Quick start / 1. First steps

Developed using AI: Marcus Padrini defined and directed the experience, created the patterns and tested on hardware. ChatGPT (OpenAI) contributed technical solutions and generated and revised code, tools, documentation and graphics. Original engines: authors in CREDITS.md. No OpenAI endorsement.

SMKSYNTH 1.2.0 - M-VAVE SMK-37 Pro / Elite. Use this guide after installation. First installation requires official V016 and replaces the bank. Save and export your work before returning to official firmware.

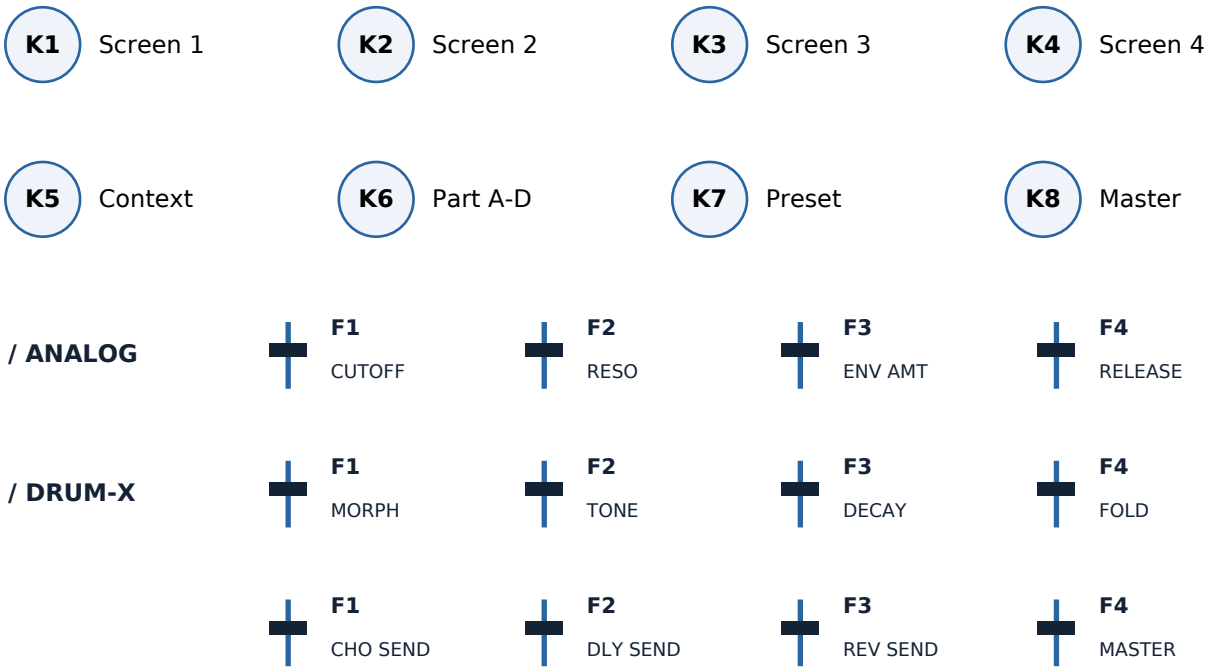
1. Set K8/master to a suitable level and press PLAY.

2. K6 selects A-D; K7 changes the part preset.

3. KNOB BANK cycles Performance > Split/Layer > Patterns; Drum Pads is added when the selected part is DRUM-X.

4. In Patterns, tap P1-P5 for examples. P6-P16 are empty.

5. PLAY stops. Hold KNOB BANK 0.7 s to return to Performance/Favourites.



K1-K4 follow the screen. K5: tempo on Performance; LEVEL/OCT in Split/Layer; page in STEPS; pattern in other SEQ/Mixer views. FADER BANK only changes faders. GLOBAL > FADER MODE: JUMP engages immediately; CATCH waits to cross the stored value. Bank B F4 = K8/master.

Five examples start at 90 BPM. Eight favourites, no extra personal presets. PLAY/REC and engine choice preserve the pad bank; SEQ explicitly requests steps.

ENDLESS: record and perform

ENDLESS is included in official version 1.2. It works in SINGLE, with four parts and independent lengths. Turn Split/Layer off. DRUM-X keeps its drum sequencer. Opening the page does not enable ENDLESS.

1. Select a part with K6 and cycle SEQ views to ENDLESS. Tap PARA to enable; tap PARA again to disable without deleting notes. REC also enables it and starts note entry.

2. With transport stopped, tap REC and enter notes or chords: after releasing all keys, the next press appends a step. Up to 256 steps per part.

