Knobs: Speed, Feedback, Drive, Age; Wow, Crunch, Noise, Mix.
SHIMO	Shimo's reverb for clear, bright space. Air, Glass or Breath (Air as it starts). Knobs: Size, Decay, Pre-delay, Motion; Air, Bass, Width, Mix.

KUMO	Kumo's reverb that behaves like weather. Dark, Rise, Dream, Rain or Light (Dream as it starts), and Sustain, which freezes what it hears into a pad and holds it. Knobs: Decay, Filter, Depth, X; Stretch, Rate, Pan, Mix.

Every one of each effect's controls is a host parameter, named after its effect, as Echo Feedback or Shimo Decay, those not on the page too: each head's level and tone, Feedback Tone, Color, Bias, Flutter, Head Wear, Motor Stability, Output and HQ; Shimo's Sync, Low Cut, Diffusion and Ducking; Kumo's Width and Wave. Each starts where its own instrument starts. The controls do what they do in their own instruments, and their owner's manuals describe them in full: Kodama for the echo, Shimo and Kumo for the reverbs. On Tsugime's page, Shimo's knobs read in their own units, the echo's and Kumo's as a percentage of their travel.

The echo crossfades as it is switched on or off. Shimo and Kumo are switched as with their Trails on: switched off, what is ringing rings out, and a new sound passes dry. The echo's and Shimo's synced times follow your host's tempo. Kodama's preamp is oversampled, which takes 42 samples: Tsugime delays the way round the echo to match, so switching it never moves the sound in time.

> A FROZEN BED
>
> Kumo's Dream with Sustain on holds a frozen pad of whatever went in last. Sustain a chord the Ring has rung, then move the Seam and play over it.

Where it goes

Put Tsugime on an audio track, a return, or after an instrument on its track. It takes a mono or stereo input and mixes it to one channel, and it can run with no input at all, playing only its sampler. Its output is stereo, or mono on a mono track, the two sides mixed. To play it from a microphone, set the track to listen to its input, with its monitor on. Hosts list it as Tsugime FX.

Playing it from a MIDI track

Notes into Tsugime do two things: they play the sampler's sound, while **Sound** and **Keys** are chosen, and they set the chord Tsugime hears, while Chords is Notes, whichever the source. The on-screen keys do both as they are. To send notes from a MIDI keyboard or a MIDI clip, send a MIDI track to Tsugime's track:

1. In Ableton Live, add a MIDI track, and set its MIDI To to the track Tsugime is on. In the chooser under it, choose Tsugime FX.
2. Arm the MIDI track, or set its monitor to In, and play: or put a clip on it.
3. On Tsugime, click **Sound** and **Keys** to play the sampler; or set Chords to Notes for the Ring and the damage to follow your chords.

In Bitwig Studio, Reaper, FL Studio and Cubase, look for MIDI routing or MIDI sends to an effect on another track; where a host offers none, put Tsugime on an instrument track of its own and play it there. Your host's manual has the details.

MIDI and the host

CHANNELS	Tsugime plays from every MIDI channel.
NOTES	Note on and off, with velocity, to the sampler's eight voices (C3, note 60, plays the sound at its own pitch), and to the chord heard.
ALL NOTES OFF, ALL SOUND OFF	Stop every voice at once, and let go of the notes held.
TEMPO	Your host's tempo and position drive everything that keeps time: the Damage sequencer, the loop's Sync, the breakdowns' Sync, Fit, Kiri's and Kaminari's place through the link, the echo's and Shimo's synced times. The standalone runs at 120 BPM.
AUTOMATION	Every control, the space's included. Map a controller to a parameter in your host, or learn it on the panel (MIDI learn, below).
PROGRAMS	Your host sees the twelve factory programs and Init as Tsugime's program list.
LATENCY	216 samples at 48 kHz (the Character's side, about 3.6 ms, and Kodama's echo, 42 samples), reported always
TAIL	Tsugime tells the host its sound can ring on for 12 seconds after the input stops, so the host keeps it running for the Ring and the reverbs' tails.
THE PROJECT	Keeps every setting, the program or preset by name, the Edit page's steps and chord, the age, the sampler's sound itself (at 16 bits and the rate it was kept at, with its name), the MIDI controllers learned, the window's size and whether the keys show. Tsugime opens on the Main page.

