EMBER-8 v0.15.2 User Guide

English | Workflow Navigation Beta | 7 November 2026

01 / The new navigation

EMBER-8 has eight voices, three freely assigned source slots and a separate Noise generator. KNOB FX now follows the three actual oscillator slots plus Noise. Matrix destinations now follow assigned source types; labels consistently use OSC 1/2/3. This version corrects navigation; the v0.14 sound engine and your named presets are retained.

Control	Function
PAD FX	Next main area; remembers each area's last page
KNOB FX	In Editor: OSC 1 > OSC 2 > OSC 3 > Noise. Elsewhere: return to the selected editor
B1 / B2	Previous / next page within the current area
Encoder turn	Editor: choose matching OSC 1/2/3; Library: preset; STEP: step
Encoder press	Execute the printed action: load, preview, record, export or save session
B3	Show MPC; synth/beat/sequence can keep running
PAD FX + KNOB FX	Switch MPC/synth view; preserves the current area/page
B1 + B2	Shortcut back to Editor; does not stop playback

Library is the deliberate B1/B2 exception: B1 loads; B2 twice saves. In the other areas B1/B2 always browse pages. Single actions occur on release; overlap both FX buttons for a view change.

PAD FX ring: Editor > Assign > Global > Mixer > Effects > Matrix > Sequencer > Library > Editor. The top right always identifies the selected OSC and its actual type. Global/Mixer/Effects/Matrix are marked ALL OSC. The two bottom rows show destinations and encoder actions.

02 / Install, start and return

Install or update from the download

Save the MPC project and shut down normally before moving the SD to the computer. Back up autorun, EMBER-8 and MPC-JUP8-SESSIONS. Extract the download on the computer first.

Merge the package autorun contents into SD:/autorun, replacing the matching runtime files together. Preserve an existing custom performance.cfg and personal WAVs in autorun/wavetables. Do not mix observer, watcher or preflight binaries from different releases.

Merge EMBER-8/presets into the SD root. Skip existing preset names to preserve edits. Keep projects, sessions, source caches and exports. Retain LICENSE, THIRD-PARTY-NOTICES and licenses/ when sharing the download.

Start; use the insertion fallback only if needed

1. Safely eject the SD from the computer. With the MPC off, insert the card and switch the MPC on.
2. Wait for the normal interface and several seconds for the mod launch/application restart.
3. Move Main Volume to unmute. Press overlapping PAD FX + KNOB FX to show the synth.
4. If no synth starts: shut down normally, start once without the card, wait for the normal interface and idle file activity, then insert the card and wait again.

Cold-boot launch with the card already inserted has not been reliable in previous tests. Inserting the card after startup is the established fallback, not a new installation requirement. The normal automatic profile does not ask a diagnostic question; the original waiting time is retained.

Switch views without removing the SD

B3 shows the MPC interface. PAD FX + KNOB FX switches back to the synth and preserves the previous sound/sequencer view. View switching does not unload the synth or stop either sequencer automatically. The original MPC beat and synth can sound together.

For removal, shut down, connect the SD to the computer and rename autorun to a disabled name or restore your complete backup. Original firmware and internal storage are not modified by this package. Do not remove the SD while importing, recording or saving.

v0.15 changes the UI workflow and matching observer/writer shared state. Install its matching runtime files together. Keep the previous autorun backup for rollback. The established startup delay is unchanged.

03 / Assign sources and choose an OSC

Press PAD FX until ASSIGN. K1 chooses OSC 1's source, K2 OSC 2, K3 OSC 3. Choices: Off, Analog, FM, Wavetable, Granular. Noise is a separate generator and does not occupy one of these three slots.



ASSIGN: K1/K2/K3 choose the three source types; the header identifies the selected OSC.

KNOB FX returns to Editor. Repeated KNOB FX presses select OSC 1 > OSC 2 > OSC 3 > Noise, regardless of their assigned types. No unused type editor appears and no source assignment changes. In Editor, turn the encoder to select another OSC using that type. If OSC 1 and 2 are both FM, KNOB FX still visits them separately. Example: OSC 1 Analog > OSC 2 Wavetable > OSC 3 Granular > Noise; no FM gap.

