

BKLVA

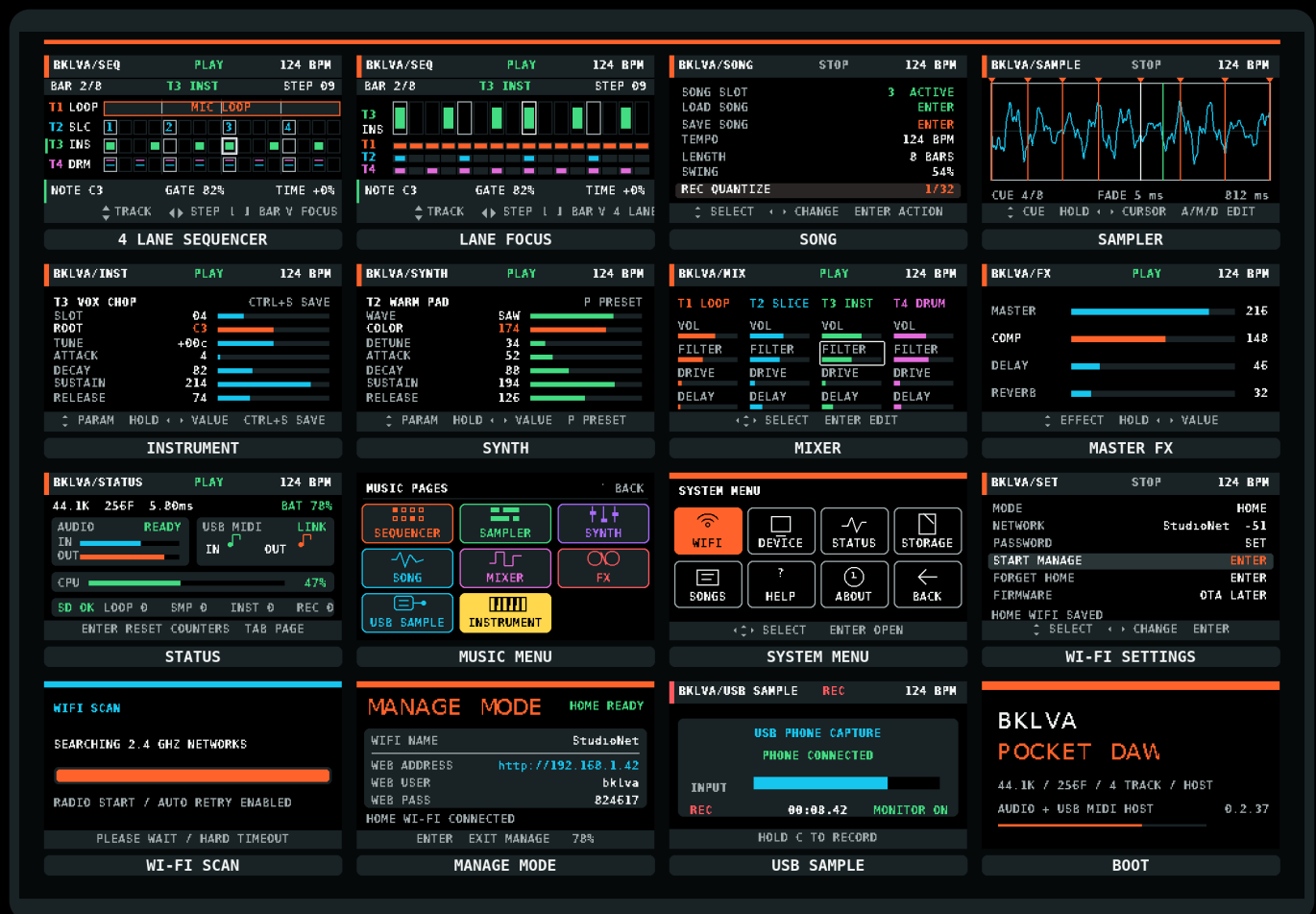
POCKET DAW

THE CARDPUTER MUSIC WORKSTATION

Complete user manual for M5Stack Cardputer ADV

VERSION 0.2.37

44.1 KHZ / 4 TRACKS / USB MIDI



RECORD / SAMPLE / SEQUENCE / SYNTHESIZE / MIX

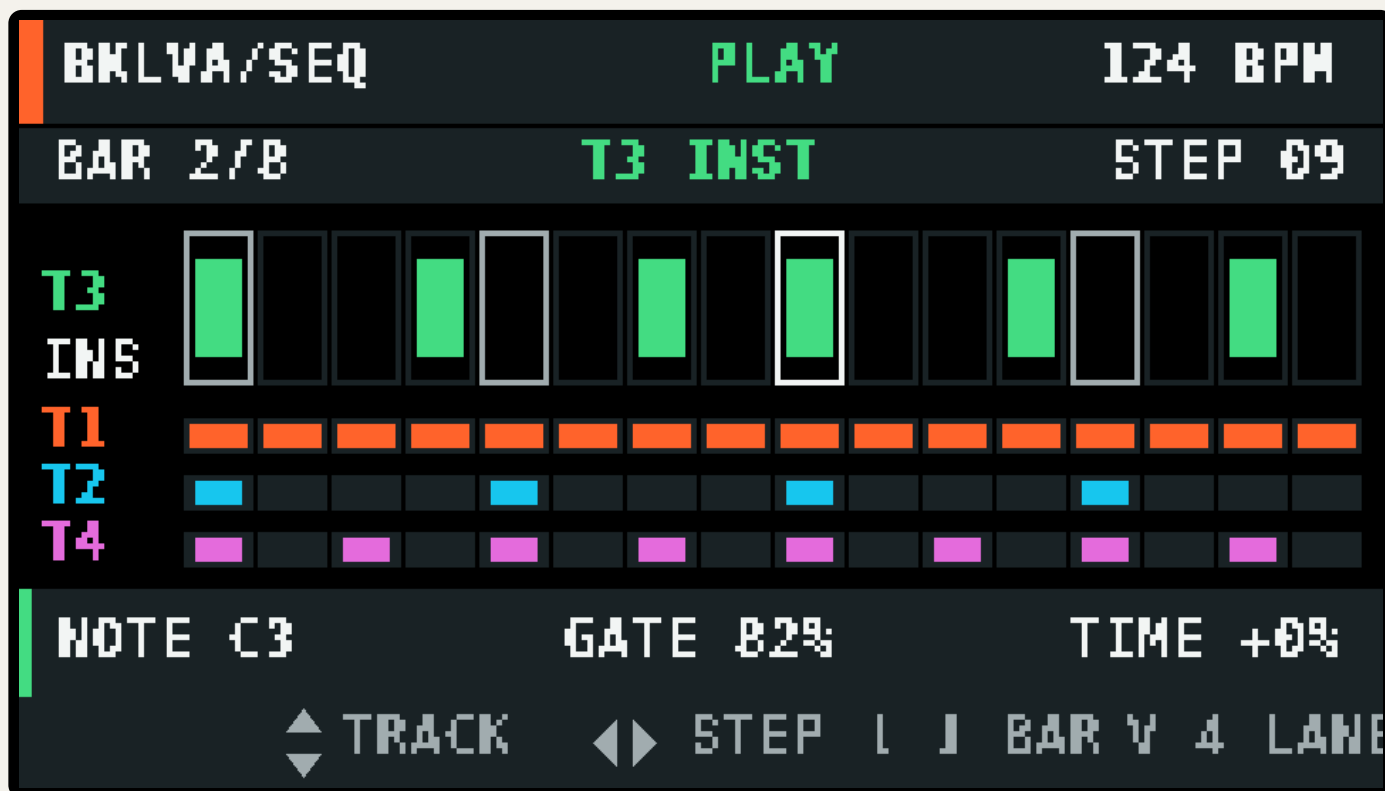
A complete pocket workstation with SD songs and USB MIDI.

BKLVA POCKET DAW

M5STACK CARDPUTER ADV

USER MANUAL / JULY 2026

A STUDIO THAT FITS IN YOUR POCKET



BKLVA Pocket DAW turns the M5Stack Cardputer ADV into a standalone music workstation for recording loops, chopping samples, building beats and playing synth or sample instruments. Audio runs at 44.1 kHz; songs and long audio live on the SD card.

MUSIC ENGINE

- 4 tracks, up to 8 bars
- Loop, Slice, Synth, Drum and Instrument track types
- Quantized or unquantized live recording
- Per-track mix and master effects

SAMPLING

- Hold-to-record microphone sampler
- Long SD-streamed samples and loop tracks
- Up to 16 movable cue points
- USB phone capture and master resampling

PERFORMANCE

- 6-voice editable synthesizer
- 4-voice chromatic sample instrument
- 8-part synthesized drum kit
- Class-compliant USB MIDI input and output

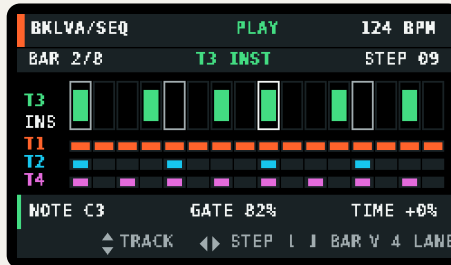
STORAGE AND MANAGEMENT

- 8 complete song slots
- Browser-based SD file manager over Wi-Fi
- Direct access point or remembered home Wi-Fi
- Import standard PCM WAV files

