CROSS-WAVE HYBRID SYNTHESIZER

Tasogare

黄昏 twilight

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Tasogare, from the first sound to the last setting.

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Welcome

Tasogare is a cross-wave hybrid synthesizer. Digital waves feed an analogue-style voice, as they did in the hybrid keyboards of the eighties, across three eras of sound and four layers.

Each layer is a complete voice. Three oscillators read waves from Tasogare's own memory of 104: single cycles, looped sounds, attacks, drums, and Scan Waves of 64 frames. They read them in one of three eras. **Grit** is the eight-bit chip, with its stepped pitch and its grain. **Glass** is the twelve-bit machine that followed, smoother and brighter. **Clean** is band-limited, with no grain at all. The oscillators go into a resonant analogue-style ladder filter, a pair of digital filters, or both, then to the final amplifier, DCA 4, under the fourth envelope.

Up to four layers sound at once, each with its own key range, velocity window and Patch Select state. Around them sit the effects, a pattern sequencer, an arpeggiator with a chord generator, and the Sample Forge, which turns a sound you drop on the panel into a wave from another decade.

The panel works the way those keyboards did: you choose a page, choose a field on the display with the button above or below it, and set it with the data slider. Every sound setting is also a host parameter, so it automates and saves with your project.

Five minutes with Tasogare

1. Put Tasogare on an instrument track. It opens on 01 Evening Tide: soft Glass saws on layer 1, and on layer 2 a Grit breath of air an octave up that swells in after.
2. Play some chords. The voice lamps at the top light in each layer's colour as the layers sound.
3. Click **Layer 2**, then turn **Cutoff** in the Performance row. It moves the filter of the layer you are editing, here the breath of air.
4. Click **MODES** in the voice diagram, then the button above ERA on the display. Move the data slider: layer 2 changes from Grit to Glass to Clean as you play.
5. Open the program menu, choose Showcase, then 02 Violet Hour, and click **OSC 1**. Hold a chord and watch the screen: it draws the wave as it plays, the choir drifting through its Scan Wave.
6. Drag a short WAV file onto the panel. The Forge page opens and the sound is forged into slot U1. Click **OSC 1**, choose WAVE, and pull the data slider right down: the first choices are your own slots, and you are playing your own sound.

> TIP
>
> The quickest way to shape a sound is the Performance row: Cutoff, Resonance, Attack and Release work on the layer you are editing, and need no page at all.

The panel



Tasogare on Evening Tide, editing layer 2's first oscillator, here on Scan Vowels.

1	**Program window**	The program's number and name, the layer and page you are editing, and the program's category. Click it for the program menu. Notes from the preset library and the importer show here in pale lavender for a few seconds.
2	**− and +**	The previous and next program.
3	**Voices** 32 lamps	One for each voice, lit in the colour of the layer it is playing: four shades of lavender, one for each layer.
4	**Data** Slider, ▲ and ▼	Sets the chosen field. The slider covers its whole range; the arrows step it. See Programming, below.
5	**Display and soft buttons** 2 lines of 40	Ten fields, five on each line. The button above or below a field chooses it.
6	**Screen**	A picture of what you are editing (the wave, the envelope, the filter's curve, the LFO, the key ranges, the Forge's sound), with the chosen field's full name and value. On an oscillator's page it follows the sound: see The OSC pages.

7	**Layers** Layer 1 to 4	Chooses the layer you edit. The lamp on each button shows whether that layer is on.
8	**The voice**	The layer as a diagram: OSC 1 to 3 into DCA 1 to 3, into the FILTER, into DCA 4, out to its bus. Each block is a page button. The path lights while the layer sounds.
9	**Modulation**	Page buttons for LFO 1 to 3, ENV 1 to 4, the MIXER and the MODES.
10	**Instrument** Layer, FX, Master, Forge	The pages for the layer's zones and outputs, the effects, the instrument's own settings and MIDI, and the Sample Forge.
11	**ARP and SEQ**	Show the arpeggiator's panel or the pattern sequencer's in the diagram's place. Click again to bring the diagram back.
12	**Performance** 9 knobs	Cutoff, Resonance, Attack, Release and Scan for the layer you are editing; Timbre, FX 1 Mix, FX 2 Level and Master for the whole instrument.
13	**Patch Select** A and B	Two buttons whose four states (neither, A, B, both) choose which layers sound. See Layers and the program.
14	**Keyboard** Five octaves	Click to play. The arrows at each end move it an octave.
15	**Keyboard glyph**	Hides the keyboard, or shows it again.
16	**Key and size**	The licence key, and the window-size control below it.

The Performance row

The first five knobs follow the layer you are editing: choose another layer and they move to its values. **Attack** and **Release** are envelope 4's first and last times (the layer's loudness); **Scan** is oscillator 1's scan position, for the Scan Waves. The last four belong to the instrument. Drag a knob up or down (hold Shift for fine steps), or use the mouse wheel; double-click it for its default.

Programming

Every setting is a field on a page. Choose the page with its button, choose the field with the soft button next to it, then set it with the data slider.

Pages and parts

Each block in the voice diagram, each modulation button and each instrument button opens its page on the display. A page holds ten fields, five on each line, each with a short label in dim characters and its value in bright ones. A page with more than ten fields has two or three parts: press its button again for the next part. The screen shows the page's

name and the part, as in L2 OSC 1 1/2.

Fields that belong to a layer (the oscillators, filters, envelopes and so on) always show the layer you are editing; click another layer button and the page shows that layer. The FX, MASTER and FORGE pages belong to the whole instrument.

Setting a value

Soft buttons	The buttons above and below the display choose the field next to them. The chosen field's value is underlined, its button lit.
Data slider	Sets the chosen field anywhere along its range, from bottom to top.
▲ and ▼	Step the chosen field: one step of a choice or a count, or a hundredth of a continuous range. Hold one and click the other, or right-click either, for the field's default.
On the display	Click a field to choose it. Drag up or down to change it (with Shift for fine steps), or use the mouse wheel over it. Double-click a field for its default.

Values on the display are short: levels and amounts from 0 to 100 (or −100 to +100), times in seconds (or MS under a tenth of a second), frequencies in hertz with K for thousands, notes by name. The screen spells the field out in full, as in L2 Osc 1 Wave: Scan Vowels. Notes are named with middle C as C3.

