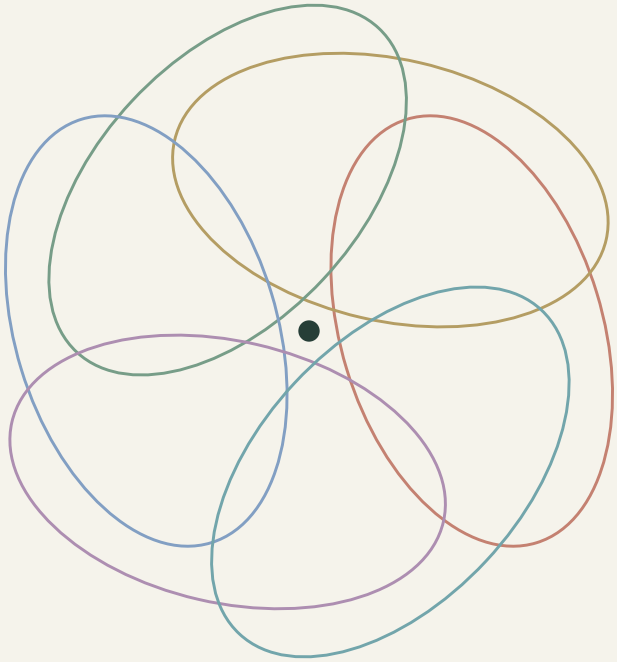
KID BUNKA / INSTRUMENTS FOR WANDERING



Mutable Dreams.

The 1.1 user guide

Play. Shape. Save your own small worlds.

FM-1 hardware + playable browser instrument + live editor

A practical, illustrated guide to six freely assignable tracks, warm sounds, generative rhythms, shared effects, User Banks, MIDI, installation and recovery.

English edition / 25 October 2026 / for released firmware 1.1

Find your way

Read the short path first, then return to the reference pages while you make music.

I want to...	Go to page
Hear my first Biome	3
Understand the FM-1 controls	4
Choose a sound and make it warmer	5-6
Create rhythms and write a bass phrase	7-8
Mix tracks, add space and work with grains	9-11
Name, save and reload my own Biome	12
Play in the browser or edit the FM-1 live	13-14
Back up or restore my saved work	15
Use a keyboard, MIDI controller or external clock	16
Update from 1.0 / install from Stock V15	17
Return to V15 and recover my banks	18
Manage quality, appearance or a problem	19-20
Look up all 19 pages and their four knobs	21-22
Find links, credits and release limits	23

Three ideas to remember

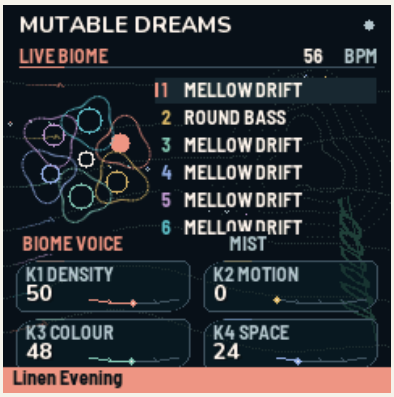
A Biome is a complete musical world: six tracks, rhythms, notes and shared settings. A **Sound** changes the timbre of one selected track. A **bank backup** is a file containing the saved device data.

Browser and hardware are separate instruments. The BROWSER / FM-1 status tells you which one you are editing. Saving in one does not automatically save in the other.

The numbered instructions use button labels as printed on the FM-1. "EDIT twice" means two short taps, starting from HOME. On the website, a named page button can take you directly to that page.

Your first five minutes

Start with a complete Biome. Change one thing at a time and listen to what it contributes.



LIVE BIOME. Native 1.1 display render; example values.

Four live macros
K1 DENSITY: more or fewer events.
K2 MOTION: melodic movement.
K3 COLOUR: brightness and overtones.
K4 SPACE: granular cloud level.

The selected track is highlighted. Every track can use any engine.

01 Begin quietly.
Connect headphones or your listening system and lower the master level. If you have not installed 1.1 yet, use page 17. In the browser, click **Start instrument**.

02 Choose a world.
On FM-1, tap **HOME**, then turn **PRESET**. Try **Linen Evening**, **Mellow Canopy** or **Satin River**. In the browser, choose the same name in the Biome list or Atlas.

03 Let it unfold.
Press **PLAY** and raise the master gradually. Move DENSITY a little, then COLOUR. Leave MOTION low for a more settled melody.

04 Focus on one voice.
Turn **SELECT** to a track. Tap **SEL** to mute or unmute it. The keyboard plays the selected voice; it does not write a sequence.

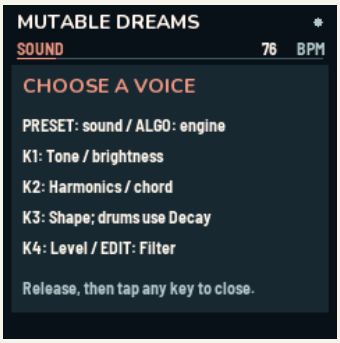
05 Keep a result.
Press PLAY to stop, choose INTERNAL clock if needed, then save to a named User Biome as described on page 12. Export a JSON copy for safekeeping.