MIDI learn

The knobs, keys and menus on Tsugime'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 Tsugime 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 Tsugime	Keeps the controllers learned now as the starting set for every Tsugime 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 Tsugime 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\Tsugime\midi-map.json` on Windows and `~/Library/Application Support/Denki Digital/Tsugime/midi-map.json` on a Mac.

Every knob, the Seam, and every button that sets one control can learn: the switches, the menus (the Character, Chords, Link, the Ring's tuning, Kick, Fit, Grain, the echo's note value) and the rows of choices. A row learns from any of its buttons, and the controller steps through them: Input and Sound, Cassette and VHS, the tape types, the sampler's rate, Keys and Drone, and the space's modes. A tape type learned changes the type alone; a click on one also chooses the cassette. Not learned: the Snap menu (Snap, Key and Scale in one), the S, E and L marks on the sampler's screen, the Damage sequencer's steps, the choir's chord, the buttons that act (Sample, Load, Capture, Crop, Resample and the like), and the host parameters with no control on the panel, as the space's that are not on its page: map a controller to those in your host.

MIDI learn only reads what Tsugime is sent: the notes still play the sampler and set the chord heard, All Notes Off still lets them go, and the sound is the same with it as without.

> HOSTS
>
> MIDI reaches Tsugime only when it is sent there, as its notes do (Playing it from a MIDI track, above): in Live, set a MIDI track's MIDI To to Tsugime's track, then to Tsugime FX; in the standalone, tick your controller under Active MIDI inputs in Audio/MIDI Settings. In Logic Pro, Tsugime takes MIDI too, through the MIDI side-chain menu in the header of its plugin window: choose there the software instrument track your controller plays, and select or arm that track. A knob your host has kept for itself (Logic's Controller Assignments, Live's MIDI Map) stays your host's: free it there, or learn another.

Factory programs

Twelve programs and Init, three for each use: a voice taken apart in key, drums wrecked on the grid, a pad worn over minutes, and a melody remade.

A program sets how the sound is damaged and leaves the sound itself, its key and the link as they are, so step through them over the same material. Played on the material each names, each sits within about 3 dB of the dry sound. Every one has In Key on, Ragged at 10 %, and the Seam somewhere along the journey: move it to hear the whole of each.

Voice

01 Copier Hymn

A spoken or sung line copied until a choir sings it back, in the key's sevenths. The Copier at 93 %, nearly remade; a chrome cassette; the Ring on the chord; now and then a hiccup; Shimo's Air round it.

02 Dial Tone Psalm

A voice down a failing phone line, its crackle and lost packets ringing as a drone of roots and fifths. The Modem at 60 %, near Broken, on a VHS tape; Broken Radio at 40 %; the Ring at 60 %, ringing long; Kodama's echo.

03 Ribbon Throat

A voice printed coarse, on few pins with the dots far apart and a thin ribbon, the crush ringing on the scale. The Printer at 45 %, just past Worn; Crushed at 30 %; the Ring tuned to the scale; Kumo's Dark, low in the mix.

Drums

04 Pressed Breaks

Drums squashed hard in the press, steel ringing on the roots, rolls quickening into a buzz at the end of the bar, swung. The Press at 58 %; a metal cassette; Stutter at 60 % in sixteenths with a little swing; breakdowns on the beat.

05 Brownout Kit

Drums through an overloaded transformer, the off-beats crushed, the strip light flickering. The Mains at 52 %; Crushed at 55 %; Width at 60 %; Kodama's echo in time.

06 Tape Stop Funeral

Drums on a worn cassette, the end of each bar slowing to a stop, in tune. The Tape at 55 %, Depth at 60 %, dropping out; Tape Stop at 70 % in eighths; Shimo's Glass.

