Start here

EMBER-8 v0.9 is a development beta for MPC Sample firmware 1.3.0.12. This guide explains the current hybrid instrument, sample picker, live sequencer and WAV workflow. The v0.9 changes have passed desktop tests and ARM64 build checks; their controls, stability and CPU load still need testing on the MPC.

Load and play

1. Save your MPC project before loading or deliberately unloading the mod. Keep a backup of the SD card contents.
2. Use the prepared SD card and its autorun folder. The automatic profile requests launch without a confirmation dialog. Cold-boot entry has not been confirmed reliably; if nothing starts, insert the card while the MPC is running, after any save has finished.
3. Loading restarts the MPC application to attach the synth. It should then return to the normal MPC environment with the synth available. This is not a firmware installation.
4. Move Main Volume after startup: the synth begins muted until the control is observed.
5. Hold PAD FX and press KNOB FX to show or hide the synth. The two buttons must overlap. B3 returns to the MPC view.

The normal MPC beat and the synth can sound together; this was heard in earlier hardware tests. v0.9 still needs a device check. Returning with B3 changes the view only: it does not unload the synth or require removing the SD card.

Three buttons below the display

B1, B2 and B3 mean the three context buttons below the screen, counted from left to right. Their functions depend on the current page. Read the footer before pressing one.

First sound

The synth opens on HYBRID. Turn the encoder to browse factory sounds. Strike the pads or use a TRS MIDI keyboard on channel 1. Eight voices are shared across the instrument. Save edited sounds before choosing another preset.

Do not remove the SD while recording, importing or saving. Shut down normally first. No session time limit is configured; a fault can still trigger recovery.

Find your way around

Where	Control	Action
Any synth view	B3	Show the normal MPC view
Sound view	PAD FX	Open the LIVE sequencer
Sequencer	PAD FX	Return to sound editing
HYBRID home	K1 / K2 / K3	Choose source type for A / B / C
HYBRID home	KNOB FX	Edit oscillator A
HYBRID home	B1	Next preset family and matching sound
HYBRID home	B2	Open shared FILTER pages
Oscillator editor	KNOB FX	Next relevant page, then home
WT or Granular editor	B2	Open sample picker
Other oscillator pages	B1 / B2	Previous / next oscillator
Common sound pages	B1 / B2	Previous / next common page
LIBRARY or sample picker	KNOB FX	Return to sound editing

Knob pickup

Continuous parameters use pickup: move the knob through the displayed value before it takes control. A P indicator marks a control waiting for pickup. Source types and other choices respond directly. Outside PERFORM, the fader normally controls cutoff; on PERFORM it controls Space. The sample picker uses the fader for layer selection.

Pads as a keyboard

In sound editing and LIVE, all sixteen pads play chromatic notes with velocity. The initial range is MIDI 48-63. Use PAD PLAY K1 to change the base octave. MIDI accepts notes 0-127 independently of the pad range. In STEP EDIT pads toggle steps; in the sample picker they select samples. In the MPC view they retain their normal MPC role.

On ordinary sound pages, overlapping B1 and B2 returns to HYBRID home. LIBRARY and the sample picker use these buttons for other operations; leave them with KNOB FX.

Build a hybrid sound

There are three source slots, A, B and C. Each can be Off, Analog, FM, Wavetable or Granular. Granular is a fourth synthesis type, not a fourth oscillator slot. All active slots share the eight-voice allocator, filter, envelopes, modulation and effects.

Page	K1	K2	K3
A B C MAIN	Source type	Level	Coarse tune
ANALOG	Waveform	Pulse width	PWM depth
WT	Wave bank	Position	LFO scan depth
FM	Algorithm	Ratio	Depth
GRANULAR	Wave bank	Position	Grain size
GRAIN MOTION	Density	Spray	LFO scan depth
START Analog or WT	Phase	Phase random	Fine tune
START FM	Phase	Phase random	Feedback
START Granular	Phase	Phase random	Forward / Reverse

From home press KNOB FX to enter A MAIN. Use KNOB FX to cycle the pages relevant to its selected type. On ordinary oscillator pages B1/B2 move between sources. On WT and Granular pages B2 instead opens SAMPLES. The picker K3 selects its destination A/B/C. Fine tuning for all three slots is also available on the shared FINE TUNE page.