Before loading another Biome

A factory Biome replaces the whole live patch and clears the granular cloud. Save or export any edits you want to keep first. Factory Biomes themselves remain available.

Your hands know the way

Short taps perform actions. Hold a function button for about one second to open its help page.



Hold, release, read.
Releasing after a hold does not also perform the short-tap action. Tap a function button to dismiss the help view; tap again if you want its normal action.

SELECT chooses a track.
ALGO chooses its engine.
K1-K4 follow the on-screen labels.

Contextual help. Native 1.1 display render; example values.

Button / encoder	What it does
HOME + PRESET	Tap HOME, then turn PRESET to choose a complete factory Biome.
EDIT + PRESET	Tap EDIT, then turn PRESET to choose one sound. Rhythm, notes, levels and sends stay in place.
EDIT / SEQ / FX / GLO	Cycle through the related pages. The full map is on pages 21-22.
PLAY / SEL	Start or stop the sequencer / mute the selected track. Stop lets tails decay.
ARP / REC / ENV	Lock the random seed / create a variation / return to the last pre-variation state.
LFO	Freeze or resume recording into the granular memory.
SAVE	Store startup Biome + preferences, except on USER BANKS where it saves the selected slot.
OCT- / OCT+	Shift the live keyboard by octaves. Sequencer base notes are unchanged.

Special case: REC on SYSTEM or MIDI means **PANIC**, silencing voices and clearing effect/tape tails. ENV is one-step variation return, not a general undo for every edit.

Choose the right voice

Twelve engines, 224 factory sounds and six freely assignable tracks. A track has no permanent kick, bass or pad role.

Engine	A useful starting role
Plaits Kick / Snare / Hat	Three percussion families: low pulses, brushed hits, ticks and noise.
Plaits FM	Sine-like tones, tines, bells and bass. More modulation can become metallic.
Plaits VA	Virtual-analogue reeds, pads, pulses and rounded leads.
Rings Modal	Excited resonators: wood, strings, bowls and ringing objects.
Plaits Harmonic	Additive partials for organ-like or spectral tones. Lower Tone keeps more fundamental.
Sine Choir	Soft chord colours within one track; not general-purpose MIDI polyphony.
Round Bass	A focused low end for bass phrases and gentle sub foundations.
Elements Strike	Selected struck / plucked resonator algorithms, with Mallet, Plectrum or Particles excitation.
Mellow Drift	Soft, moving analogue-like colours for unhurried ambient parts.
Satin Morph	Rounded waveform colours for mellow keys, reeds, bass and pads.

Change a sound without losing the pattern

01 Select a track.
Turn SELECT, or click its numbered voice card in the browser.

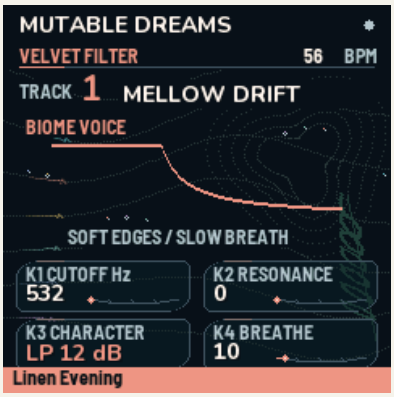
02 Choose a preset.
Tap EDIT and turn PRESET. In the browser, use that track's **SOUND PRESET** list. Try Soft Sine, Velvet Foundation, Mellow Linen or Wood Bowl in the appropriate family.

03 Shape it.
On SOUND, use Tone, Harmonics, Shape/Decay and Level. ALGO changes the engine itself. On Elements, K3 selects the exciter rather than the usual shape control.

These are selected original Mutable Instruments algorithms alongside original Mutable Dreams engines. They are not complete replicas of every module.

Make room for warmth

Use the source, envelope and filter together. Warmth does not require making the whole mix dull.



VELVET FILTER. Native 1.1 display render; example values.

EDIT twice from HOME
K1 Cutoff: the brightness boundary.
K2 Resonance: emphasis near it.
K3 Character: OFF, LP12, LP24 or low-pass gate.
K4 Breathe: slow filter movement.

For a smooth starting point, keep resonance low and open the cutoff gradually.

01 Start from a rounded source.
Use Satin Morph, Mellow Drift, Round Bass or a soft VA preset. If an FM or resonator sound is too sharp, reduce its Tone/Harmonics before filtering it.

02 Soften the edge.
Choose LP12 for gentle darkening, LP24 for stronger darkening, or LPG for brightness that falls with the decay. Begin with resonance near zero. Sweep the cutoff by ear.

03 Change the gesture.
Open ENVELOPE (EDIT three times). A slower attack makes a sound bloom; a longer decay lets notes overlap perceptually. Drums and Rings use their engine-specific decay behaviour.