The pages

PAGE	PARTS	WHAT IT HOLDS
OSC 1 TO 3	2	The oscillator's wave, tuning, mode and pitch modulation; its scan position and wander
DCA 1 TO 3	1	The oscillator's level, on or off, start point and delay, and level modulation
FILTER	3	The analogue ladder; the digital pair; their modulation
DCA 4	1	The layer's level and pan, and their modulation
ENV 1 TO 4	2	The envelopes
LFO 1 TO 3	1	The LFOs

PAGE	PARTS	WHAT IT HOLDS
MIXER	1	The Mod Mixer, the noise source's rate, glide and bend
MODES	1	The layer's era and oscillator modes; the program's mono, glide, restrike, bend and level
LAYER	2	The layer's key range, velocity window, transpose, Patch Select, priority and outputs
FX	3	FX 1, FX 2 and the reverb
MASTER	2	Voices, master level, limiter, Timbre, controllers, Patch Select; program change and MIDI out
FORGE	2	The Sample Forge

Layers and the program

A program is up to four layers. A key sounds every layer that reaches it, so a three-layer note takes three voices.



The LAYER page for layer 2, its key range from C3 up. The screen draws all four layers' ranges across the keyboard, solid for a layer that is on.

The LAYER page

ON
On or off

Whether the layer plays. Layer 1 is on in a new program, the others off.

KLO, KHI
C-2 to G8

The lowest and highest key the layer plays. Split the keyboard by giving layers ranges side by side; overlap them to stack.

VLO, VHI
1 to 127

The softest and hardest velocity the layer plays: a velocity switch, or a layer that joins only when you dig in.

TRAN
±24 semitones

Transposes the layer.

P00, PA, PB, PAB
On or off

The Patch Select states the layer sounds in: neither button down, A only, B only, or both.

PRIO
Low, Medium, High

The layer's priority when voices run out.

BUS DRY, FX1, FX2	The effects bus the layer plays into. The diagram's OUT box shows it.
OUT Main, Out 2 to Out 5	Sends the layer to one of Tasogare's extra outputs instead, dry. See MIDI, the host and program dumps.

Patch Select

The **A** and **B** buttons make four states. Each layer sounds only in the states you tick for it on the LAYER page, so one program can hold four arrangements of its layers and you can move between them as you play. The state is read as each note starts: a note already sounding keeps its layers when you change it. For instance: a pad in every state, A adding bells, B a low drone, and both together a choir as well.

Patch Select follows MIDI too: controllers 80 and 81 by default, down at 64 and over. A button is down while either the panel or its controller holds it. Patch Select is yours as the player: choosing a program leaves the buttons as they are.

The MODES page

ERA Grit, Glass, Clean	The layer's era. See The voice.
SYNC On or off	Oscillator 2 restarts each time oscillator 1 completes a cycle.
AM On or off	Oscillator 1 sets oscillator 2's level, in place of DCA 2.
RSTR On or off	On, each note starts the oscillators from their start. Off, their cycles run on from where they were (a sampled sound still starts from its beginning).
MONO On or off	The program plays one voice a layer, last-note priority. A key pressed while another is held moves the note there legato, without restarting it; let go and the note returns to the key still held.
GLMD Off, Always, Legato	When notes glide (at each layer's GLID time, on the MIXER page). Always: every note glides from where its voice last was, polyphonically when not mono. Legato: only notes played legato.
RSTK On or off	Restrike. On, a key struck again while its note still sounds takes the same voice. Off, it takes another, and the old note rings on underneath.
BNDM All, Held	All: pitch bend reaches every sounding note. Held: a released note keeps the bend it had.
GAIN ±24 dB	The program's level. The factory programs are levelled with it; use it, not Master, to balance your own.

The first four belong to the layer you are editing; the second line belongs to the whole program.

Voices

VOIC on the MASTER page sets the pool: Vintage, eight voices, the count of the mid-eighties machines, or Modern, thirty-two (the default). When every voice is busy, a new note takes one: a released voice before a held one, the oldest first, and never one from a layer of higher priority, so a low-priority layer's note may go unplayed rather than cut a high one. A taken voice fades over 3 ms as the new note starts.

> TIP
>
> Give a pad layer Low priority and a lead or bass High: when voices run short, the pad thins and the line you are playing never drops.

The voice

A layer's voice, as the diagram draws it: three oscillators, each on a wave and each with its own level (DCA 1 to 3), into the filters, into DCA 4. Around them, the envelopes, LFOs and the Mod Mixer that move it all.

The three eras

ERA	HOW IT SOUNDS
GRIT	The eight-bit chip: waves cut to 8 bits, read without smoothing at 38.46 kHz, the pitch in the chip's coarse steps, the levels in 256 steps. High notes alias and every wave has a grain. Its control voltages step too: the filter, the resonance, DCA 4 and the pan move in 256 steps, updated every 3 ms, so a slow sweep can be heard stepping.
GLASS	The twelve-bit machine that followed: 12 bits, read with a linear blend at 29.76 kHz, smooth levels. Clearer and brighter, still with a machine's edge.
CLEAN	Band-limited, read with care at the voice's own rate. No aliasing and no grain: the waves as they are.

The era is the layer's (ERA on the MODES page), so a Grit layer can sit under a Glass one in the same program.

The OSC pages

WAVE U1 to U16, then 104 waves	The wave: one of your sixteen Forge slots, or a factory wave. The OSC button in the diagram shows it, and the screen draws it (below).
OCT −3 to +5 octaves	The oscillator's octave.
SEMI ±12 semitones	Its transposition in semitones.
FINE ±100 cents	Fine tuning. Two oscillators a few cents apart beat against each other.

MODE Normal, Once, Chain	Normal plays the wave as it is: a cycle or a loop repeats, an attack plays once. Once plays any wave through a single time. Chain plays it once, then starts the next oscillator, which waits silent until then: an attack handing over to a body.
PM1, AMT, PM2, AMT Source, ±100	Two pitch modulation slots. At 100 a full-scale source bends the pitch by 24 semitones.
REV On or off	Plays the wave backwards.
SCAN 0 to 63	Part 2. A Scan Wave's frame: which of its 64 cycles plays. In Grit it steps from frame to frame; in Glass and Clean it blends between them.
SMOD, SAMT Source, ±100	A slot that moves the scan position: at 100, across all 63 frames.
WNDR 0 to 100	Wander (Grit and Glass): the oscillator reads its wave from further along the memory, a whole page at a time, as a chip given the wrong address would. A little is grit; a lot is another sound altogether.
WMOD, WAMT Source, ±100	A slot that moves the wander.