Analog

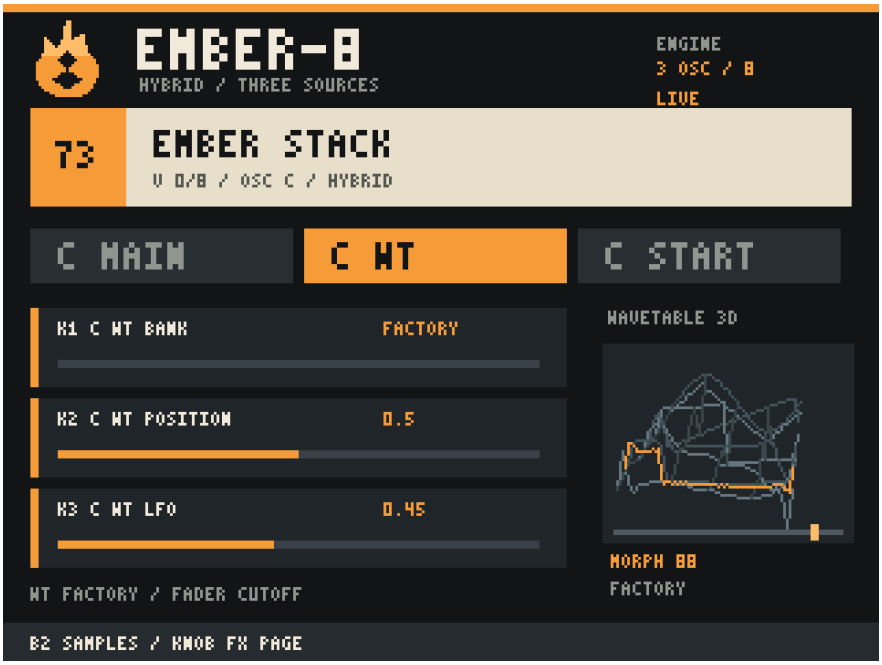
Saw gives a bright starting point; Pulse responds to width and PWM; Triangle and Sine suit softer layers and bass reinforcement. Tune a second source down an octave for a sub layer. Pulse-width modulation applies to Pulse.

FM

Four operators offer 4 STACK, 2 PAIRS, 3 MODS and ADDITIVE routings. Start with ratio 1 or 2 and low depth; add feedback gradually. The FM page shows its routing. This is a compact engine, with no individual operator envelope or arbitrary routing editor. High ratios and feedback can alias.

Coarse tuning spans -36 to +36 semitones; fine tuning spans +/-100 cents. Phase changes new-note start position. Random varies it per note. These controls do not reset every held note.

Wavetable and Granular



Software-rendered v0.9 WT page. The orange slice follows table position and modulation.

Wavetable

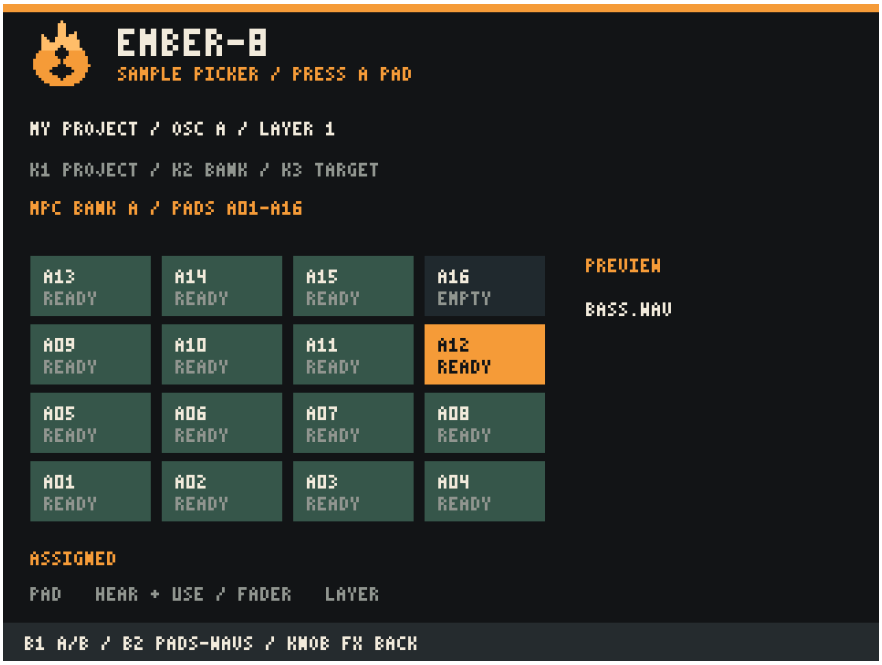
WT turns the selected audio into eight periodic frames and interpolates between them. Position moves through the frames; Scan adds motion from the shared LFO. The perspective display is a table view, not an oscilloscope. A source sample will therefore sound different from ordinary sample playback.

Granular

Granular reads short grains from the source audio. Position chooses the region; size sets 10-250 ms; density sets 1-40 grain triggers per second; spray adds position variation; scan moves the read region. START K3 selects forward or reverse. Each voice and source supports up to four simultaneous grains. Dense settings and complex layers need CPU testing on the device.