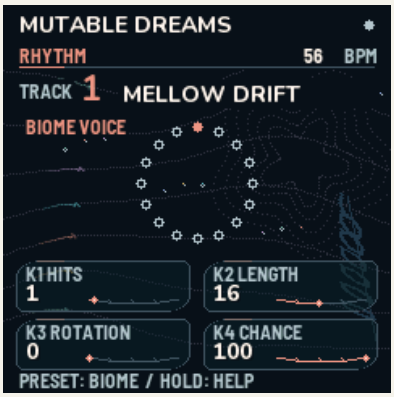
04 Keep the low end clear.
Use only a little grain or room send on the bass. Give upper textures more space. Lower track levels if six voices feel crowded; raising feedback is not a substitute for sustain.

Try a mellow ambient starting point

Load Linen Evening. Keep MOTION near zero, lower COLOUR slightly, then add a small amount of grain SPACE. On one melodic track, use LP12 with low resonance and a slow envelope. Save a new User Biome when you like the balance. These are musical suggestions, not mandatory preset values.

Rhythms with breathing room

Euclidean patterns distribute a chosen number of hits across a cycle. Different track lengths make the whole pattern evolve.



RHYTHM. Native 1.1 display render; example values.

SEQ once from HOME
K1 Hits: how many active steps.
K2 Length: 1-32 steps.
K3 Rotation: shift the pattern.
K4 Chance: probability of a hit.

DENSITY is an additional global influence. A high Chance does not override every other timing setting.

01 Build a reliable pulse.
On a kick track, use 4 hits over 16 steps, rotation 0 and Chance 100. Keep global Density around its midpoint while learning the pattern.

02 Add a counter-rhythm.
Select another track. Try 3 hits over 8 steps, or 5 over 12. Move Rotation to hear where the accents meet the first track.

03 Open GROOVE.
Tap SEQ again. K1 is global Swing, K2 gives 1-4 repeats per hit, K3 is the selected track's Accent and K4 is its clock division (1-8).

04 Introduce uncertainty slowly.
Lower Chance on a supporting track. Use REC for a new variation, ARP to lock its seed and ENV to return to the previous variation if needed.

Rhythm and phrase are different layers

With bass/phrase mode OFF, the ordinary rhythm drives the track. EUCLID gates a melodic motif with the rhythm. STEP uses the editable phrase independently of Euclidean hit positions. See page 8.

Write your own bass phrase

Each track has sixteen editable note/rest positions. The same workflow also works for melodic ambient voices.



PHRASE / NOTES. Native 1.1 display render; example values.

SEQ four times from HOME
K1 chooses step 1-16.
K2 sets a semitone offset 0-24; **-1 is a rest**.
K3 Accent and K4 Chance apply to the track, not to an individual step.

Notes still follow the global scale.

01 Choose a sound and mode.
Select a track with Round Bass. Open BASS / MOTIFS (SEQ three times). Set K1 to **STEP**. K2 chooses one of four starting motifs; choose this before making detailed edits.

02 Set the register.
On BASS, choose a base note with K4, for example 36 for a low C before scale/transpose. Add a little Glide with K3 if you want notes to slide.

03 Enter a simple phrase.
Open PHRASE. Set steps 1-8 to **0, -1, 7, -1, 0, -1, 12, -1**. Repeat them at steps 9-16, or change a note at the end. Select each step with K1 and edit it with K2.

04 Listen and refine.
Press PLAY. Adjust the global scale on HARMONY, the track's clock division on GROOVE, then Accent and Chance. Stop before saving.

What 1.1 does and does not record

The keyboard and incoming MIDI play voices live; they do not record into the phrase. Enter notes with the phrase controls. There is no pattern chaining, per-step probability/velocity editing, or live MIDI recording in 1.1. Save a complete User Biome to retain your sequence.

One mix, three sends

The global mixer balances six tracks and sends each one into the shared granular bus, delay and room.



GLOBAL MIXER. Native 1.1 display render; example values.

EDIT five times from HOME
SELECT chooses the track.
SEL mutes/unmutes it.
K1 Level, K2 Grain send,
K3 Delay send, K4 Reverb send.

Sends follow the track level. Turning a send up cannot recover a silent or muted source.

01 Balance the dry voices.
Start with the effects low. Give the bass and pulse enough room, then bring in the remaining tracks. Use NOTES / PAN (EDIT four times) to place them left or right.

02 Send only what needs space.
Add room to a pad or mallet, a little delay to a short melody, and grain to a sustained texture. Keep bass sends restrained when you want a clear foundation.

03 Set the common effects.
Open SHARED SPACE (FX three times). K1 sets echo time from 40-350 ms; K2 controls echo feedback; K3 shapes the room tail; K4 controls the shared effect return.

04 Check both ends of the route.
A delay or room needs both a track send and an audible shared return. The granular bus instead uses the SPACE macro as its output level.

A connected sound

Use a short room with moderate return for cohesion, or longer tails for a cloud around the instruments. Delay time is in milliseconds; 1.1 does not offer tempo-synchronised delay divisions. PANIC clears the tails when you need silence.

Inside the granular cloud

The bus records internal track sends into a short memory and plays overlapping pieces of that memory.



GRANULAR BUS. Native 1.1 display render; example values.