The screen follows the sound. On an OSC or DCA page, while the layer you are editing plays, the screen draws what that oscillator of its newest note is playing: a Scan Wave's frame as its modulation moves it (blending from frame to frame in Glass and Clean, stepping in Grit), the wave moved along by Wander, and a sampled sound's playhead running along it. When nothing plays, it draws the wave as you have set it.

The DCA 1 to 3 pages

LEVL 0 to 100	The oscillator's level. Oscillator 1 starts at 80 in a new layer.
ON On or off	Whether the oscillator plays. An oscillator that is off is dimmed in the diagram.
STRT 0 to 100	Where it starts: a point into a sampled sound, or a phase of a cycle.
DLY 0 to 2 s	Silence before it starts.
DKEY On or off	Holds the oscillator silent until you release the key: a sound for the note's end.

LM1, AMT, LM2, AMT Source, ±100	Two level modulation slots.

Sync and AM

Both pair oscillators 1 and 2, and are set on the MODES page. With **SYNC**, oscillator 2 restarts whenever oscillator 1 completes a cycle; sweep oscillator 2's pitch for the classic tearing sound, and set oscillator 1's level to 0 if you want only the result. With **AM**, oscillator 1's wave becomes oscillator 2's level: tune oscillator 1 to an interval above and you get bells and metal. Oscillator 1 still sounds at its own level, so turn it down to hear only the modulation.

The waves

All 104 are Tasogare's own, made by its code. The vocal, string and brass cycles are voiced again zone by zone, so their formants stay where they belong across the keyboard. A wave in Grit or Glass also changes its cycle as you play higher, as the old key maps did, so high notes are simpler.

KIND	WAVES
CYCLES (48)	Saw, Square, Pulse 25, Pulse 10, Triangle, Sine, Organ, Octaves, Fifths, Formant Ah, Formant Oh, Digital, Grit, Glint, Reed, Brass, Soft Saw, Buzz, Pulse 5, Hollow, Clarinet, Oboe, Formant Ee, Formant Oo, Formant Eh, Choir, Strings, Piano, E Piano, Bell Cycle, Clav, Bass, Warm Square, Harmonic 3, Harmonic 5, Bright Organ, Organ Perc, Organ Flute, Reed Bright, Grit Saw, Grit Steps, Digital 2, Digital 3, Prime, Alien, Nasal, Fold, Vox Hum
LOOPS (8)	Breath, Metal, Steam, Air Voice, Glass Loop, Chimes, Wind, Choir Loop. Each plays its attack once, then loops.
ATTACKS (16)	Pluck, Mallet, Chiff, Click, Pick, Hammer, Bow, Plink, Thump, Slap, Tine, Blat, Puff, Key Click, Marimba, Glass Hit. They play once: chain one into a cycle for a sound with a real start.
DRUMS (12)	Kick, Kick Deep, Snare, Snare Tight, Tom Low, Tom High, Hat Closed, Hat Open, Clap, Rim, Cowbell, Shaker
KITS (4)	Kit Analog, Kit Tight, Kit Metal, Kit Lo-Fi: a drum on each eight keys, from C0 up
SCAN WAVES (16)	Scan Sweep, Scan Vowels, Scan PWM, Scan Sync, Scan Formant, Scan Organ, Scan Harmonic, Scan FM, Scan Bell, Scan Comb, Scan Grit, Scan Fold, Scan Spectra, Scan Resonant, Scan Noise, Scan Choir: 64 frames each, chosen by SCAN

> TIP
>
> Chain is the heart of the cross-wave sound. Put an attack such as Pick, Hammer or Bow on oscillator 1 in Chain mode, and a cycle or a loop on oscillator 2: the note speaks with the attack, then sustains on the body.

Into the filters

The three oscillators, mixed, go through the filters and then the final amplifier, DCA 4.

The two filters

The **analogue** filter is a 24 dB-an-octave resonant low-pass ladder in the manner of the classic analogue filter chips. Its input overloads softly, so three oscillators at full level drive it into a warm squash. As the resonance rises the level holds up rather than thinning, and from about 87 on it self-oscillates into a steady sine at the cutoff. In Grit each voice's filter sits a few cents from its neighbours, and a fast sweep thumps, as the old voice boards did.

The **digital** pair has no resonance. Filter 1 is a 2- or 3-pole low-pass; filter 2 takes the poles that are left, as a low-pass or a high-pass at its own cutoff, so together they always make four. A low-pass with a high-pass is a band.

MODE chooses Analogue, Digital, or Both: the digital pair into the ladder. The screen draws the curve of whatever the mode puts in the path.

The FILTER page

MODE ANA, DIG, BOTH	Analogue, Digital, or Both.
CUT 20 Hz to 20 kHz	The analogue cutoff. 632 Hz sits at the middle of its travel.
RES 0 to 100	The resonance. Self-oscillates from about 87.
KEY 0 to 100	Key tracking around middle C: at 100 the cutoff follows the keyboard an octave per octave. 50 in a new layer.
CM1, AMT, CM2, AMT Source, ±100	Two cutoff modulation slots. At 100 a full-scale source moves the cutoff 8 octaves.
DF1 LP2, LP3	Part 2. Digital filter 1: a 2-pole or a 3-pole low-pass.
D1HZ 20 Hz to 20 kHz	Its cutoff.
DF2 LOW, HIGH	Digital filter 2: low-pass or high-pass, with the poles filter 1 leaves.

D2HZ 20 Hz to 20 kHz	Its cutoff.
DKEY 0 to 100	Key tracking for both digital filters.
RMOD, AMT Source, ±100	A resonance modulation slot.
D1MD, AMT; D2MD, AMT Source, ±100	A slot for each digital cutoff (D2MD on part 3), 8 octaves at 100.