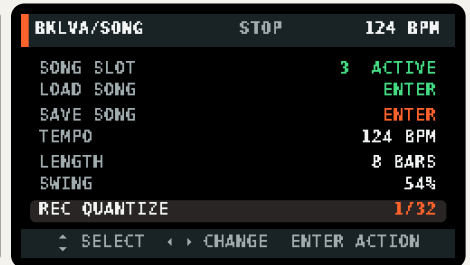
ALL MUSIC SCREENS



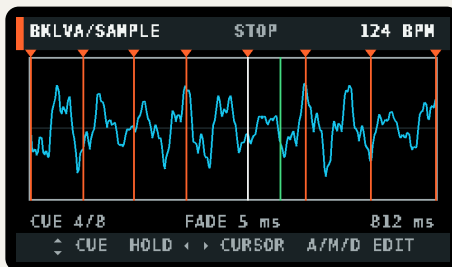
4 LANE



LANE FOCUS



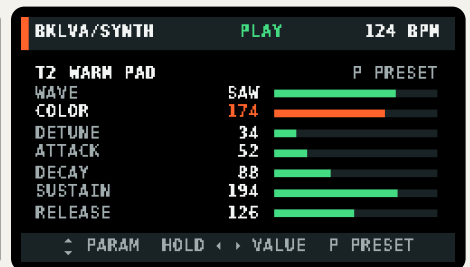
SONG



SAMPLER



INSTRUMENT



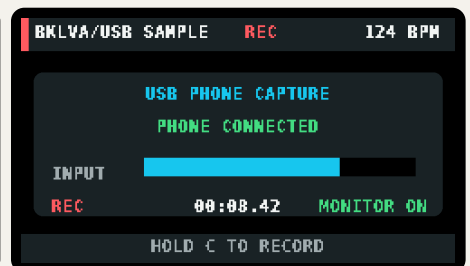
SYNTH



MIXER



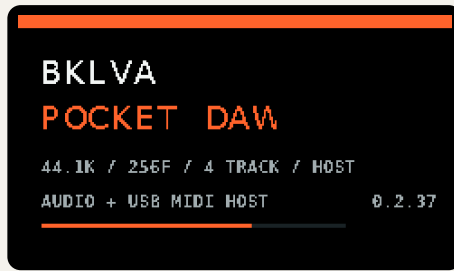
MASTER FX



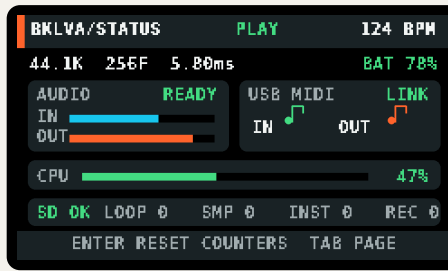
USB SAMPLE

Representative views of the 0.2.37 interface. Values, meters, notes and waveforms change with the active song.

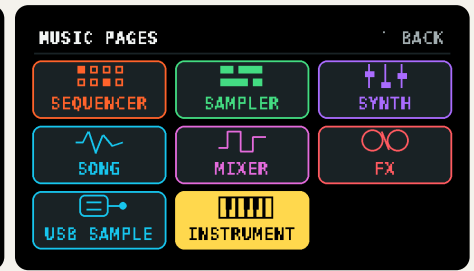
SYSTEM AND UTILITY SCREENS



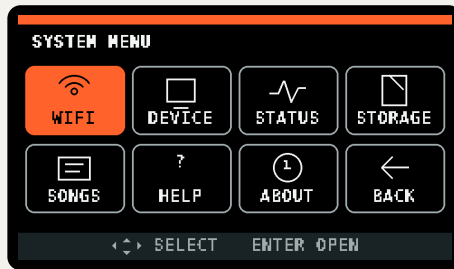
SPLASH



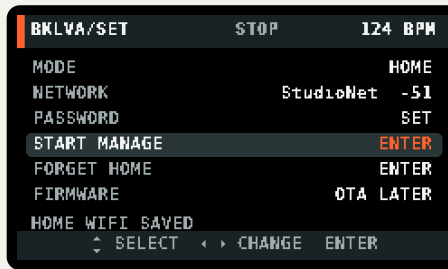
STATUS



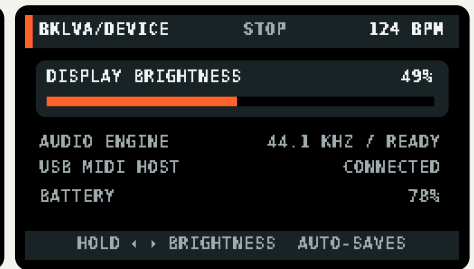
MUSIC MENU



SYSTEM MENU



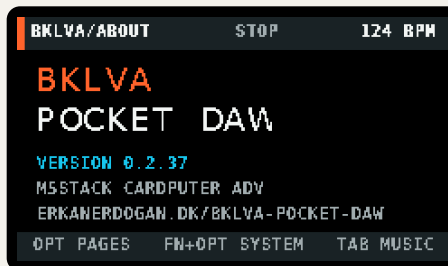
WI-FI SETTINGS



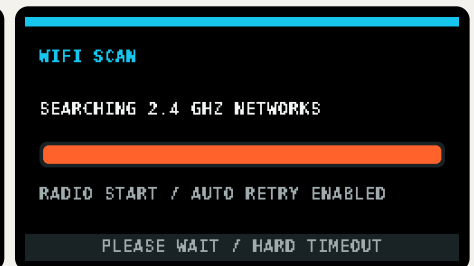
DEVICE



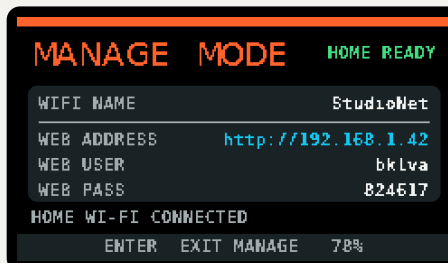
HELP



ABOUT



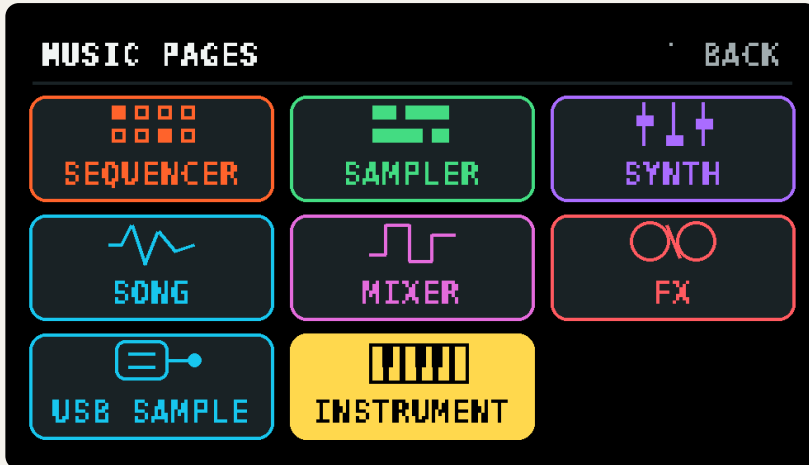
WI-FI SCAN



MANAGE MODE

Representative 0.2.37 views are shown only for screens included in this release. Song access from System Menu opens the same Song page shown on the previous page; Back returns without opening another page.

POWER ON AND FIND YOUR WAY



Cold boot: the BKLVA splash stays on screen for about 2.5 seconds. Switching to or from USB Sample skips this delay.

SD card: leave your existing card in place. The firmware creates /BKLVA_DAW when needed.