FX once from HOME
K1 SPACE: cloud output level.
K2 GRAIN SIZE: fragment length.
K3 POSITION: where grains read.
K4 FEEDBACK: recirculation.

The 0-100 size display is a control scale, not milliseconds.

01 Feed the memory.
On the mixer, add Grain send from a sustained voice. Play long enough to fill the memory, then raise SPACE. The dry voice remains available.

02 Explore length and position.
Move GRAIN SIZE gradually. Short grains can sound buzzy; longer ones reveal more of the source. Position changes the captured moment. Keep Feedback modest while comparing settings.

03 Hold a texture.
Tap **LFO** to freeze the memory. The cloud continues while the tracks remain playable. Tap it again to resume recording.

04 Move the tape.
Open TAPE / MOTION (FX twice). K1 transposes grains by up to +/-24 semitones. K2 reverses them. K3 chooses a ducking source; K4 sets how much the other tracks are attenuated.

What is stored

The live recording is about 2.97 seconds of mono memory with stereo grain playback. It is not saved in a Biome, JSON export or .mddb backup. Persistent crackles are not a required feature of granular synthesis: reduce feedback, check SYSTEM/XRUNS and compare with the grain send at zero (page 20).

Movement with intention

Choose a harmonic home, then add measured variation and modulation to individual voices.



MARBLES / TIDES / WARPS. Native 1.1 display render; example values.

FX four times from HOME
K1 Marbles: remembered phrase variation.
K2 Tides: filter movement depth.
K3 Cycle: speed of that movement.
K4 Warps: ring blend.

These are original inspired functions, not full module ports.

01 Set the musical centre.
Open HARMONY (GLO once). Choose Root and Scale, then a global Transpose and Tempo. Scales are Chromatic, Minor, Major, Dorian, Minor Pentatonic, Major Pentatonic, Whole Tone and Phrygian.

02 Let a phrase vary.
Enable EUCLID or STEP on the selected track's BASS page. Add Marbles gradually. Use the seed lock for more repeatable variation; different lengths can still make the full arrangement cycle slowly.

03 Let the colour breathe.
Enable a track filter before adding Tides. Adjust its depth and cycle slowly. This movement is separate from the filter page's Breathe control.

04 Add an edge deliberately.
Raise Warps for ring-blended overtones. For a mellow sound, leave it low or at zero. If a voice becomes metallic, check this control as well as resonance and the oscillator settings.

Changing a global scale can alter the resulting pitch even when a phrase contains the same numeric offsets. MIDI scale snap is a separate option on the MIDI page.

Keep your own Biomes

Sixteen named Biome slots and sixty-four User Sound slots live on each instrument. Factory presets remain intact.



USER BANKS. Native 1.1 display render; example values.

GLO five times from HOME
K1: slot number.
K2: BIOMES or SOUNDS.
K3: turn right to load.
K4: name cursor.
PRESET: change that character.
SAVE: save into this slot.

01 Make a world.
Begin with a factory Biome or Blank Biome. Set the six sounds, notes, rhythms, mixer and effects. Blank starts without sequenced hits; add a rhythm or enable STEP to hear automatic playback.

02 Prepare to save.
Stop PLAY. On MIDI, select **INTERNAL** clock. Open USER BANKS, choose BIOMES with K2 and a free slot with K1.

03 Name it.
Move the name cursor with K4 and turn PRESET for each character (up to 23). In the browser, type into **User name** instead.

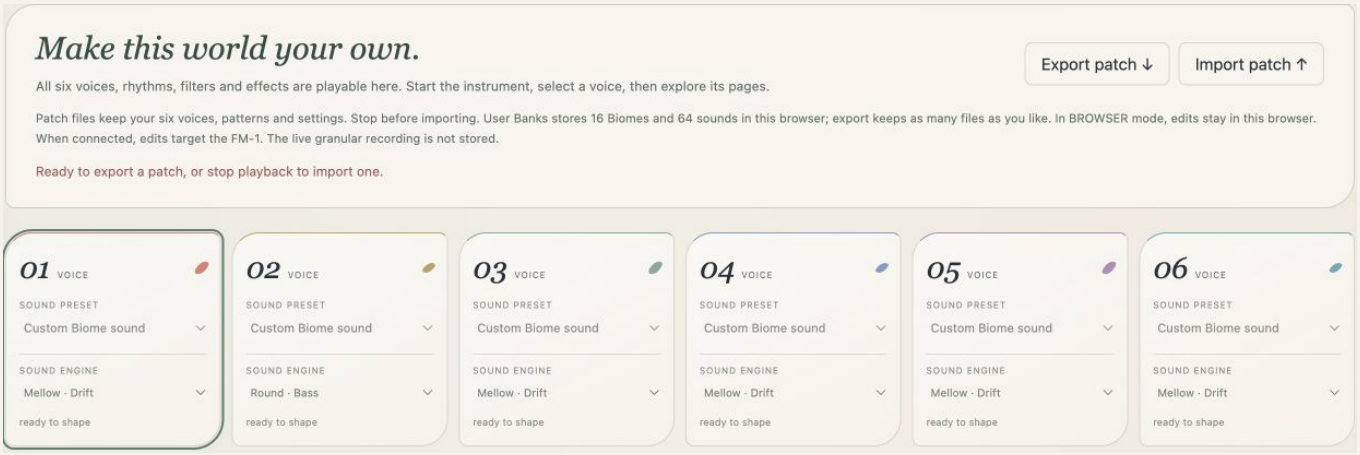
04 Save and verify.
Tap SAVE. An occupied slot asks **SAVE AGAIN: OVERWRITE SLOT**; repeat within three seconds only if you intend to replace it. Look for **USER SLOT SAVED**. Load that slot with a right turn of K3 and confirm the sound.