DCA 4

DCA 4 is the layer's final amplifier: envelope 4 times the layer's level. In Grit it follows the voice chip's curve, and the pan is the old linear law; in Glass and Clean both are smooth.

LEVL 0 to 100	The layer's level. 80 in a new layer.
PAN −100 to +100	Left to right.
PMOD, AMT Source, ±100	Moves the pan: an LFO here is an autopan.
AMOD, AMT Source, ±100	Adds to envelope 4's control of the level: an LFO here is a tremolo.

> GRIT
> For a resonant sweep you can hear stepping, put the layer in Grit and give the cutoff a slow LFO. For a smooth one, Glass or Clean.

Modulation

There is no hidden matrix. Each destination has its own slots, and each slot is a source and an amount from −100 to +100.

Oscillator pitch and level, and the analogue cutoff, have two slots each; the scan position, wander, resonance, each digital cutoff, the pan, DCA 4 and each LFO's depth have one. A destination's slots add together.

The sources

LFO 1 to 3	The layer's three LFOs.

Env 1 to 4	The four envelopes. Envelope 4 is also the layer's loudness.
Velocity, Velocity X	How hard the key was struck; Velocity X is the same on a steep curve (its cube), so only hard playing counts.
Key, Key +/-	Where the note is: Key from 0 at the bottom of the MIDI range to 1 at the top; Key +/- from −1 to +1 around E3.
Wheel, Pedal, Controller	The modulation wheel (CC 1), a foot controller (CC 4), and the controller set on the MASTER page (CC 16 by default).
Pressure	Aftertouch: each key's own (poly pressure) where your keyboard sends it, otherwise the channel's.
Timbre	The Timbre knob, or CC 71: whichever moved last.
Mixer	The Mod Mixer's result.
Noise	A new random value at the rate set on the MIXER page.
Constant	Always full: a fixed offset.
Seq	The pattern sequencer's step value for this layer's track.

Envelopes

The four envelopes take the shape of the mid-eighties hybrids. From the start of a note the envelope moves to level 1 in time 1, to level 2 in time 2, and to level 3, the sustain, in time 3. When you let go it falls to zero in time 4. These are times, not rates: a stage takes its time however far it moves. Levels can be negative, so an envelope can bend a pitch down or close a filter.

L1, L2, L3 −100 to +100	The three levels; L3 is the sustain.
T1 to T4 0 to 20 s	The four times. T4 is the release.
MODE NORM, CMPL, RPT, 1SHT	Normal. Complete: a release waits until the sustain is reached, so the decays always play out. Repeat: while the key is held, times 1 to 3 loop. One Shot: ignores the key and runs straight through to the release, for percussion.
REL2 On or off	Second release: the release drops to an eighth of the level, then a slow three-second fade takes it to nothing, like a room's tail.

RSTR On or off	For the whole layer: on, a note starts every envelope from zero; off, a restruck note's envelopes carry on from where they are.
VLEV 0 to 100	Part 2. How far soft notes lower the levels.
VCRV On or off	Puts that on a curve (the square of the velocity), so the levels fall away faster as you play more softly.
VATK 0 to 100	How far hard notes shorten time 1.
KTIM 0 to 100	Key times: at 100, times 2 and 3 halve with each octave above middle C and double with each below.

LFOs

WAVE 8 shapes	Triangle, Saw, Square (positive only), Noise (a new random value each cycle), Sine, Sine-Triangle, Positive Sine, Positive Triangle.
RATE 0.02 Hz to 30 Hz	The speed, when SYNC is Free.
SYNC Free, 8 Bars to 1/64	A cycle in time with the host's tempo, in beat divisions (dotted and triplet ones included).
RSET On or off	On, each note starts the wave from its beginning.
HUMN On or off	Humanise: the rate wanders a little from cycle to cycle.
L1, L2, DLY 0 to 100; 0 to 10 s	The depth moves from L1 to L2 over the delay: set L1 to 0 for a vibrato that fades in.
DMOD, AMT Source, ±100	A slot on the depth. With the wheel here and L2 at 0, the wheel brings the LFO in.

The MIXER page

The Mod Mixer makes a new source from two: **SRCA** plus **SRCB** scaled by **SCAL** (0.1 to 8) and bent by **SHAP**, held within −1 and +1. The shapes: Linear, Convex, Concave, S-Curve, Inverted, Absolute, Positive, Steps 2 to Steps 32 (quantised), Smooth and Smoother (lagged, a slew), Fold and Wrap. The screen draws the shape. An LFO through Steps 8, sent to pitch, makes a stepped pattern; velocity through Concave reaches the top only at the hardest notes.

SRCA, SRCB Sources	The two inputs.
SCAL 0.1 to 8	B's scale.
SHAP 16 shapes	B's shape.
NOIS 0.1 Hz to 50 Hz	The rate of the Noise source. 8 Hz in a new layer.
GLID 0 to 5 s	The layer's glide time: every glide takes this long, however far it goes. See GLMD on the MODES page.
BEND 0 to 24 semitones	The layer's pitch-bend range. 2 in a new layer.

The sources for every slot: Off, LFO 1 to 3, Env 1 to 4, Velocity, Velocity X, Key, Key +/-, Wheel, Pedal, Controller, Pressure, Timbre, Mixer, Noise, Constant, Seq.

> HABIT
>
> The factory programs keep a habit you may find useful: envelope 4 is the loudness, envelope 2 the filter, and LFO 1 carries the vibrato that the wheel brings in.

Effects

Each layer plays into one of three buses: Dry, FX 1 or FX 2. A reverb takes a send from all three.



The first part of the FX page: FX 1 on the Rotary.

Choose a layer's bus with **BUS** on its LAYER page. The **Dry** bus goes straight to the output. **FX 1** runs through a modulation effect; **FX 2** through a tempo echo. The reverb is fed from each bus by its own send, after that bus's effect. The effects belong to the program: choosing a program sets them.

FX 1

FX1 Off, Chorus, Ensemble, Flanger, Rotary, Dirty Rotary	Chorus, Ensemble and Flanger are bucket-brigade effects, warm and a little dark. The Rotary is a rotating speaker: a horn and a drum spinning at their own speeds, heard by two microphones. Dirty Rotary drives a valve-like stage into it first.
RATE 0.05 Hz to 10 Hz	The chorus, ensemble or flanger's speed.
DPTH 0 to 100	How deep the effect sweeps (for the Rotary, how far the rotors swing).
MIX 0 to 100	The effect against the bus's dry sound. Also the Performance row's FX 1 Mix knob.