CORE NAVIGATION

ARROWS Navigate directly. Hold an arrow to repeat.

TAB Cycle through the music pages.

OPT Open Music Menu; press OPT again to open the selected tile.

FN+OPT Open System Menu. One press returns to its main page; another leaves it.

ESC (`) Close Music Menu and return to the last selected page.

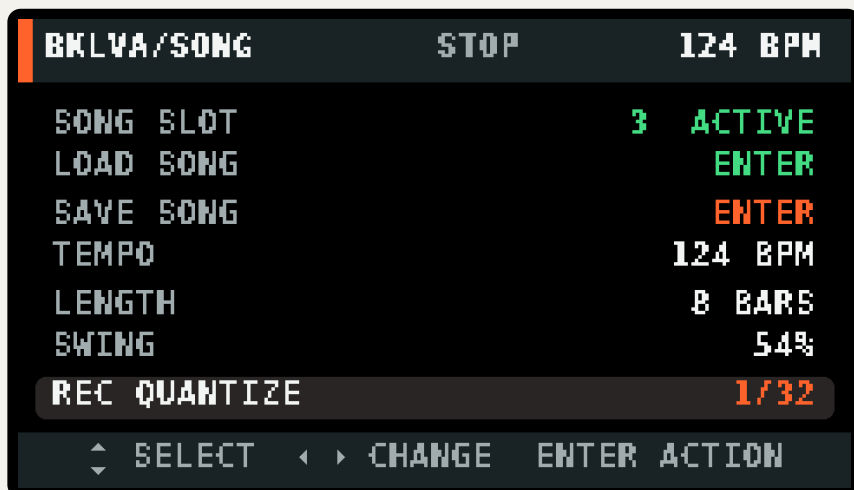
SPACE Start or stop transport.

FN+LEFT / RIGHT Change tempo from a music page.

A GOOD FIRST FIVE MINUTES

1. Open Song and choose tempo, length and quantize. 2. Return to Sequencer. 3. Press M to choose a track type. 4. Rehearse with the performance keys. 5. Press R to arm, then use Step Record or press Space for Live Record.

SET UP AND SAVE THE WHOLE PROJECT



SONG SLOTS

There are 8 complete song slots. A slot can show ACTIVE, SAVED or EMPTY. Load and Save require a second press of Enter, protecting against accidental replacement.

SONG CONTROLS

TEMPO

40-240 BPM

LENGTH

1, 2, 4 or 8 bars

SWING

50-75%

REC QUANTIZE

Off, 1/4, 1/8, 1/16, 1/32 or 1/64

COUNT-IN

Off, 1 bar or 2 bars

METRONOME

Off, Rec Only or On

CLICK LEVEL

Independent click volume

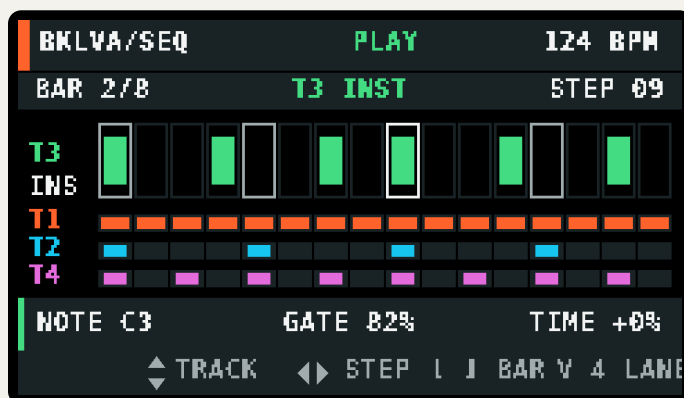
SAVING

Ctrl+S saves the current project from music pages. The Song page is the place to choose another slot, load it, or deliberately save/overwrite it. The last active song is recalled on boot.

FOUR LANES OR ONE LANE IN FOCUS



4 LANE



LANE FOCUS

Press V to toggle directly between the two views. Both edit the same pattern and follow the active bar while transport runs.

4 LANE

All four tracks remain equally visible. This is the fastest view for reading the whole arrangement, checking drum density and seeing how parts interact.

LANE FOCUS

The selected lane grows into a roomy 16-step editor. The other three lanes remain as thin event-position overviews. The detail strip shows note/cue/hits, recorded length and timing.

MOVE AND EDIT

- Up/Down: select track
- Left/Right: select step
- [/]: previous or next bar
- B: cycle 1/2/4/8 bars while stopped
- Backspace: delete selected step while stopped
- Fn+Backspace: clear the entire selected lane

TRACK STATE

Q mutes the selected track. Its entire lane dims and shows a red M marker. O solos the selected track; every non-solo lane dims. The header always reports the active mute or solo state, so silence is never mysterious.

REHEARSE, PLACE, STEP RECORD, LIVE RECORD



SAFE REHEARSAL

Play the selected Synth, Slice, Drum or Instrument track without arming it. Nothing is written. While stopped, Enter places the last played sound at the cursor.

01

CHOOSE THE TRACK

Use Up/Down, then press M if its type needs to change.

02

ARM RECORDING

Press R while stopped. The selected track enters Step Record.

03A

STEP RECORD

Play a key or MIDI note. The cursor advances. Recording stops when it reaches the final song step.

03B

LIVE RECORD

After arming, press Space. Perform while the song runs. Count-in and record quantize come from Song.

04

FINISH

Press R to disarm or Space to stop. Stopping transport automatically clears the arm for the next playback.

LIVE-RECORD BEHAVIOR

Your direct performance is heard immediately. A newly recorded event does not echo again in the same pass; it begins on the next loop. Synth and Instrument notes preserve the performed hold length.