05 Choose what starts next time.
Saving a bank slot is separate from the startup save. If you want the current Biome on next boot, leave USER BANKS, stay stopped/internal, and tap SAVE again.

User Sounds: choose SOUNDS and save the selected track's timbre. Recalling it preserves that destination track's rhythm, notes, mix and sends. Use a full Biome when you also want the sequence. Export a JSON copy; local or device storage is not your only backup.

Play in your browser

No FM-1 is required. The browser runs the application/DSP source with its own local saved banks.



Actual website screenshot: patch-file controls and the six freely assignable voice cards.

01 Start the engine.
Open the website and click **Start instrument**. Choose a Biome. Click Play for its sequence, or use the on-screen keyboard to play the selected voice.

02 Choose and edit a track.
Click its numbered card, then use SOUND PRESET or SOUND ENGINE. The page buttons open Sound, Filter, Phrase, Mixer and the other views. Move the four sliders below them.

03 Use a keyboard if you like.
Enable **Play with typing keys**. A W S E D R F G Y H U J play F through E in the shown register; OCT changes octave. Typing into text fields does not play notes.

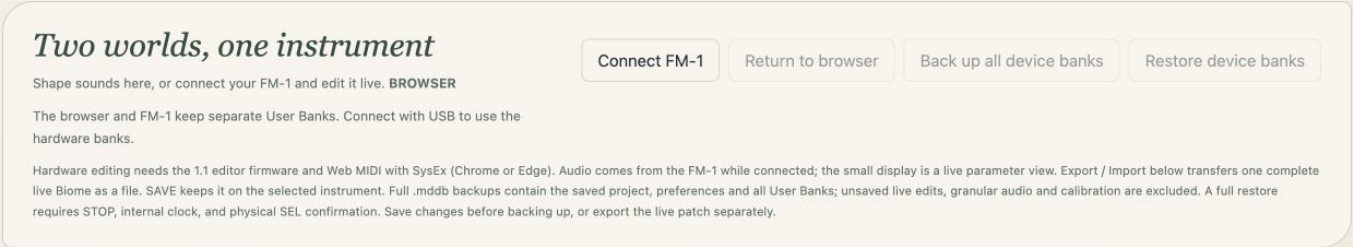
04 Keep your work.
Stop, use INTERNAL clock, open GLO 5 / User Banks, select the bank and slot, type a name and click Save user slot. An occupied browser slot needs a second save within three seconds. Use Export patch to keep a separate JSON file.

Local means local

Browser banks are specific to the browser profile and website origin. Clearing site data, private browsing or moving to another origin can lose access to them. Export important Biomes. A desktop browser supporting Web Audio and WebAssembly is required; hardware connections additionally require Web MIDI SysEx.

Edit the FM-1 live

The website can become a remote parameter editor for an FM-1 running Mutable Dreams 1.1.



Actual website screenshot, before connection. Backup and restore become available after connection.

01 Prepare the connection.
Connect FM-1 to the computer with a USB data cable. Use Chrome or Edge. Close other editors or updater applications that are using the device.

02 Connect the correct instrument.
Click **Connect FM-1** and allow the requested MIDI/SysEx access. Check that the status changes from BROWSER to the FM-1. This editor is for 1.1; it cannot edit Stock V15 or Mutable Dreams 1.0 directly.

03 Edit and listen at the hardware.
Browser parameter changes go to the FM-1, and hardware parameter changes return to the browser. Audio comes from the **FM-1**. The small browser display is a parameter view, not a camera feed.

04 Transfer a single Biome.
Export patch downloads the current live hardware patch as JSON. For import, stop playback and use INTERNAL clock. Import a compatible JSON, then explicitly SAVE or save to a User Biome to retain it.

05 Disconnect clearly.
Click **Return to browser** when finished. The browser's separate local instrument becomes the editing target again. Do not leave an updater and the live editor connected at the same time.

Two different MIDI buttons

Connect FM-1 opens the bidirectional device editor and bank transfers. **Connect MIDI input** routes notes/controllers from a chosen input into the browser instrument. They have different purposes.

Back up and restore

Keep both the saved bank archive and any unsaved live patch. Neither file is an audio recording.

File / action	What it keeps
Live patch .json	The currently edited six-track Biome. Includes notes and settings, even if you have not saved it to a slot.
Device banks .mddb	The SAVED startup project, saved appearance/startup preferences, 16 User Biomes and 64 User Sounds. Empty slots are represented too.
Not included	Granular recorded audio, calibration and unsaved live edits are not part of .mddb. It is not a full-flash dump.