A slot set to Off still shows its OSC number and OFF. Turning its knobs does not repurpose another OSC. Use PAD FX > ASSIGN to assign the type explicitly.

B1/B2 browse the selected type's own pages. Each OSC remembers its settings page for each source type. Two OSCs of the same type remain separate stops in the KNOB FX ring. Returning from another main area restores the editor. Leaving a sample page stops its preview, without stopping the synth pattern or MPC beat.

04 / Analog and Wavetable editors

Analog page	K1	K2	K3
ANALOG	Saw/Pulse/Triangle/Sine	Pulse width	PWM
UNISON	1 / 2 / 3	Detune cents	Stereo
ANALOG FX	Drift cents	Sync to Analog OSC 1	Ring with OSC 1
START	Phase	Start random	Fine cents

Use KNOB FX to select an OSC assigned to Analog; encoder can select another Analog OSC; B1/B2 browse these pages. PWM affects Pulse. Unison divides the oscillator sum for headroom and uses at most three sub-oscillators/source; it does not increase eight-note polyphony. Drift slowly varies pitch. Sync/Ring affect OSC 2/3 with OSC 1 as their input/master, and have no effect on OSC 1 itself.

Wavetable page	K1	K2	K3
WT	Loaded bank	Position	LFO1 scan
SOURCES	Saved SD project	Pad bank A/B	Project / Factory mode
WT WARP	Off/Bend/Fold/Asymmetry	Warp amount	Source trim
START	Phase	Start random	Fine cents

WT position blends eight frames; the 3D trace follows the current waveform. Warp changes phase shape. Strong warp selects a conservative table bandwidth; extreme settings can still alias. SOURCES is the second WT page: select a READY pad to hear and use its sample, or press the encoder to preview/use the selected pad. B1 goes back to WT; B2 advances to WT WARP.

Browsing pages or OSCs does not change the sound. The encoder never selects a factory preset in the new native workflow. Presets belong in Library.

05 / FM editor: four or six operators

Use KNOB FX to select an OSC assigned to FM; encoder can select another FM OSC. B1/B2 browse FM > FM CONFIG > MODE > TONE > ENV > TAIL > OP FIXED > START. B1/B2 no longer change operators.

Page	K1	K2	K3
FM	Algorithm	Linked ratio / Operators feedback	Depth
FM CONFIG	4 / 6 operators	Source trim	Stereo
MODE	Linked / Operators	Selected operator	Feedback
TONE	Selected ratio	Selected level	Velocity response
ENV	Selected attack	Selected decay	Selected sustain
TAIL	Selected release	Overall depth	Feedback
OP FIXED	Selected fixed on/off	Selected frequency Hz	4 / 6 operators
START	Phase	Start random	Feedback

On every FM editor page the fader chooses OP 1-4 or OP 1-6. The encoder chooses the OSC. The header shows OSC and FM; the fader line names the selected operator.

Linked retains shared-ratio behavior. Operators enables independent levels, ratios, velocity and ADSR; editing an operator setting activates it. Fixed frequency requires Operators mode. Ratios follow note pitch; fixed settings use 1-16000 Hz independently of the key. Shared AMP release can still end a longer operator release.

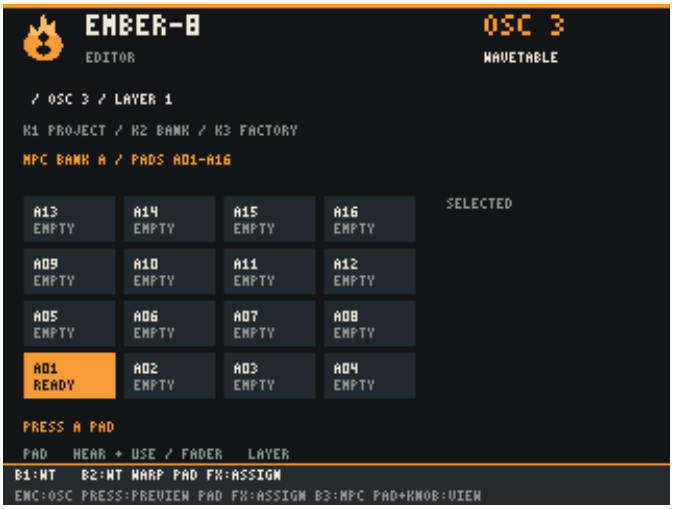
Eight original graphs: Stack, Pairs, Fan, Additive, Twin Stack, Branch, Cascade, Split Bell. Amber nodes are output carriers. Operators 5/6 start at zero level in older patches. This is not DX7 SysEx compatibility or exact DX7 emulation.