FB −100 to +100	The flanger's feedback.
DRIV 0 to 100	The drive into the Dirty Rotary.
FAST On or off	The Rotary's speed, Slow or Fast. Switch it and the light horn speeds up in about half a second, the heavy drum over two and a half.
TO 2 On or off	FX 1's sound goes on into the echo as well, so a layer can go chorus, echo, reverb.

FX 2, the echo

DTIM 8 Bars to 1/64	Part 2. The delay time in beat divisions of the host's tempo, up to 4 seconds.
DMOD Stereo, Ping-Pong	Ping-Pong throws the repeats from side to side.
FB 0 to 95	Feedback: how many repeats. Each repeat is darker and softly saturated, so they never run away.
TONE 500 Hz to 16 kHz	The repeats' brightness.
LEVL 0 to 100	The echoes' level. Also the Performance row's FX 2 Level knob.

The reverb

RDRY, RFX1, RFX2 0 to 100	The sends from the Dry, FX 1 and FX 2 buses.
SIZE 0 to 100	The space's size, and the length of its tail. For Gated, how long the gate holds open (150 to 500 ms).
RTON 0 to 100	The tail's brightness.
RLEV 0 to 100	Part 3. The tail's level.

TYPE Hall, Plate, Room, Gated, Lo-Fi	Hall: a smooth, wide hall. Plate: dense and bright. Room: early reflections and a short, close tail. Gated: a dense plate cut off sharply once the sound stops. Lo-Fi: a small digital room on a 12-bit grid at a low rate, from the Grit era.
PRE 0 to 250 ms	Pre-delay: a gap before the tail begins.

Changing FX 1's unit or the reverb's type fades the old one out first, so nothing clicks.

The output

After the effects come the master level and a limiter, both on the MASTER page and both yours rather than the program's. **MSTR** runs from −60 dB to +6 dB (the Performance row's Master knob). **LIM** switches the limiter, on in a new instance, and **CEIL** sets the most the output may reach, from −12 dB to 0 dB, −0.5 dB at first.

The Sample Forge

Drop a sound on the panel and it becomes one of Tasogare's own waves, as the sampling keyboards of the eighties took sounds in: at a machine's rate, at a machine's bit depth, its pitch found and its loop smoothed.



The FORGE page, with a plucked sound forged into slot 1. The screen draws the sound and its loop points.

Forging a sound

1. Click **FORGE**. Choose SLOT and set the slot, U1 to U16, with the data slider or the arrows.
2. Set how it is to be made: the rate, the bits, and what to make (a one-shot, a loop or a Scan Wave).
3. Drag a sound file onto the panel, anywhere, or choose LOAD to pick one. Drop several at once and they become a multisample.
4. On any OSC page, choose WAVE and choose the slot: U1 to U16 come first in the list, before the factory waves. The oscillator plays your sound.

Tasogare reads WAV, AIFF, FLAC and Ogg Vorbis files, mixed down to mono. Samples from Ableton's packs are the exception: they look like AIFF files, but their audio is in a protected encoding only Live plays. The Forge says Ableton pack file: in Live's Arrangement View, select the clip and consolidate it (Ctrl+J, Cmd+J on a Mac; it works in the Arrangement only), or in Session View right-click it and choose Crop Sample, then drop the new file instead. A sound may be up to 30 seconds long (a longer one is trimmed, and the screen says so). The sixteen slots share 64 MB; a slot that would pass it is refused, with the reason.

The FORGE page

SLOT U1 to U16	The slot the next sound goes into. The screen shows its name, or empty.
RATE 19.2, 29.76, 31.25, 38.46, 44.1 kHz	The rate the sound is resampled to. Lower is darker and grainier. 31.25 kHz at first.
BITS 8, 12, 16	The bit depth: 8 is coarse and noisy, 12 has a machine's edge, 16 is clean. 12 at first.
MAKE 1SHT, LOOP, SCAN	A one-shot plays once. A loop plays its start, then loops. A Scan Wave is 64 single cycles taken evenly across the sound, for SCAN to travel through.
AA On or off	Anti-alias. On, the sound is band-limited for its new rate. Off, it folds over as a cheap converter's did: harsher and metallic.
ROOT AUTO, or a note	The sound's pitch: found in the sound, or the key you give. A sound with no clear pitch takes the key you give (C3 if you leave it on AUTO), and the screen says so.
LOOP AUTO, NONE	AUTO finds a loop in the sound's sustaining part and smooths the join; NONE plays it once.
DRIV 0 to 100	Drives the sound into a soft clip on the way in, as a hot front end.
NORM On or off	Normalises the sound's level. On at first.
LOAD GO	Opens a file chooser. Choose several files for a multisample.
REV On or off	Part 2. Reverses the sound before it is forged.
XFAD 0 to 500 ms	The loop's crossfade. 50 ms at first.
DITH On or off	Adds a little dither before the bits are cut: smoother fades, a faint hiss.
CLR GO	Clears the slot. Press it twice within three seconds: the first press only asks.

These settings apply to the next sound you forge; a slot keeps the sound it was made with. A note already playing a slot moves to the new sound when you forge into it, and an empty slot is silent.

Multisamples

Forge several sounds into one slot at once and each eight-key zone of the keyboard plays the sound whose root is nearest. A few notes of an instrument, a semitone or an octave apart, become one playable wave.

Where your sounds live

The slots are saved with your project, so a project opens with its sounds. A preset that uses a slot carries the sound inside the preset file. The slots belong to the instance: another instance of Tasogare has sixteen of its own.

> SCAN
>
> Forge a sung vowel or a held chord as a Scan Wave, then give SMOD an LFO or an envelope: the sound travels through itself.

The sequencers

Two ways to make a note into many: the arpeggiator with its chord generator, which plays what you hold, and a four-track pattern sequencer, one track for each layer. Both belong to the program.

The pattern sequencer



The pattern sequencer with a pattern of four tracks: a Grit line on track 1, drums on tracks 2 and 3.