Make a complete personal backup

01 Save or export the live work.
If you want it saved on the device, stop/internal-clock and SAVE. Otherwise use Export patch to retain the unsaved state as a separate JSON.

02 Download the saved banks.
While connected to 1.1, click **Back up all device banks**. Keep the downloaded .mddb with its date, the firmware file and your JSON exports.

Restore your own saved banks

03 Prepare the target.
Use Mutable Dreams 1.1, stop playback and select INTERNAL clock. Connect the editor, click **Restore device banks** and select the .mddb file. Read the replacement summary.

04 Confirm on the hardware.
When the FM-1 says **RESTORE FROM USB?**, press **SEL physically on the device**. HOME or timeout cancels. The browser cannot make this physical confirmation for you.

05 Verify and finish.
Wait for completion, then check representative User Biomes and Sounds. Import a separate unsaved-live JSON last if needed; save it explicitly.

Restore replaces the saved set

Full restore replaces the startup project, preferences and all included banks, including clearing slots that were empty in the backup. Back up the target first. If a connection is lost after confirmation, reconnect and inspect the data before repeating the restore.

MIDI and external clock

Channels 1-6 address tracks 1-6. Each track is a monophonic voice slot, with velocity and +/-2-semitone pitch bend.

Message	1.1 response
Note On / Off, CC64	Play/release; sustain for melodic envelopes. Drums and resonators have their own tails.
CC7 / CC11 / CC10	Track level / expression / pan.
CC74 / CC71 / CC5	Filter cutoff / resonance / glide. Enable a filter to hear cutoff changes.
CC13 / CC12 / CC91	Granular send / delay send / room send.
Channel 16: CC16-19	Global Density, Motion, Colour and Space macros.
CC0 + Program Change	Factory sound selection: bank MSB x 128 + program (zero-based). Bank 0: sounds 0-127; bank 1: 128-223. Use bank LSB 0. Some controllers display programs starting at 1.
CC123 / CC120 / CC121	All Notes Off / silence that voice / reset expression, bend and sustain.

01 Play live.
Send notes on the chosen track channel. On MIDI (GLO four times), K2 switches scale snap off for exact input pitches or on to follow the Biome scale.

02 Follow a clock.
K1 selects INTERNAL, USB or TRS clock. Changing the source stops playback. Send MIDI Start/Continue/Stop and clock from the selected port. Clock loss stops the sequence after about two seconds.

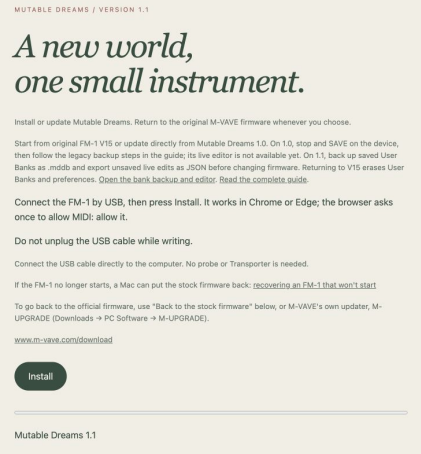
03 Save after a clock session.
Stop the external transport and return to INTERNAL clock before saving, loading User Banks or restoring data. Re-select the external source for the next performance.

Test scope and limits

USB MIDI was tested. TRS input is implemented, but the physical TRS cable/adapter test is still outstanding. There is no MPE, MIDI output or live MIDI sequence recording in 1.1. A clock source selection does not itself connect an external MIDI device.

Install or update 1.1

The checked starting points are original Stock V15 and published Mutable Dreams 1.0. A V15 detour is not needed for a 1.0 update.



Use the browser installer

Open the website's **Install or return to V15** link in Chrome or Edge. The **Install** button installs Mutable Dreams 1.1. The separate stock section is for returning to M-VAVE V15.

Screenshot: actual installer, not an active firmware transfer.

01 Back up the version you have.
On **1.1**, use page 15. On **1.0**, stop and press SAVE, then follow the legacy backup instructions in Recovery-1.1.txt. The 1.0 firmware has one saved personal Biome and does not support .mddb or the 1.1 live editor. Preserve any Stock V15 work using the stock firmware's own tools.

02 Prepare USB.
Close other MIDI editors and backup tools. Connect directly with a USB data cable. Keep power and USB connected throughout the update.

03 Install and wait.
Click **Install**, allow MIDI access, and wait for the success message and the restarted identity. Do not unplug during writing or restart.

04 Check the result.
The expected identity is **FM-1_710010100**; the USB-MIDI port is **X0X FM-1**. Play a Biome, check your migrated saved patch and make a fresh 1.1 bank backup.

The tested direct 1.0 update preserves original patch parameters and migrates the format. Synthesis refinements may still change the sound. Direct installation from every third-party firmware has not been qualified. Use the linked recovery guide for the exact package and legacy procedure.

Return to Stock V15

Returning is supported, but your 1.1 User Banks and preferences must be backed up first.