Library includes 24 original D-Funk presets: basses, electric pianos, clavs, brass, leads and pads. They explore the requested Dabeull-style musical mood; they are not official artist patches or sampled recordings.

06 / Granular and sample selection

Granular page	K1	K2	K3
GRANULAR	Loaded sample	Position	Grain size
SOURCES	Saved SD project	Pad bank A/B	Project / Factory mode
GRAIN MOVE	Density	Position spray	Scan speed
GRAIN FX	Window shape	Pitch spread semitones	Stereo scatter
START	Phase	Start random	Forward / Reverse

Granular uses short overlapping grains, with a maximum of four per source/voice. Windows: Parabola, Hann, Triangle, Soft Box. Random pitch and pan are chosen per grain. ROOT pitch is MIDI 60. Source/OSC selection follows the same encoder rule as the other editors.



The sample target is locked to the current OSC/type. READY pads assign and audition.

In MPC view, load a sample onto a pad and save the project and samples on SD. Return with PAD FX+KNOB FX. In the WT/Granular/Noise editor use B1/B2 to reach SOURCES. K1 chooses saved project, K2 bank A/B, K3 Project/Factory. Fader chooses sample layer. Press a READY pad to hear/use it; encoder press previews/uses the selected pad. Encoder turn still selects the OSC, where another matching source exists.

B1/B2 leave SOURCES as ordinary previous/next pages. PAD FX changes area; KNOB FX selects the next OSC or Noise. These stop the preview. Preview is raw mono, up to two seconds, follows Main Volume and is excluded from WAV export. Unsaved pad assignments/internal-only projects are not read.

07 / Noise and your own WAVs

Select Noise with KNOB FX. It is separate from OSC 1/2/3. The header reads NOISE and its color. B1/B2 browse NOISE > NOISE PLAY > NOISE ADS > NOISE REL > NOISE WAV > SOURCES.

Page	K1	K2	K3
NOISE	Level	White/Pink/Brown/WAV	Tone
NOISE PLAY	Keytracking	WAV random start	Tone
NOISE ADS	Attack	Decay	Sustain
NOISE REL	Release	Level	Tone
NOISE WAV	Loaded bank	Speed	Start
SOURCES	SD project	Pad bank A/B	Project / Factory mode

Noise has its own ADSR and can continue after AMP release. Its output shares the main filter and FX. WAV keytracking 0 keeps fixed speed; higher values follow keyboard pitch. Matrix offers Noise Env, Noise Lvl and Noise Tone.

Custom startup WAV folder

With MPC off, copy files to SD:/autorun/wavetables. Relaunch to import. Use unique ASCII names of at most 23 characters including lowercase .wav: letters, digits, dot, hyphen, underscore. Eight custom startup files are supported, shared across WT/Granular/Noise, including legacy autorun/wavetable.wav. Eight factory WAVs are separate.

RIFF/WAVE PCM8/16/24/32 or Float32; mono/stereo mixed to mono; 8-192 kHz; at least 32 frames; maximum 8 MiB/file. Granular/Noise retain up to 262144 frames/source (~5.94 s at 44.1 kHz). WT analyzes/resynthesizes it. Shared PCM pool: 20 MiB, at most 40 imported banks plus Factory. Keep unused files outside auto-import rather than deleting personal samples.

08 / Global, Mixer and Effects

PAD FX selects these separate areas. B1/B2 stay inside that area; the encoder does not change presets. Global pages are shared by all sources and are marked ALL OSC.