Click **SEQ** and the sequencer's panel takes the diagram's place. Four tracks of up to sixteen steps; track 1 plays layer 1, track 2 layer 2, and so on. A track's notes go into its layer whatever the layer's key range and Patch Select, as long as the layer is on, and they are its own: your keys never cut them off, nor they yours.

MODE Off, Host, Key, Free	Host: runs while your host plays, on its beat grid, a bar starting at step 1; a stop or a jump ends the notes. The standalone has no host: its play button, above the tempo box, is the transport. Key: a key starts the pattern from step 1 and transposes it from middle C, and the pattern stops when you let go; the keys themselves are not heard. Free: runs all the time at the host's tempo.
RATE 8 Bars to 1/64	A step's length. 1/16 at first.
SWING 0 to 75 %	Delays every second step by up to three quarters of a step.

ON On or off	The chosen track's switch.
LENGTH 1 to 16	The track's length. Tracks of different lengths drift against each other.
TRANSPOSE ±24 semitones	Moves the track's notes.
GATE 2 to 100 %	How much of a step a note holds. At 100 % notes tie: on a mono program, they slide legato.
SPEED Half, Normal, Double	The track at half or twice the pattern's rate.

These small windows change with a drag up or down or the mouse wheel; a click on a choice opens its list, and a double-click sets the default.

In Host mode, start your host, or the standalone's play button, and the pattern runs on its own. Untick every Patch Select state (P00 to PAB) on a layer and it is the pattern's alone: your keys play the other layers over it, and never reach that one.

Steps

The **EDIT** keys choose what the grid shows and what a drag changes:

NOTE	Each step's note, by name. A cut corner marks a step with a chance under 100 %; small ticks along the top show its ratchets.
VEL 1 to 127	The step's velocity.
CHNC 0 to 100 %	The chance the step plays. It is rolled afresh each time round.
RTCH 1 to 4	Ratchets: the step plays its note this many times, quickly, in its time.
VAL 0 to 1	A value sent to the track's layer as the Seq modulation source, from that step on, whether the step plays or rests. Route Seq to a cutoff or a scan position for a line of movement under the notes.

Click a step to turn it on or off. Drag it up or down to change the lane's value; in NOTE, Shift-drag or drag with the right button for the velocity. The wheel makes small changes, and a double-click sets the lane's default (in NOTE, middle C at velocity 100). Steps past the track's length are dimmed, and the step playing is outlined.

Click a track's name (T1 to T4) to choose it. Right-click the name for Copy, Paste, Clear, Rotate Left and Rotate Right.

REC records steps from the keyboard: each key you play goes into the chosen track's next step, outlined in pale lavender, at the velocity you played. **REST** writes a rest and moves on.

The arpeggiator and chords



The arpeggiator's panel: its settings and the chord generator on the left, the sixteen-step pattern on the right.

Click **ARP**. The chord generator comes first: it turns each key into a chord. The arpeggiator then plays the held notes, a step at a time. Either works without the other: with the arpeggiator off, the chords play as you hold them.

PRESET	Patterns ready to play, in Classical, Electronic, Progressive, IDM and Ambient families. A preset sets the arpeggiator and the chord generator together, but leaves the key alone.
ARP On or off	Switches the arpeggiator.
MODE Up, Down, Up-Down, Played, Random, Chord, Converge, Thumb, Walk	The order of the notes. Converge plays from the outside in; Thumb returns to the lowest note between each of the others; Walk steps up or down the list at random.
RATE 1/4 to 1/32	The step's length, dotted and triplet values included.
OCTAVES 1 to 4	How many octaves the pattern climbs.
SWING 50 to 75 %	Pushes every second step late.

CHANCE 0 to 100 %	Each step (but the first) plays only this often.
LOOSE 0 to 100 %	Lets each hit fall a little late and a little softer, at random.
HOLD On or off	Keeps the notes playing after you let go.
CHORD Off, Chord, Scale	Chord plays one chord TYPE on every key (twenty, from Major to Cluster). Scale plays the chord that belongs to each key in a KEY and SCALE, stacked to a triad, seventh or ninth by SIZE.
VOICING, INV Close, Open, Wide; 0 to 3	Open raises every second note an octave; Wide adds the root an octave below. Inversion lifts the lowest notes an octave.

In the pattern, drag across the **VEL** bars to draw velocities; right-click a bar to make the step a rest, or bring it back. Click **NOTE** to give a step a chord tone, 1 to 8 (or Auto, the mode's next note), and **OCT** to shift it by up to two octaves; right-click steps back through them, and the wheel works too. Click **GATE** for Short, Half, Long or Tie, and **RPT** for one to four repeats. Click a step's number to make it the last.

While your host plays, the steps sit on its grid. Stopped, the arpeggiator runs at the host's tempo from the first key you press.

> TIP
>
> Both sequencers can play other instruments as well as Tasogare: see MIDI out, in the next section.

MIDI, the host and program dumps

What Tasogare listens to

Tasogare plays notes on every MIDI channel.

MESSAGE	WHAT IT DOES
NOTES AND VELOCITY	Through the chord generator and the arpeggiator, to the layers. Velocity is a modulation source, and chooses layers by their velocity windows.
PITCH BEND	Each layer by its own BEND range (2 semitones in a new layer), all notes or held ones (BNDM).
CC 1, MODULATION WHEEL	The Wheel source.
CC 4, FOOT CONTROLLER	The Pedal source.
CC 64, SUSTAIN	Holds released notes.
CC 71	Timbre: the Timbre source, and the Timbre knob.
CC 16 (CTLC)	The Controller source. Choose another number on the MASTER page.
CC 80 AND 81 (PACC, PBCC)	Patch Select A and B: down at 64 and over.
AFTERTOUCH	Channel pressure, or each key's own (poly pressure), as the Pressure source.
PROGRAM CHANGE	Chooses a program, if PC is on (below).
ALL NOTES OFF, ALL SOUND OFF	Act at the exact sample they arrive.
A CONTROLLER YOU HAVE LEARNED	Moves the control it is learned onto, and goes on doing whatever else it does (MIDI learn, below).

The MASTER page

VOIC Vintage (8), Modern (32)	The voice pool.