A Loop track streams a mono 44.1 kHz WAV from SD. Recording is bar-locked so the result repeats from exactly the same musical position instead of drifting.

START AND FINISH

R while stopped: recording begins on the next exact bar boundary, after Count-In if enabled.

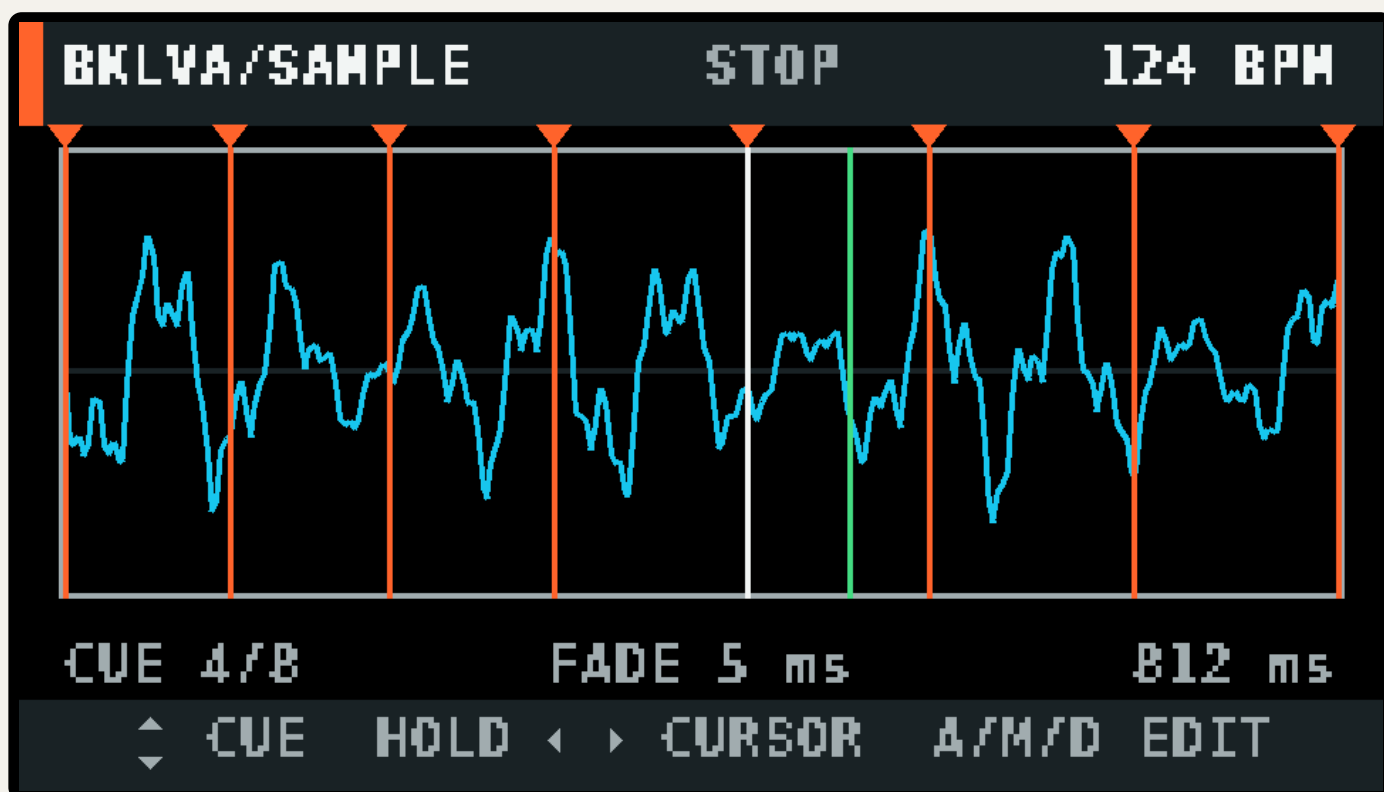
R while recording: schedules a clean stop at the next exact bar.

STOP EARLY

Space stops immediately. Pocket DAW pads only the unfinished remainder of that bar with silence. It does not stretch or repeat the recorded sound, so the take remains honest and aligned.

PRACTICAL WORKFLOW

- Set the song length before recording.
- Use Count-In when you need hands-free preparation.
- Use R for a full musical ending; use Space for an immediate stop.
- The new recording replaces that track's current Loop WAV.
- Back up important audio before recording over a track.



CAPTURE AND AUDITION

Hold C to record the built-in microphone. Release C to stop; transport is not required. The take streams to SD, receives automatic end cleanup, then builds its waveform and cue cache. Enter auditions the selected cue.

NAVIGATE THE WAVEFORM

- Up/Down: previous or next cue
- Hold Left/Right: move cursor
- Fn+Up / Fn+Down: jump to start/end
- Z: horizontal zoom 1x-16x
- Shift+Z: vertical zoom 1x-8x

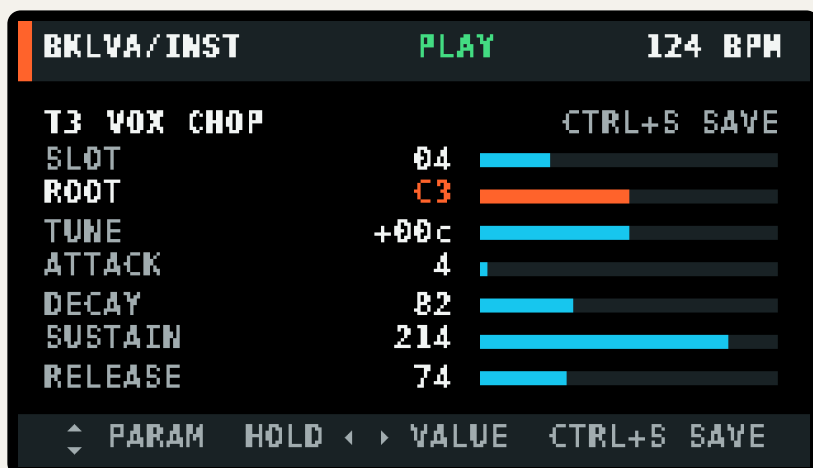
CUE EDITING

A adds a cue at the cursor. M moves the selected cue. D deletes it; Cue 1 remains anchored at the sample start. A sample can hold up to 16 cues. F changes the per-slice fade to soften clicks.