GLOBAL page	Controls
FILTER / FILTER COLOR	Cutoff, resonance, env amount / LP12-LP24-HP-BP, drive, level
AMP ADS / AMP	Attack, decay, sustain / attack, release, overall level
VCF ADS / VCF REL	Attack, decay, sustain / release, amount, cutoff
LFO / LFO2 / LFO3	Rate and shape; separate CLOCK pages
VOICE / PAD PLAY	Poly-Mono-Legato, glide, bend / pad base, step-write, legacy WAV capture
ARP / ARP TIME	On, figure, grid / octaves, gate, latch
PERFORM / FINE TUNE	Brightness, Movement, Bite, fader Space / OSC1-3 cents
INFO	Version and mpctoolkit.com

Area / page	K1	K2	K3
MIXER: OSC MIXER	OSC 1 level	OSC 2 level	OSC 3 level
MIXER: MASTER MIX	Overall level	Noise level	Chorus
EFFECTS: DRIVE DLY	Drive	Delay time	Feedback
EFFECTS: SPACE FX	Delay mix	Reverb	Space macro

Normally the fader is cutoff. Exceptions: FM editor selects operator; SOURCES selects layer; PERFORM selects Space; sequencer SETUP chooses Free/MPC clock. Source levels and FX are retained when switching views or areas.

09 / Matrix, LFO clock and arpeggiator

PAD FX > MATRIX. B1/B2 choose MATRIX1-4. K1 Source, K2 Destination, K3 signed Depth. Zero depth is silent. LFO 2/3 require a route; LFO 1 retains its original direct connections.

The Matrix addresses the whole instrument, not just the last edited OSC. All oscillator targets are named OSC 1, OSC 2 or OSC 3. K2 only offers destinations supported by the actual assigned source types. Muted sources are still selectable; Off slots have no per-OSC targets.

Assigned source	Per-OSC targets
Analog	Pitch, Width, Level
FM	Pitch, Level, FM Depth
Wavetable	Pitch, Level, Position, Warp
Granular	Pitch, Level, Position, Grain Size, Density

Common destinations: Cutoff, Pitch, Level, Noise Level/Tone; Width requires Analog, FM Depth requires FM, WT Position requires WT or Granular. Legacy presets offer only common destinations until converted by source editing. Sources: LFO1/2/3, AMP/Filter/Noise envelopes, Velocity, Mod Wheel and Pressure.

Example: OSC 1 Analog, OSC 2 WT, OSC 3 Granular: OSC 3 Grain Size is available; OSC 1 Grain Size is absent. LFO3 > OSC 2 Position scans only OSC 2. The Matrix does not change an OSC source type.

After a source-type change an existing incompatible route is shown as TARGET INACTIVE. It is preserved, never silently reassigned; turn K2 to choose a valid replacement. Four routes and 32 stable destination IDs retain existing preset/MIDI meanings.

LFOs in GLOBAL

Each LFO has free 0.01-30 Hz and a CLOCK page: K1 Free/Tempo, K2 one of 15 divisions, K3 Free/Note/Transport reset. Locked MPC Clock supplies tempo, otherwise synth tempo. Note reset restarts the shared LFO for held voices too. Transport mode resets/aligns with transport.

LFO3 shows 13 forms including stairs, zigzag, bounce, pulse train, orbit and smooth random. Morph warps cycle timing; random patterns repeat eight values.

The 20 arpeggiator figures and 15 straight/triplet/dotted grids remain in GLOBAL ARP/ARP TIME. Notes recorded by the sequencer are input notes; the arpeggiated result is heard on playback/export. Eight voices are shared.

10 / Library and sessions

PAD FX > LIBRARY. Encoder or K1 browses named SD presets. B1 or encoder press loads. K2 moves the name cursor, K3 chooses a character. B2 twice saves; wait for SAVED.



Library keeps explicit Load and Save actions. PAD FX and KNOB FX return to Editor.

Same unedited name updates its selected file. An edited name creates a new file; NAME EXISTS prevents overwriting a different selected preset. Category prefixes are optional. Files: EMBER-8/presets/*.ember, with no fixed count cap. There is one install folder; no slot/clean-library alternative is needed.

The runtime includes 60 named presets: 36 starters plus 24 D-Funk FM sounds. Factory sounds and external MIDI Program Changes remain separate. Optional 500-sound and 20-sound Noise collections are separate downloads.