MSTR −60 dB to +6 dB	The master level.
LIM, CEIL On or off; −12 dB to 0 dB	The output limiter and its ceiling.
TMBR 0 to 100	Timbre, as the knob.
CTLC, PACC, PBCC CC 0 to 119	The controller numbers for the Controller source and Patch Select A and B.
PS A, PS B On or off	Patch Select A and B, as the buttons.
PC Off, Factory, Imported	Part 2. What a MIDI program change chooses: nothing, a factory program, or one of your imported programs. Off at first.
PCCH Omni, 1 to 16	The channel program changes are taken from.
KOUT, KCH On or off; 1 to 16	Sends the notes you play, after the chord generator and the arpeggiator, out of Tasogare on this channel.
SOUT, SCH On or off; 1 to 16	Sends the pattern sequencer's notes out: track 1 on this channel, track 2 on the next, and so on.
VCC 0 to 119	Sends the steps' values as this controller on each track's channel. 0 sends none.
LOCL On or off	Local. Off, what goes out is not played by Tasogare itself, so it plays only the instruments you send it to.
THRU On or off	Passes the MIDI coming in on to the output.

Everything on this page is yours as the player: choosing a program leaves it alone.

Program change

With **PC** on Factory, program change 1 chooses program 01, 2 chooses 02, and so on (some hosts count from 0: then 0 chooses 01). The change happens at the exact sample it arrives: the voices stop there and the new program plays from the next note, so a sequence can change sound on the beat. Your host's own program list holds the factory programs too.

MIDI out

To play another instrument from Tasogare's arpeggiator or sequencer, switch on **KOUT** or **SOUT**, then route Tasogare's MIDI output to that instrument's track in your host. Hosts do this in different ways, and some need a plug-in's MIDI output enabled first; your host's manual has the details. Switching a setting off, changing its channel, a program change or a stop ends every note sent, so nothing hangs.

Outputs

Besides its main stereo pair, Tasogare has four more stereo outputs, Out 2 to Out 5, off until you enable them in your host. Set a layer's **OUT**, on the second part of its LAYER page, and that layer leaves through its own pair, dry (without the effects), at the master level and in time with the main pair. A layer sent to an output your host has not enabled plays through the main pair instead. Each layer's output is yours, not the program's.

The main output also works in mono.

Program dumps

Tasogare reads `.syx` program dumps from the eighties' eight-voice cross-wave keyboards (a single program or a bank of forty), and from their later six-voice successors with sampled waves (a single program or a bank of sixty), any number in one file. Nothing from those instruments comes with Tasogare; the importer reads files you own.

1. Drag the `.syx` files onto the panel, or choose Import SysEx… from the program menu.
2. The program window shows what was found. The first new program loads, and the rest are under Imported in the program menu, up to 256 in all.
3. While an imported program plays, − and + step through the imported ones.

Each program is converted into Tasogare's own: the Grit era and the analogue filter, its waves the nearest of Tasogare's in character, its envelopes, LFOs, modes and modulation carried across. A program's layer and split partners, when the file holds them, become layers 2 to 4. Each converted program is levelled like the factory ones. The imported programs are kept with your project; Clear Imported empties the list.

The later keyboards' programs come in as starting points for your own sounds rather than copies. Their sound rests on sampled waves Tasogare does not have, so each wave becomes the nearest of Tasogare's own in character, in the Glass era. Everything else is carried across: each program's voices become layers and oscillators (voices that share their settings share a layer), with their envelopes, the digital filter pair, LFO, mod mixer, patch selects, key zones, velocity windows, priorities and effect. Play one, reshape it, then save it as your own preset.

The other way, the two Export Layer items in the program menu write the layer you are editing as a single program dump, for one keyboard or the other. Then a message lists what the original cannot do and was left out or changed: the Glass and Clean eras, the digital filters, scan positions and so on.

Latency and automation

Tasogare reports a latency of 87 samples at 48 kHz (about 1.8 ms) to your host, which makes up for it. Every setting but the Forge page's is a host parameter, so it can be automated, each step of the pattern included: map a controller to one in your host, or learn it on the panel (MIDI learn, below). The Forge's settings belong to the panel; the sounds it

makes are saved with the project, as are the MIDI controllers learned.

MIDI learn

The knobs, keys and menus on Tasogare'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 Tasogare 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 Tasogare	Keeps the controllers learned now as the starting set for every Tasogare 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 Tasogare had MIDI learn opens with none. A learned controller still reaches Tasogare as before: learn the mod wheel (CC1) onto a knob and it turns the knob and goes on being the mod wheel. Notes, pitch bend, aftertouch, bank select and the like are never learned.

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

So far MIDI learn is on the performance knobs, Patch Select A and B, and the pattern's windows along the top of the SEQ page (its mode, rate and swing, and the chosen track's on, length, transpose, gate and speed). The values you edit on the display and the pattern's steps take no MIDI learn yet: map a controller to them in your host. The Arp page's

knobs, menus and switches do learn. A performance knob learns the layer it shows: learn Cutoff while you edit layer 1 and the controller moves layer 1's Cutoff, whichever layer you edit next. A track's window learns that track's value in the same way.

> HOSTS
>
> The controller reaches Tasogare only as notes do: in Logic Pro, on the track selected or armed; in Live, on a track armed or monitoring. 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, chosen by ear, and Init: a twilight bank of hazy pads, a string machine, a choir, bells, a dub bass, slow lines and a floating lead, wind, and two kits. The numbers are each one's program change.

Showcase

01 Evening Tide

Two Glass soft saws nine cents apart and a warm square an octave down, the filter drifting slowly; on layer 2, a Grit breath of air an octave up that swells in over three seconds, on the echo. Hold chords.

02 Violet Hour

A Glass Scan Choir drifting through its frames on a slow LFO, a Scan Formant wandering against it on a slower one, a sine an octave down; on the Ensemble, in a large hall. Hold chords and watch the screen.

Pads

03 Last Light

A string machine: two Glass string cycles nine cents apart and a soft saw an octave down, vibrato arriving after 1.6 seconds; under them two Grit soft saws an octave down, twelve cents apart. On a slow flanger.

Bass

04 Cloud Bass

A round dub bass: a Glass sine and a soft square, a small pluck from the filter, legato glide, a touch of dark echo.