BRING AUDIO IN

L imports /BKLVA_DAW/IMPORT.WAV. PCM16 mono or stereo WAV files from 8-96 kHz are converted to 44.1 kHz mono. X starts/stops master resampling. USB Sample captures phone audio in its own dedicated mode.

TURN ONE SLICE INTO A CHROMATIC VOICE



CREATE IT

On Sampler, select a cue and press Fn+I while stopped. The slice is copied into the first free global Instrument slot and the selected track becomes an Instrument track.

PLAY AND SHAPE

Keyboard: A W S E D F T G Y H U J K. Use - / + to change octave. USB MIDI plays the selected Instrument track chromatically.

PATCH PARAMETERS

Slot, Root, Tune, Attack, Decay, Sustain, Release, Filter, Resonance, Loop, Gate and Mode. Mode selects mono or four-voice polyphony. Changing Root safely stops active notes before retuning.

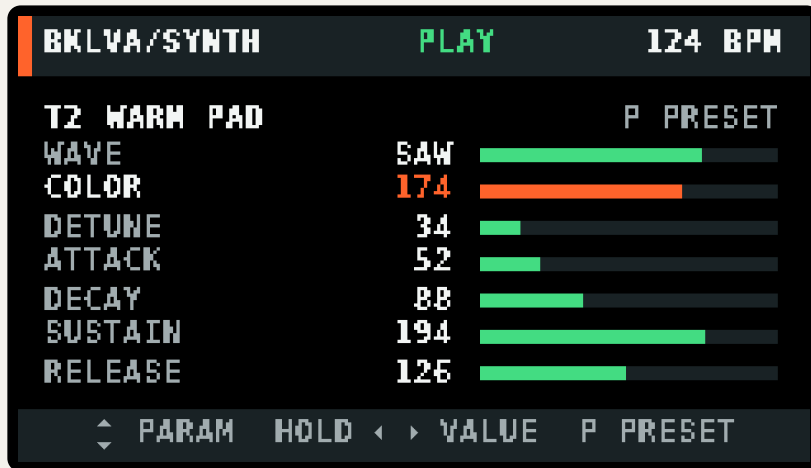
EDIT AND SAVE

Up/Down chooses a parameter. Hold Left/Right for continuous values; Slot, Loop and Mode change one step per press. Ctrl+S saves the patch. There are 16 global instrument slots shared by songs.

FILES ON SD

Each instrument uses a WAV plus a BKL patch in /BKLVA_DAW/INSTRUMENTS. Keep each matching pair together when backing up or moving an instrument. Instrument tracks use the same Step Record and Live Record workflow as Synth tracks.

SIX VOICES AND EIGHT STARTING POINTS



PRESETS

BASIC, SUB BASS, ACID BASS, SOFT POLY, PLUCK, WARM PAD, CHIP LEAD and ORGAN. Press P to move through presets.

PERFORMANCE

Play with A W S E D F T G Y H U J K or a USB MIDI keyboard. Use - / + for octave. Newly recorded notes preserve how long you actually held them; manually placed notes use the patch Gate.

OSCILLATOR AND VOICE

Wave: Saw, Pulse, Triangle or Blend.
 Color: harmonic character or pulse shape.
 Detune: voice spread.
 Mode: mono or poly.
 Polyphony: up to six voices.

MOVEMENT AND CONTOUR

Attack, Decay, Sustain, Release, Cutoff, Resonance, Envelope Amount, LFO Rate, LFO Depth and Gate. Up/Down chooses a parameter; hold Left/Right for broad changes.

RECORDING TIP

For expressive chords, leave Rec Quantize at 1/16 or finer and let the recorded Gate preserve your phrasing. If a manually placed note feels too long or short, adjust Gate on the Synth page.

BKLVA/SEQ **PLAY** **124 BPM**

BAR 2/8 **T3 INST** **STEP 09**

T3 **INS**

T1

T2

T4

NOTE C3 **GATE 82%** **TIME +0%**

TRACK **STEP 1** **BAR V 4** **LANE**

THE KIT

1 KICK

2 SNARE

3 CLOSED HI-HAT

4 PERCUSSION

5 OPEN HI-HAT

6 CLAP

7 TOM

8 CYMBAL

BUILD A PATTERN

Select a Drum track and rehearse with keys 1-8. Press Enter to place the last hit, use Step Record for deliberate entry, or Live Record for a performance. Multiple drum voices can share one step.

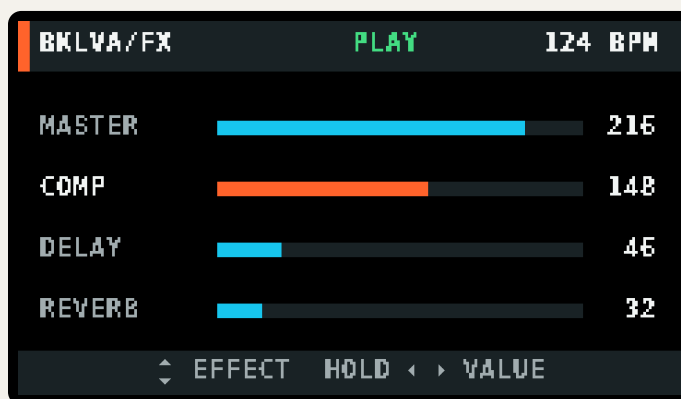
USB MIDI

When the selected track is Drum, incoming MIDI notes trigger the eight drum voices instead of the Synth. The same safe rehearsal, arming, quantize and next-loop playback rules apply.