Save the complete session

PAD FX > SEQUENCER, then B1/B2 to SESSION. Press encoder to request immediate saving of sound, 64-step pattern and clock/record settings. Wait for SESSION SAVED. The existing periodic autosave also remains active. File: MPC-JUP8-SESSIONS/RUN-.../session.cfg, or HOST-... after reconnection.

Restore next launch: with MPC off and SD on PC, back up autorun/performance.cfg, then copy the chosen session.cfg there as performance.cfg. Keep the same source-bank collection. Named presets reference samples by name; session snapshots use numbered banks. Playback/recording start off.

11 / Live sequencer and transport

PAD FX > SEQUENCER. B1/B2 browse LIVE > SAVE WAV > STEP > SETUP > SESSION. Switching pages/areas or pressing B3 does not automatically stop either sequencer. KNOB FX returns to Editor.

Control / page	Action
SEQ REC button	Start/end writing; ending writing leaves playback running
PLAY button	Own synth play/stop
STOP button	Stop own synth pattern; original MPC beat continues while Synth view is active
LIVE knobs	K1 BPM (MPC Sync: readout), K2 grid, K3 length 1-64
LIVE encoder press	Record/end writing
STEP	Encoder selects any step 1-64 and its 16-step bank; pads toggle visible steps; click toggles selected
STEP knobs	K1 main note, K2 velocity, K3 gate
SETUP knobs / fader	K1 Overdub/Replace, K2 count-in 0/1/2 bars, K3 metronome Off/Rec/On; fader Free/MPC Sync
SESSION encoder press	Save complete session now

Record against the MPC beat

1. In MPC view start your saved beat and enable MIDI Clock Out (next page).
2. Return to Synth; PAD FX to Sequencer. Stop the own pattern if needed. LIVE: choose grid and length.
3. SETUP: choose Overdub, one-bar count-in and metronome REC; fader high for MPC Sync. B1/B2 return LIVE.
4. Press SEQ REC or encoder: wait for the next MPC bar and chosen count-in; then play MIDI or pads.
5. Overdub adds notes over loop passes. Press SEQ REC to end writing while playback continues. STOP stops only the synth pattern in Synth view.

Replace clears on the next recording start. Up to eight notes per step are stored. The pattern has 15 grids from 1/4 to 1/64, straight/T triplet/D dotted; length is steps, not bars. SETUP clock/count-in/mode and LIVE grid/length changes require the own pattern to be stopped.

12 / MPC clock and WAV export

In MPC view: SHIFT+PAD8 opens MIDI CONFIG. Set Port External, Sync In Off, Sync Out Midi Clock; confirm with encoder. Stop/Start the original MPC transport once to establish phase. Supported clock: 40-240 BPM, 4/4. Other clock routes/meters need separate validation.

In Synth SETUP the fader selects Free (low) or MPC Sync (high). Stop the own pattern before switching. WAIT CLOCK / WAIT BAR are expected sync states. Original MPC Stop or clock loss can stop/disarm the own synchronized pattern.

Export one finished loop

1. Finish the pattern and adjust the sound; keep the MPC clock running in Sync.
2. B1/B2 to SAVE WAV; press encoder. MPC Sync waits for the next bar; Free starts immediately.
3. Wait for WAV READY and the filename in EMBER-8/Exports. Encoder press during waiting/recording cancels; STOP also cancels the own take.
4. B3 shows MPC. Use its normal browser to load the WAV onto a free pad and save the MPC project.

Stereo PCM16 / 44.1 kHz; one loop, before Main Volume. Includes synth FX, excludes MPC beat/metronome/raw preview. Voices and FX tails are cleared at start; live note-ons are ignored during export; no extra tail is appended.

Cancelled, silent or failed takes are not published as complete WAVs. Existing SEQ files are not overwritten. Up to 64 takes per run including cancellations; no timed synth session limit. Automatic pad assignment is not implemented.