05 Grit Saw Bass

Hold a key: sixteen steps through a minor seventh chord, accented on the beat, a Grit saw and a saw an octave down through a filter that snaps open on each step, gliding legato. In the Lo-Fi room.

Leads

06 Floating Lead

Mono: a Glass warm square and a thin pulse seven cents apart, a chiff on each note's attack, legato glide, vibrato after 0.6 of a second, a long echo. Play it legato.

Bells

07 Afterglow Bells

A soft Glass glint and a mallet, a sine an octave up; the harder you play, the brighter. Dub echoes.

Textures

08 Sea Wind

The Wind and Breath loops through a singing filter swept slowly, drifting from side to side, in a very large hall. Hold chords.

Sequences

09 Dusk Sequence

Hold one key: eighths through a minor seventh (root, fifth, seventh, the third above), soft saws and a sine ringing over each other, the filter breathing slowly; long echoes.

10 Nightfall Line

Hold one key: a slow mono line in eighths, sliding between some of its notes, a soft saw and a triangle an octave down through a gently resonant filter that drifts over half a minute; far echoes.

Drums and Init

11 Analog Kit

Kit Analog across the keyboard, in Glass, with the gated reverb.

12 Metal Kit

Kit Metal, in Grit, in the Lo-Fi room.

13 Init

One Grit saw, the filter open, envelope 4 a simple gate: a blank page.

The kits' keys

KEYS	KIT ANALOG
G0 AND BELOW	Kick Deep
G#0 TO D#1	Kick
E1 TO B1	Snare
C2 TO G2	Clap
G#2 TO D#3	Tom Low
E3 TO B3	Tom High
C4 TO G4	Hat Closed
G#4 TO D#5	Hat Open
E5 TO B5	Rim
C6 TO G6	Cowbell
G#6 AND ABOVE	Shaker

The other kits use the same eight-key zones, with their own drums.

Ways to use it

TWO ERAS AT ONCE	Set up the same oscillators on two layers, put one in Grit and the other in Glass or Clean, and detune them a few cents. The grain sits inside the shine.
A SOUND WITH A START	Chain an attack into a loop: Bow into Strings, Hammer into Piano, Pick into a Scan Wave.
PLAYING LIVE	Spread four layers across Patch Select's states and switch A and B with a footswitch on CC 80 and 81.
MIXING	Send a drum layer to its own output with OUT, and treat it in your host.
MOVEMENT	Route Seq to a cutoff or a scan position and draw a VAL line under the notes.
A BAND FROM ONE TRACK	Set SOUT and Local off, and let the pattern sequencer play four of your other instruments, a channel each.

YOUR OWN WAVES	Forge a voice, a field recording or an old record at eight bits and 19.2 kHz with anti-alias off, and play it in Grit.

Programs and your presets

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

Click the program window at the top of the panel to open the program menu. The − and + buttons beside it step through the factory programs in turn. While one of your own presets is playing they step through your presets instead, and while an imported program is playing, through the imported programs. An asterisk after the name means the sound has changed since you chose it.

The program menu

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

Imported programs

Imported	The programs you have imported from program dumps (see MIDI, the host and program dumps). They load like factory programs.
Import SysEx...	Reads one or more `.syx` files.

Clear Imported	Empties the Imported list.
Export Layer n as SysEx…	Two items, one for each of the two keyboards the format belongs to. They write the layer you are editing as a single program dump.

What a program sets

A program, factory or your own, sets all four layers, the program's own settings on the MODES page, the effects, the pattern sequencer and the arpeggiator. It leaves alone what is yours as the player: the voice mode, the master level, the limiter, the MIDI controller numbers, Patch Select, Timbre, the program-change and MIDI-out settings, and each layer's output.

A preset that plays one of your Forge slots carries the sound inside its file, so it plays the same in any project. Keep such sounds short: a long 16-bit sound makes a preset of several megabytes.

Where they live

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

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

Installing on a Mac

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

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

Unlocking

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

1. **Copy all of it,** from Denki Digital licence to the end of the signature line. Then click the small key at the panel's right-hand edge, just above the window-size control 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, Tasogare 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 keyboard, 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 small keyboard glyph at the left-hand end of the keyboard hides the keyboard, and shows it again. Without it the panel is shorter (1360 × 646 instead of 1360 × 708 at its natural size), which suits a small screen. Whether the keyboard shows, the layer you were editing and the page on the display are all kept with your 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 Tasogare's device in Live's Device View, untick Auto-Scale Plug-In Window, then open the window again. Tasogare 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 Tasogare. 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**.

拾弐 TASOGARE

Technical

VOICES	Vintage: 8. Modern: 32
OSCILLATORS	3 per voice; Grit (8-bit), Glass (12-bit) or Clean
WAVES	104 factory waves, 16 user slots
FILTERS	24 dB analogue-style ladder, digital pair, or both
MODULATION	4 envelopes, 3 LFOs, a mod mixer, and slots on every destination
LAYERS	Up to 4 per program, with key and velocity zones
SEQUENCING	Arpeggiator and chord generator; 4-track pattern sequencer
SAMPLE FORGE	WAV, AIFF, FLAC, Ogg; 8, 12 or 16 bits; 16 slots, 64 MB
FACTORY PROGRAMS	12, chosen by ear, plus Init
MIDI	Sample-accurate program change; MIDI out
OUTPUTS	5 stereo
CPU	2.3% of one core (Vintage, 8 voices); about 10% (32 voices, four layers, effects)
PANEL	1360 × 708, scalable from 60 to 160%
LATENCY	87 samples at 48 kHz (about 1.8 ms), reported to the host
AUTOMATION	Every sound, effect, sequencer and MIDI setting (all but the Forge page's); MIDI learn on the performance knobs, Patch Select and the pattern's windows
FORMAT	VST3 plugin and standalone application; on a Mac also an Audio Unit
SYSTEM	Windows 10 or 11, 64-bit; or macOS 12 or later, Apple silicon or Intel
VERSION	1.0.0

Notices

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

Using Tasogare 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.

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黄昏

電 DENKI DIGITAL

Inspired by Tokyo. Built in Aberdeen.

東京に着想を得て、アバディーンで作る。

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