FOUR CHANNEL STRIPS AND A PROTECTED MASTER



MIXER



MASTER FX

MIXER NAVIGATION

Use arrows to choose a track and parameter. Press Enter to edit; any arrow changes the value. Press Enter again to leave edit mode and move to another control. Held arrows accelerate large changes.

PER-TRACK CONTROLS

Volume, Filter, Drive and Delay send. Filter starts in the center: move left for high-cut, return to center for neutral, move right for low-cut.

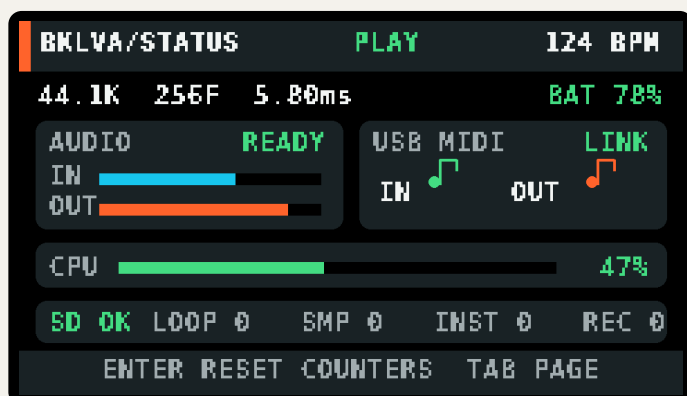
MASTER EFFECTS

Master sets final level. Comp controls compression. Delay sets the master delay return. Reverb adds the damped ambience. Up/Down selects; hold Left/Right to adjust.

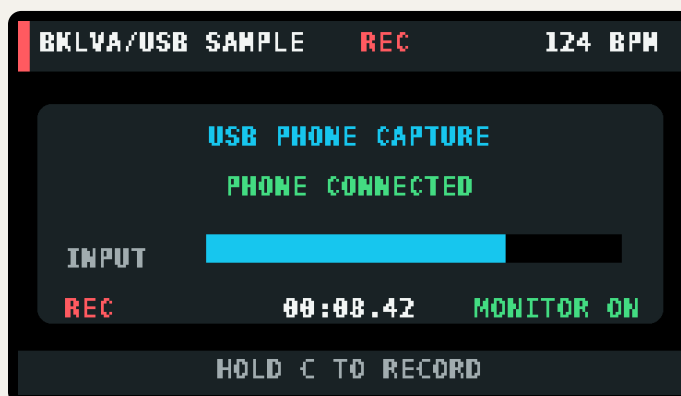
CLEAN OUTPUT

A fixed final limiter catches accidental overloads after the master effects. It is automatic and intentionally has no page control. Good gain staging still sounds better: lower hot track volumes or effects before relying on the limiter.

MIDI HOST IN THE DAW, PHONE AUDIO IN USB SAMPLE



NORMAL DAW / USB MIDI



USB SAMPLE

USB MIDI

Normal DAW mode accepts a class-compliant USB MIDI keyboard. MIDI plays the selected Synth, Instrument, Drum or Slice track. Start, Continue and Stop messages control transport. Status shows link and input/output note activity.

POWER AND CABLES

A battery-powered keyboard is ideal. The Cardputer is not a strong USB power source; use a powered adapter or hub for devices that need bus power. If Status remains WAIT, check host adapter, cable and keyboard power.

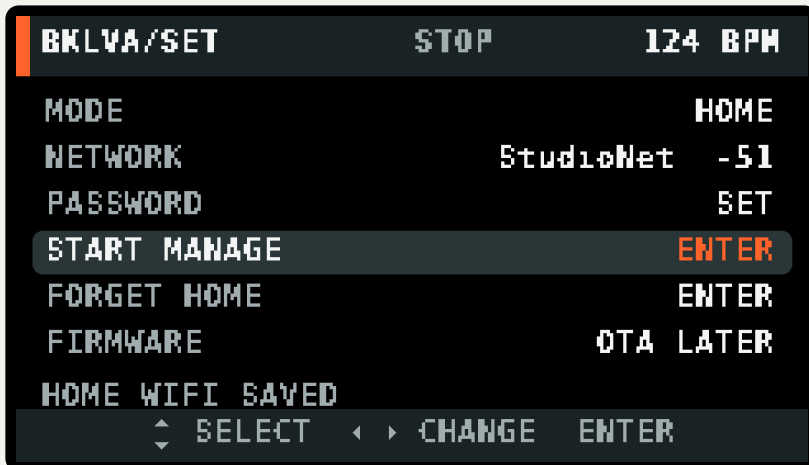
USB SAMPLE

Open Music Menu and choose USB SAMPLE. The device changes into a dedicated USB Audio capture application. Connect the phone, confirm PHONE CONNECTED, enable Monitor if wanted, then hold C to record.

WHY TWO MODES?

The ESP32-S3 USB controller cannot be host MIDI and phone-audio device at the same time. Pocket DAW switches cleanly between two applications. Returning to the DAW skips the cold-boot splash and imports the captured audio as the current sample.

MANAGE SONGS AND SAMPLES FROM A BROWSER



EXCLUSIVE MANAGE MODE

Wi-Fi and the web server temporarily take over resources used by realtime audio. Stop playback, enter Manage Mode, finish transfers, then exit to return to music. Never remove power during a transfer.