13 / MIDI and control messages

MIDI feature	Current behavior
Input	TRS MIDI works; default channel 1 in performance.cfg
Notes / expression	0-127; sustain, pitch bend, Mod Wheel, Channel Pressure
Program Change	0-87 selects factory sounds 1-88
CC1 / CC64	Mod Wheel / sustain
CC7 / 71 / 74 / 73 / 72	Level / resonance / cutoff / amp attack / amp release
CC116	64-127 synth view; 0-63 MPC view
CC117 >=64	Deliberately unload and restart the MPC app
CC120 / CC123	Panic
USB / poly pressure	USB host power/routing unverified; no poly key-pressure support

Do not assume the MPC powers a USB-C keyboard. The tested route is the external TRS MIDI path. LIVE input and the original MPC may both respond depending on channel/routing configuration; test with a saved project.

Input and channels

Play a TRS MIDI keyboard on channel 1, or set channel in performance.cfg while the MPC is off. Notes cover the full MIDI range independently of the 16 physical pads. External program changes choose factory sounds, not arbitrary named library files.

The exact native UI controls are described in this manual. The separate MIDI-CONTROLS-EN.txt lists the implemented CC map; newer LFO/Noise/operator controls are not all exposed as dedicated CCs.

Return, panic or unload

CC116 changes the view. B3 returns to MPC without stopping playback. CC120/123 panics voices. CC117 >=64 deliberately ends the synth session and requests the original app restart; it is not a navigation shortcut. Save work before using it.

14 / Troubleshooting

Symptom	Check
No sound	Move Main Volume; MIDI channel1; assigned non-Off source and levels
Wrong editor / source Off	KNOB FX: OSC 1/2/3/Noise; header shows actual type; change source only in ASSIGN
Need AMP or LFO	PAD FX GLOBAL, B1/B2 to AMP/LFO/CLOCK
No sample on pad	Save MPC project and samples to SD; select project/bank/layer; green READY
Cannot leave samples	B1/B2 previous/next; PAD FX next area; KNOB FX next editor
Cannot change operator	FM editor fader selects OP; B1/B2 select pages
Export waits	Running MPC clock and bar phase; wait WAV READY
Session save fails	Check writable SD and retry on SESSION page

Firmware target: 1.3.0.12. Current data formats remain performance11/library9/raw preset12/studio session8. New navigation is a device-test beta; startup delay and original recovery procedure are retained. Do not remove the card during file activity.

What to report if something fails

Note the runtime version from INFO, the active page, what the bottom two rows show, the last button combination, whether the MPC beat was running and whether returning to MPC works. Preserve the latest autorun trace and run report on the card. An absent startup question on the automatic profile is not proof of a running synth.

For a stuck note, use panic or return to a saved state. For a missing named sample, check the source filename and import-slot limits. Avoid removing the card while any import, save or export is active. Do not repair/reformat or modify firmware merely to follow this manual.

15 / Reference, limits and package contents

Goal	Route
Oscillator type assignment	PAD FX ASSIGN, K1/K2/K3
Waveform / WT / FM / Grain controls	KNOB FX OSC 1/2/3, B1/B2 page
Noise / Noise WAV	KNOB FX until Noise; B1/B2 page
Pad sample audition/use	WT/Granular/Noise SOURCES, press READY pad
AMP / LFO / Filter / Voice / Arp	PAD FX GLOBAL, B1/B2 page
Per-source and overall levels	PAD FX MIXER
Delay / drive / reverb	PAD FX EFFECTS
Modulation routing	PAD FX MATRIX
Live recording / WAV / session	PAD FX SEQUENCER, B1/B2 page
Presets	PAD FX LIBRARY
MPC / synth	B3 to MPC; PAD FX+KNOB FX switches views

SD paths: autorun/ contains matching runtime and performance.cfg; autorun/wavetables/ custom startup WAVs; autorun/factory-waves/ factory WAVs; EMBER-8/presets/ named sounds and source cache; EMBER-8/Exports/ finished WAVs; MPC-JUP8-SESSIONS/ reports and snapshots; MPC-Sample/Projects/ saved sample-picker projects.

This independent mod is not a native instrument plug-in slot or permanent firmware integration. Own development source is excluded from downloads. Retain MIT/component notices and licenses/zig-glibc-crt-sources.zip. No artist recordings or Akai firmware are supplied.

Website: https://mpctoolkit.com. Screenshots use the real 320x240 native renderer, not hardware photographs. Test the revised controls on a saved project; no claim of on-device validation is made by computer tests.