01 Make two kinds of backup.
On 1.1, save or export your live edits as JSON, then download the .mddb archive of saved data. Keep both outside the browser before continuing.

02 Get the verified stock file.
Open the installer's **Back to the stock firmware** section and use its manufacturer download link. Choose the downloaded FM-1.fwsc. The installer checks it against the known V15 fingerprint before enabling the stock button.

03 Install stock.
Click **Install the stock firmware**. Keep USB and power connected. The expected stock identity is **FM-1_015**, and its USB-MIDI port is **FM-1**.

04 Come back to your Biomes.
Install the same qualified Mutable Dreams 1.1 again. Stop, use INTERNAL clock and restore your .mddb, confirming with physical SEL. Import a separately exported live JSON last, then save.

Do not rely on data surviving V15

The device roundtrip erased 1.1 User Banks and saved preferences. A firmware file contains the program, not your personal bank contents. Restoring from your backup is the recovery path.

Known Stock V15 reference

Expected size: **699,956 bytes**. Expected identity: **FM-1_015**.
SHA-256, shown on two lines for readability:

db1642b2b6fa5c2cccb11ffd13878068bb2
8601678d3644049f99dc40e7edb8a

The manufacturer can replace a file at the same URL. If verification fails, do not force an unknown file. Read the current recovery guide. The documented V15 roundtrip used the functional predecessor with identical DSP, platform and update loader; the exact final 1.1 was separately tested for direct 1.0 migration.

If the FM-1 no longer boots

Use the upstream rescue link in the installer and the recovery guide. This manual does not claim a newly tested emergency ROM rescue. A failed browser connection alone is not evidence that the instrument needs rescue.

Quality, motion and startup

Choose the processing mode for the patch you are playing, and keep the display comfortable to read.



QUALITY / SYSTEM. Native 1.1 display render; example values.

GLO twice from HOME
K1 Tempo; K2 ECO / FULL.
K3 ducking recovery.
K4 resets the measured peak.

The host-rendered screenshot deliberately says HOST ONLY: it is not a hardware load measurement.

FULL and ECO

FULL offers richer resonator/grain processing. Dense combinations may select ECO to protect the FM-1 audio deadline. ECO uses fewer grains/adaptive resonator modes and half-rate processing for selected FM, VA and Harmonic voices. This is a quality/performance choice, not an extra bank of sounds.

On hardware, watch LOAD / MAX and whether XRUNS increase while your patch plays. Existing counters can include earlier events. Compare before and after the same playback passage; a quiet browser test cannot qualify the FM-1 processor load.

Make the interface quieter

Open LOOK / STARTUP (GLO three times). K1 switches animation between LIVING and STILL. K2 enables/disables the startup sound, K3 replays the intro, and K4 resets the CPU maximum. Stop, select INTERNAL clock and press SAVE outside USER BANKS to retain these preferences.

Known release limits

Six freely assignable monophonic track slots; sixteen phrase steps per track. Long tails, dense repeats and complex engines share the same processing budget. Selected dense release tests had no new playback faults; every possible six-track patch has not been exhaustively tested. Use the linked qualification report for measured scope.

When something feels wrong

Work from the signal source toward the output. These checks usually reveal the cause without changing firmware.

Symptom	Check first
No sound	Master/output connection, track mute and level. In browser mode: Start instrument. When editing hardware: listen at FM-1. Blank has no sequenced hits until you add them.
No sequence	PLAY, correct clock source and incoming clock. Check Chance, Density, track hits and phrase mode. A phrase containing rests is intentionally silent there.
Sharp or metallic	Lower source Tone/Harmonics, filter resonance and Warps blend. Try Satin Morph/Mellow Drift, low resonance and LP12. Solo one voice to find the source.
Granular crackles	Compare with SPACE or Grain send at zero. Reduce feedback, check mixer headroom and increasing XRUNS. Try ECO. Record the exact Biome, Grain Size and quality mode if it persists.
No delay, room or cloud	Check selected track level, mute, its send and the corresponding return. Granular also needs recorded source material.
SAVE refused	Stop PLAY and choose INTERNAL clock. Wait until any backup transfer finishes. USER BANKS save and startup SAVE are different actions.
A slot was not overwritten	On hardware/browser-local banks, press Save again within three seconds after the warning. In live-editor mode, confirm the replacement dialog.
Browser cannot connect	Use Chrome/Edge, allow MIDI/SysEx, check USB data cable and 1.1 identity, close other MIDI clients. Reload the current website if an old page is cached.
Keys keep sounding	Use Panic, or REC on SYSTEM/MIDI. PANIC also clears effect tails and the granular memory.
Browser banks seem missing	Use the same browser profile and origin. Restore individual Biomes from your exported JSON files. Device .mddb is not a browser-local bank format.

When reporting a problem: include firmware version, Biome or JSON patch, engine/track, page and control values, FULL/ECO, clock source and a short recording. Share private bank backups only when you intend to. For a crash, the installer has a read-only crash-report button; keep the device powered while collecting it.