HOME WI-FI

Open Fn+OPT, then Wi-Fi. Set Mode to HOME, select Network and press Enter. Pocket DAW pauses audio and restarts into its dedicated 2.4 GHz scan. Wait for the automatic retry and hard timeout. It returns to Wi-Fi settings; choose a network, enter its password, then Start Manage. The selection and password are remembered.

DIRECT WI-FI

Set Mode to DIRECT and Start Manage. Join the BKLVA network shown on the Cardputer using its displayed Wi-Fi key. This works without a home router.

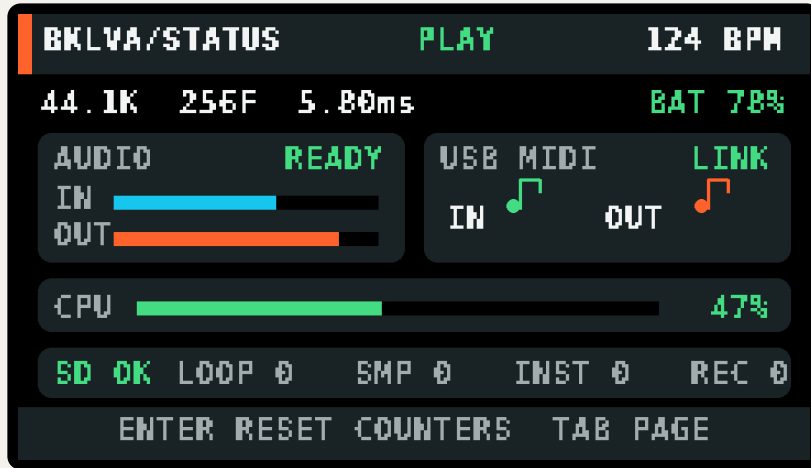
OPEN THE BROWSER

The Manage screen shows the exact web address, username bklva and a device-specific password. Enter those values in a browser on the same network. The web UI browses, uploads, downloads, renames and deletes content inside /BKLVA_DAW.

FILE SAFETY

Back up irreplaceable work before moving or deleting files. Wait until TRANSFER IN PROGRESS disappears, then press Enter to exit Manage Mode. RETURNING TO MUSIC and the short restart are normal; the active song is restored automatically. Firmware OTA is marked OTA LATER and is not available in 0.2.37.

STATUS, DEVICE SETTINGS AND TROUBLESHOOTING



STATUS AT A GLANCE

Audio readiness, input/output level, USB MIDI link and activity, CPU, battery and SD state are collected here. Press Enter to reset the performance counters.

PERFORMANCE COUNTERS

LOOP

Loop-track SD playback underruns. It should normally stay at 0.

SMP

Sampler-stream underruns. It should normally stay at 0.

INST

Chromatic Instrument stream underruns. It should normally stay at 0.

REC

Audio blocks dropped while writing. It should normally stay at 0.

DEVICE PAGE

Adjust display brightness with held Left/Right. The page also reports audio-engine state, USB MIDI host state and battery. Brightness saves automatically.

IF AUDIO BREAKS UP

Check which counter rises. Simplify the affected streaming tracks, use a faster SD card, reduce heavy effects, then reset counters and test again. Muting does not stop stream work; clearing an unused track does.

COMPLETE KEYBOARD GUIDE

GLOBAL AND SEQUENCER

ARROWS

Navigate; hold to repeat

TAB

Cycle music pages

OPT

Music Menu / open selected tile

FN+OPT

System Menu / back / exit

ESC (`)

Close Music Menu

SPACE

Transport play / stop

FN+LEFT/RIGHT

Tempo down / up

M

Cycle selected track type

Q / O

Mute / solo selected track

V

Toggle 4 Lane / Lane Focus

[/]

Previous / next bar

B

Cycle 1/2/4/8 bars while stopped

RECORDING AND INSTRUMENTS

R

Arm Step Record / Live Record

ENTER

Place last played sound while stopped

BACKSPACE

Delete selected step while stopped

FN+BACKSPACE

Clear selected track

A-K

Play Synth / Instrument keyboard

1-8

Play drum voices; preview slices

- / +

Change performance octave

C (HOLD)

Record microphone sample

A / M / D

Add / move / delete sample cue

Z / SHIFT+Z

Horizontal / vertical waveform zoom

F

Change slice fade

L / X

Import WAV / master resample

FN+I

Create Instrument from selected slice

CTRL+S

Save project or Instrument patch

REMEMBER

Plain arrows are arrows. Fn is only needed when the shortcut explicitly says Fn. When Fn is held, the on-screen footer changes to show the available Fn shortcuts.

FLASH 0.2.37 AND KEEP MAKING NOISE

RELEASE FILE

BKLVA-POCKET-DAW-0.2.37-full.bin

FLASH ADDRESS 0x0000

8 MB FLASH / 80 MHZ / DIO

THE SD CARD DOES NOT NEED TO BE ERASED

M5BURNER: SEARCH BKLVA POCKET DAW

ONLINE ESP TOOL

- 1 Disconnect USB MIDI and phone-audio devices.
- 2 Open espressif.github.io/esptool-js/ in Chrome or Edge.
- 3 Switch the Cardputer off. Hold G0, switch it on, then release G0.
- 4 Connect to the ESP32-S3 serial port and erase flash.
- 5 Add the full BIN at address 0x0000. Select 8 MB, 80 MHz and DIO.
- 6 Program, then power-cycle normally without holding G0.

DOWNLOAD, MANUAL AND UPDATES

Install from M5Burner by searching for BKLVA Pocket DAW, or download the full BIN and current manual at <https://erkanerdogan.dk/bklva-pocket-daw>. Back up irreplaceable songs and samples before updating.