Pad

07 Forty Winters

A pad worn as if by forty winters: the loop brings it round again, a generation older each time, and Age carries it towards the saw over about eighteen minutes of playing. The Tape at 30 %, nearly Worn, a chrome cassette wandering slowly; no Damage; the Ring on the chord, ringing eight seconds; Kumo's Dream.

08 Motor Choir Drift

A pad on a sagging, wobbling motor, the Ring on the scale ringing ten seconds; Age carries it towards the choir over about twenty minutes. The Motor at 50 %; a rare hiccup; Shimo's Glass, large and long.

09 Photocopied Snow

A pad copied and copied, toner falling like snow, the loop bringing each generation round again. The Copier at 40 % on a VHS tape, six copies deep; no Damage; Kumo's Rain.

Melody

10 Home Computer Choirboy

A melody sung back by the home computer's chip in the key, a little buzz in it, off-beats cut. The Chip at 100 %, remade, its clock at 1.79 MHz; Skip at 30 %; Kodama's echo repeating in time.

11 Saw Ghost

A melody remade by a detuned saw, the mains' wear faintly under it, steps now and then thrown backwards. The Mains at 92 %; the saw's second voice and its sub; Backspin at 20 %; Shimo's Air.

12 Dial-Up Lullaby

A melody down a slow phone line, remade by the chip, half buzz, off-beats cut. The Modem at 86 %; Skip at 35 %; Kodama's echo in time and Kumo's Light.

Init

13 Init

Clean: the one a new Tsugime opens on. Every control at its default: the Tape as the Character, the Seam at Clean, the tape unworn, the Ring and the tape's Wow at 0 % and the Damage sequencer on Hiccup at Resting (all yours to bring in), the loop, breakdowns, Age and the space off, the Edit page as it starts.

Ways to start

A VOICE	Copier Hymn for a choir of copies; Dial Tone Psalm to break it up; Ribbon Throat to grind it.
DRUMS	Pressed Breaks or Brownout Kit with your host playing; Tape Stop Funeral for the bar's end; Pattern on Wrecked and Chance up for chaos.
A PAD OR A DRONE	Forty Winters or Motor Choir Drift left to age; Photocopied Snow; or Freeze a moment of any of them.
A MELODY	Home Computer Choirboy, Saw Ghost or Dial-Up Lullaby; set the key to the song's first.
BUILDING YOUR OWN	Init, then a Character and the Seam; the Ring and its tuning; a Damage pattern and Chance; the tape; then the loop, Age and the space.

Programs and your presets

Tsugime 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.

The program's window sits in the header, between Tsugime's name and the page tabs: the program's number and name, with a star once you change it. Click the name for the program menu; the arrows at either end step through the sounds in turn: the factory programs, then your own, then any designer banks.

The program menu

Factory programs	Listed first, under Factory: the twelve, then Init, the one a new Tsugime opens on. Choosing one sets every control and the Edit page's steps and chord, and gives a new machine, as Reset does: no wear, an empty loop. Your changes to it are kept with the project until you choose another.
Your own	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.

What a program keeps, and what it leaves

A program or a preset holds how the sound is damaged: the Seam, the Character and its knobs, the Ring, the Damage sequencer and its steps, the tape, the Time page, the space, and the sampler's filter, Stretch, Grain and Fit. It leaves alone the sound itself and how it plays (the source, the rate, Keys or Drone, Loop, Rev, the S, E and L marks, Cross,

Trigger and Length), and the song's own: the key, the scale and the generators' link letter. So you can step through the programs over the same sound, in the same key. Your own presets are saved the same way: the sampler's sound is never in a preset, only in the project.

Reset

Reset, in the header, takes Tsugime back to Init's settings, clean, and gives it a new machine: no wear, the loop empty. It keeps the same things a program keeps: your sound and how it plays, the key, the scale and the link. It asks first: click it, and it reads Sure?; click again within three seconds to reset.