Page map / sound and rhythm

From HOME, tap the named group button the indicated number of times. K1-K4 correspond to the display labels.

Page / route	K1	K2	K3	K4
LIVE / HOME	Density	Motion	Colour	Space (grain return)
SOUND / EDIT 1	Tone	Harmonics	Shape / Decay; Elements: Exciter	Level
FILTER / EDIT 2	Cutoff	Resonance	Off / LP12 / LP24 / LPG	Breathe
ENVELOPE / EDIT 3	Attack*	Decay	Level	Grain send
NOTES / PAN / EDIT 4	Grain send	Base note	Pan	Clock division
MIXER / EDIT 5	Level	Grain send	Delay send	Room send
RHYTHM / SEQ 1	Hits	Length	Rotation	Chance
GROOVE / SEQ 2	Swing (global)	Repeats	Accent (track)	Clock division
BASS / SEQ 3	Off / Euclid / Step	Motif	Glide	Base note
PHRASE / SEQ 4	Edit step 1-16	Offset 0-24 / rest -1	Accent (track)	Chance (track)

* Envelope attack applies to supported melodic engines. Drums and resonators have their own envelope behaviour. Read the displayed label when changing engines.

PRESET changes meaning with context

On Sound, Filter, Envelope, Notes/Pan, Mixer, Bass, Modulation and Phrase, PRESET chooses a **single sound**. On USER BANKS it edits a name character. On the other pages it chooses a **whole Biome**. For predictable browsing, use HOME then PRESET for a Biome, or EDIT then PRESET for a sound.

Common actions

SELECT: track. **SEL:** mute. **ALGO:** engine.
ARP: seed lock. **REC:** variation, except Panic on SYSTEM/MIDI.
ENV: return from the last variation. **LFO:** grain freeze.
SAVE: startup save, except slot save on USER BANKS.

Page map / space and settings

Most knobs use a 0-100 display scale. Hertz, milliseconds, semitones, steps and enum labels are shown where relevant.

Page / route	K1	K2	K3	K4
GRAIN / FX 1	Space	Grain size	Position	Feedback
TAPE / FX 2	Pitch +/-24 st	Forward / Reverse	Duck source / Off	Duck amount
SHARED SPACE / FX 3	Echo 40-350 ms	Echo feedback	Room tail	FX return
MODULATION / FX 4	Marbles	Tides depth	Tides cycle	Warps blend
HARMONY / GLO 1	Root	Scale	Transpose +/-24	Tempo 30-220
SYSTEM / GLO 2	Tempo	ECO / FULL	Duck recovery	Reset peak
LOOK / GLO 3	Living / Still	Startup sound	Replay intro	Reset peak
MIDI / GLO 4	Int / USB / TRS clock	Scale snap	Information only	Information only
USER BANKS / GLO 5	Slot 1-16 or 1-64	Biomes / Sounds	Turn right: load	Name cursor

Settings that affect more than one track

Density, Motion, Colour, Space, tempo, root, scale, transpose, swing, quality and shared effects belong to the whole Biome. Mixer sends, voice settings, phrase notes and modulation amounts belong to the selected track. SELECT does not make a global control track-specific.

A final save checklist

1. Stop playback and use INTERNAL clock.
2. Save a named User Biome for the complete arrangement.
3. Save the startup project separately if wanted.
4. Export a JSON copy of the live patch.
5. For hardware, make a fresh .mddb after saving your banks.

If the display is busy, hold the page's group button for context help. For USER BANKS, holding SAVE also explains the bank-saving workflow.

From generous ideas

Thank you to the community for listening closely, sharing music and helping Mutable Dreams become a more useful instrument.

With gratitude

Mutable Dreams by **Kid Bunka / Christoph Link** builds on the generosity of **Émilie Gillet and Mutable Instruments**, Charles Vestal / fm1-base, Leo Kuroshita / Felucca, and the open-source contributors whose original notices remain with the source.

Selected Plaits, Rings and Elements algorithms are combined with original Mutable Dreams synthesis and sequencing. The granular bus, Marbles-inspired remembered variation, Tides-inspired movement and Warps-inspired ring blending are not complete ports of those modules. This is an independent community project, unaffiliated with and not endorsed by Mutable Instruments or M-VAVE.

Keep these links

Play, edit and download this guide

Install / update / return to Stock V15

Detailed recovery and legacy 1.0 backup

Exact device test scope and limitations

GitHub release, firmware and complete source

English 1.1 video walkthrough

Original Mutable Instruments source

About this edition

English guide, 25 October 2026. Covers released Mutable Dreams 1.1, device identity FM-1_710010100. The device firmware and published 1.0 remain unchanged. Future 1.2 plans are outside this guide.

Small device images are exact 240 x 240 application renders generated off-device from the released source; they are not camera photographs or hardware performance evidence. Browser images are screenshots of the published website. Only crops and proportional placement were used. Example values illustrate the page and need not match your own Biome.

The combined firmware distribution is GPL-3.0-only with original MIT/MPL-2.0 and font notices retained. See the release licensing files for component terms. This guide is an operating reference; it does not expand the tested hardware scope.