Both types can use saved MPC pad samples or the eight included WAVs. The easiest route is B2 SAMPLES on the selected WT or Granular editor.

Choose and hear a sample



Sample picker preview. A highlighted pad shows the selected saved sample.

1. Load samples onto MPC pads normally and save the project on this SD card.
2. Open the synth WT or Granular page and press B2.
3. In MPC PADS mode, use K1 to choose the saved project and track. B1 or K2 chooses bank A/B. The fader chooses layer 1-8; K3 chooses target oscillator A/B/C.
4. Press a pad. Its saved sample is assigned and auditioned automatically. Empty pads are marked; there is no separate LOAD step.
5. Press KNOB FX to return to sound editing.

B2 switches between MPC PADS and FACTORY WAVS. In FACTORY WAVS, pads 1-8 select Warm Saw, Hollow Pulse, Vowel Sweep, Metal Bells, Tape Grains, Air Texture, Plucked Keys and Motion Cloud. These are original generated sources, not third-party recordings.

Preview plays raw mono audio for up to two seconds through Main Volume. A new selection replaces it; leaving the picker stops it. Preview writes no pattern notes and is excluded from the exported WAV.

The browser reads saved SD projects, not unsaved pad assignments or internal-memory projects. It rescans when opened. The saved project bank is the initial choice; select A/B explicitly if needed. Import reads a layer region without MPC pad effects, warp, tuning, reverse or layer mixing.

Record a melody live

Press PAD FX in the synth sound view to open LIVE. Use pads or MIDI to play while the original beat is audible. Set the synth BPM to match the MPC: tempo, start position and transport are not synchronized automatically. Manual starts may drift; dependable clock sync is not yet implemented.

Mode	B1	B2	K1 / K2 / K3
LIVE	Record / end writing	Play / stop	BPM / grid / length
SAVE WAV	Export one full loop	Play / stop or cancel	No edit action
STEP EDIT	Next 16-step page	Play / stop	Note / velocity / gate
RECORD SETUP	Record / end writing	Play / stop	Overdub or Replace / count-in / click

KNOB FX cycles LIVE, SAVE WAV, STEP EDIT, RECORD SETUP, then LIVE. Stop playback before changing tempo, grid, length or recording setup.

Recommended first take

1. On LIVE, stop with B2 if necessary. Set K1 BPM, K2 grid and K3 length 1-64.
2. Use KNOB FX three times to reach RECORD SETUP. Choose OVERDUB, a one-bar count-in and metronome REC. One count-in bar contains four quarter-note beats.
3. Press KNOB FX once to return to LIVE. Press B1 REC. Wait for the count to finish, then play.
4. Keep playing across loop passes to add notes. Press B1 again to end note writing while the pattern keeps playing.
5. Press B1 during playback for another overdub, or B2 to stop.

How recording behaves

OVERDUB retains the pattern. REPLACE clears it once when its recording pass starts; there is no undo. Starting recording from stopped uses the selected count-in. Starting an overdub during playback begins writing immediately. Count-in always clicks; metronome choices are OFF, REC and ON.

Note starts quantize to the nearest grid. Up to eight notes can start on each step; another matching pitch updates that note. A ninth distinct pitch is skipped and STEP FULL is shown. Releases store duration. Pads play melodies in LIVE, not step switches. Sustain-event capture and per-step parameter automation are not implemented.

Edit and export the sequence

Resolution and step editing

The fifteen grids are 1/4, 1/4T, 1/4D, 1/8, 1/8T, 1/8D, 1/16, 1/16T, 1/16D, 1/32, 1/32T, 1/32D, 1/64, 1/64T and 1/64D. T means triplet; D means dotted. At straight 1/16, 64 steps equal four bars of 4/4. A finer grid shortens the loop at the same step count.

In STEP EDIT, pads toggle the visible sixteen steps, B1 changes the step page, and the encoder selects a step. K1 sets note, K2 velocity and K3 gate for the main note. This is a compact editor, not a piano roll for every note in a chord.

Save one complete loop as WAV

1. Finish the pattern and adjust the sound.
2. From LIVE press KNOB FX once for SAVE WAV.
3. Press B1 SAVE. Playback restarts cleanly at step 1 with note writing off and no count-in.
4. Wait for WAV READY and the displayed filename. Playback continues after the export.
5. Press B3 for the MPC view. Use its normal sample browser to load EMBER-8/Exports/SEQ-001.wav, or the displayed later number, onto a free pad. Save the MPC project.

The file is stereo PCM16 at 44.1 kHz. It contains one complete synth loop including effects, before Main Volume. It excludes the MPC beat, metronome and sample preview. Live note-ons are ignored during export. Old voices and effect tails are cleared at the start; no extra tail is appended after the loop.