Where they live

Your presets are in `Documents/Denki Digital/Tsugime/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/Tsugime/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 `Tsugime-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.** Tsugime is under Denki Digital, listed as Tsugime FX. If it isn't there, ask your host to rescan its plugins.

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

Installing on a Mac

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

1. **Close your music software.**
2. Open `Tsugime-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.** Tsugime is under Denki Digital, listed as Tsugime FX: 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/Tsugime.vst3`
AUDIO UNIT	`/Library/Audio/Plug-Ins/Components/Tsugime.component`
STANDALONE	`/Applications/Denki Digital/Tsugime/Tsugime.app`
THIS MANUAL	`Tsugime Manual.pdf` beside the standalone, whichever parts you install, and on www.denkidigital.com, from Tsugime's page
YOUR PRESETS	`Documents/Denki Digital/Tsugime`
LICENCES	`Documents/Denki Digital/Licences`

The standalone

The standalone application puts Tsugime on your audio interface's input. Choose the device and its inputs, and a MIDI keyboard if you have one, from Options, then Audio/MIDI Settings..., at the top of its window. It starts with the input muted, and says Audio input is muted to avoid feedback loop: choose Unmute Input once you are on headphones, or sure your speakers can't reach the microphone. Everything that keeps time runs at 120 to the minute there.

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 header, 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, Tsugime 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 small square of corner marks at the right-hand end of the header, 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.

The keyboard glyph beside the window-size control shows or hides the on-screen keys. Without them the panel is 1240 by 640 points; with them, 708. Tsugime opens with them shown; on a laptop the panel opens a little smaller to make room for them. Whether they show is kept with the project.

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 Tsugime's device in Live's Device View, untick Auto-Scale Plug-In Window, then open the window again. Tsugime 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 Tsugime. 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**.

拾伍 TSUGIME

Technical

TYPE	A destruction effect, in key and in time, with a sampler
THE JOURNEY	One Seam: clean, worn, broken, remade, the level matched along it; Freeze; Age and Renew
CHARACTERS	Eight: Tape, Copier, Printer, Modem, Mains, Motor, Press, Chip, each with three colour knobs, its machine's settings and its remade voice's (saw, choir or chip)
IN KEY	Key and scale (eight scales); In Key; the chord heard from the key, the notes held, or Kiri's through the generators' link; the Ring: twelve tuned strings (roots and fifths, the chord, the scale), Ring and Decay
DAMAGE	Sixteen steps, 1/8 to 1/32 with swing: Repeat, Reverse, Stop, Crush, Drop, Pitch, Gate, each with a chance and an amount; eight patterns; Chance; on or between Kaminari's kick
SAMPLER	36, 18 or 9 kHz, 16-bit, up to 10 s; trigger and length; start, end, loop with crossfade, reverse; 8 voices from the keys, or a drone; Crop and Undo, Save, Drag, Resample; Stretch and Fit
TAPE	Cassette (Type 0, I, II, III, IV, wrong equalisation) or a VHS sound track; Depth, Wow, Rate, Dropout, Bias; the decay loop; breakdowns, free or on the beat
EFFECTS	Kodama's drum echo, Shimo's and Kumo's reverbs
FACTORY PROGRAMS	12, plus Init (it opens on Init: clean)
LATENCY	216 samples at 48 kHz (the machine's side and Kodama's echo), reported always
OUTPUT	Stereo
PANEL	1240 × 640 (708 with the keyboard), scalable from 60 to 160%
INPUT	Mono or stereo, mixed to one channel inside; or none, to play the sampler alone
MIDI	Every channel: notes and velocity, to the sampler and to the chord heard; All Notes Off and All Sound Off; MIDI learn on the panel's controls
SAMPLE RATE	Your session's own. The sampler keeps its sound at 36, 18 or 9 kHz and plays it back at your session's rate

TAIL	Reported to the host as 12 s
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

拾陸 TSUGIME

Notices

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

Using Tsugime 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 Tsugime works with.

継ぎ目

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。

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