B2 cancels an export in progress. A cancelled partial loop is not published as a finished WAV. Normal playing and live note recording do not automatically create WAV files. Existing SEQ files are never overwritten. Export is not automatically assigned to an MPC pad.

Recording is currently limited to 64 takes per run, including cancelled starts. This limit does not end the synth session. The legacy external CC118 recording path remains available, but SAVE WAV is the recommended sequence workflow.

Shape and save your sound

Shared sound pages

From HYBRID press B2 to enter the common pages. The resonant low-pass filter, amplitude and filter ADSRs, LFO, voice mode and glide act on the combined sound. MATRIX1-4 each provide source, destination and signed depth. Sources are Off, LFO, amp envelope, filter envelope, velocity, Mod Wheel and Channel Pressure. Destinations are Cutoff, Pitch, Pulse Width, Level, FM Depth and WT Position. FM/WT targets affect active sources of that type; separate A/B/C destinations are not exposed.

Arpeggiator effects and macros

ARP and ARP TIME provide enable, 20 figures, grid, octave range, gate and latch. Figures include Up, Down, As Played, Random, Converge, Diverge, Octave Jump, Fifth Walk, Chord, 3-3-2, Euclid 5/8 and Brownian. The recorder stores your input notes; the resulting arp is heard in the WAV.

Chorus, drive, delay and reverb are shared effects. On PERFORM, K1 is Brightness, K2 Movement, K3 Bite and the fader Space. These macros change several sound aspects together. Start gently when mixing the synth with MPC samples.

Factory presets

There are 88 factory sounds: Analog 1-56, FM 57-64, WT 65-72, Hybrid 73-80 and Granular 81-88. On HYBRID, B1 cycles preset families; the encoder browses the current family. Changing presets replaces the current sound.

Save a named user preset

Open LIBRARY via the common pages. Encoder or K1 chooses one of 32 slots. K2 chooses a character position; K3 chooses a character. Names allow up to 20 characters. Press B2 once for confirmation, then release and press B2 again to save or replace. Wait for SAVED. B1 loads the slot. KNOB FX returns home.

User slots live in EMBER-8/presets/slot-01.ember through slot-32.ember. They retain the three sources and their named bank references, shared parameters, effects, arp and macros. A missing bank falls back to Factory. Keep source WAVs and the pad-sources.json cache with your library; a preset alone is not a portable audio bundle.

Files MIDI and troubleshooting

Sessions and source limits

Changed sound and sequence settings are periodically saved as session.cfg in the active MPC-JUP8-SESSIONS/RUN-... folder, with HOST-... subfolders after reconnection when needed. With the MPC off, copy a chosen session.cfg to autorun/performance.cfg to restore it on the next launch. Playback and recording start off. Keep the same source collection for session bank numbers; named library presets are preferable for recalling sounds.

Saved-pad imports are limited to 262144 frames per source, about 5.94 seconds at 44.1 kHz. The shared PCM pool is 20 MiB with 40 imported banks plus Factory. Published banks are retained for active voices; repeated distinct imports eventually fill the pool. Eight own launch-time WAVs are supported in autorun/wavetables in addition to the eight bundled sources. Use safe ASCII names of at most 23 characters including .wav. Input limits: 8 MiB, mono/stereo PCM8/16/24/32 or Float32, 8-192 kHz. Granular regions are bounded; WT is resynthesized.

MIDI essentials

External TRS MIDI defaults to channel 1; the setting is editable in performance.cfg. MIDI keyboards cover 0-127. Sustain, pitch bend, Mod Wheel and Channel Pressure are supported; polyphonic key pressure is not. USB host power and routing remain unverified. Program Changes 0-87 select factory presets 1-88. CC116 shows synth at 64-127 or MPC at 0-63. CC117 deliberately unloads the session and restarts the MPC application. CC120/123 send panic. The separate MIDI-CONTROLS.txt provides the parameter CC map.

Symptom	Check
Synth is silent	Move Main Volume; check channel 1, synth input, source level and source type.
Knob does not change value	Cross the displayed value to satisfy pickup.
No sample on the chosen pad	Save the project on SD; reopen SAMPLES; check project, track, A/B bank and layer.
Library will not close	Use KNOB FX.
WAV is missing	Wait for WAV READY; check Exports. Cancelled, silent or failed takes are not completed loops.
Beat and synth move apart	Tempo and transport are not automatically synchronized.
Unexpected restart or blank view	Retain autorun/JUP8_V04_*.txt and the latest run report after normal shutdown.

This is an independent development project, not an Akai product or official plug-in. No original firmware or internal-storage modification is part of this workflow. Earlier hardware success does not establish v0.9 stability.