3. During entry, right arrow adds a rest with no keys held or extends held notes; left arrow removes the last step after keys are released. Tap REC again to finish entry.

4. With ENDLESS enabled, a key triggers/transposes the parts together: C4 keeps original pitch, independently of the part editing octave. PLAY starts or stops transport. K4 HOLD keeps playback going after keys are released; with HOLD off, releasing the last key stops the session.

5. K1 RATE, K2 GATE, K3 DIR (FWD/REV/RND), K4 HOLD. Save in the pattern bank to retain sequences, sounds and settings.

6. Holding REC for over 1.2 s clears the selected part sequence and automation. Stopping, leaving the page or disabling ENDLESS does not delete recorded notes.

ENDLESS sends notes through USB and TRS/DIN using each part channel, like the regular sequencer. It does not send MIDI Clock/Start/Stop.

MIDI MODE: independent controller

In MIDI MODE the synthesizer is silent and controls send MIDI through USB and TRS/DIN. Bluetooth is not included. Entering and leaving release notes and clear temporary modulation to preserve the patch on return to the synth.

1. In the synth, cycle GLOBE to MIDI MODE. Before activation the page shows only the entry control; turn K1 right.

2. In MIDI MODE, GLOBE opens settings: K1 left returns to the synth; K2 selects MAP 1-4; K3 sets main channel 1-16; K4 selects ABS or REL encoders. This channel is independent of the synth part base channel.

3. KNOB BANK and FADER BANK switch banks A/B. Press both together to switch pad bank. OCT-/+ transpose the keyboard.

4. Tap PARA to edit. Move the desired control or use K5/OCT to select it. K1 selects an allowed type (OFF, CC, CC TOGGLE, NOTE or PITCH BEND), K2 the CC/note number, K3 channel (MAIN or 1-16), and K4 pad colour. Available types depend on the control.

5. BT saves all four maps, including channels, colours and behaviour. Release keys, pads and pedal before saving. PARA returns to the performance overview. ABS encoders accelerate with turning speed; REL uses relative messages.

6. The display keeps three independent areas: last controller value and bars, pads with activity, and a 37-key virtual keyboard showing chords. GLOBE + PLAY triggers MIDI PANIC.

The simulator demonstrates the interface and retains browser memory; it does not replace physical USB/TRS port testing. A .smksynth backup stores the synth bank; MIDI maps and theme use separate memory and are not included in that file.

Theme, oscilloscope and saving

GLOBE > THEME: K1 selects OBERVAVE (default) or ZOOM. The preference saves automatically after 1.5 s with transport stopped and audio quiet. No preset save is needed. Theme saving does not commit pending MIDI map edits.

Zoom uses larger labels and values. Part colour identifies the header line, part badge (white letter), and preset number. Text, values and grid retain the instrument palette. The pattern number stays visible in performance.

Performance values are the default view. A short PATCH opens the logo, overall-output oscilloscope and voices/drum pieces; another tap enters the Mixer cycle. A long PATCH returns to values. The oscilloscope keeps fixed colours and has no pattern indicator. Edits appear in a Zoom notice for about one second, then disappear.

Flow	Screens and commands
Quick save	Short BT saves the sound to its current slot, retaining the name.
Save as / rename	Long BT opens editing. K1 moves cursor; K2 chooses character (up to 10); K7 selects slot 01-99. The screen shows the program already in the destination.
Review replacement	BT opens the name/destination review, showing the program to be replaced. Release and press BT again to write.
Back / cancel	PATCH from review returns to editing; PATCH from editing cancels without writing.

Quick start / 2. Favourites and Split/Layer

Bank 1 - Performance/Favourites

1 **A**	2 **B**	3 **C**	4 **D**	5 **DELAY**	6 **REVERB**	7 **PRESET -**	8 **PRESET +**
9 **F1**	10 **F2**	11 **F3**	12 **F4**	13 **F5**	14 **F6**	15 **F7**	16 **F8**

1-4: part A-D. 5/6: delay/reverb send on/off. 7/8: previous/next preset. 9-16: eight favourites. Tap to recall into the selected part; hold 0.7 s to capture. Stop and release notes/sustain; wait for FAVOURITES SAVED.

Bank 2 - Split/Layer

1 **A**	2 **B**	3 **C**	4 **D**	5 **SINGLE**	6 **SPLIT**	7 **LAYER**	8 **PLAY 1**
9 **A**	10 **B**	11 **C**	12 **D**	13 **SINGLE**	14 **SPLIT**	15 **LAYER**	16 **PLAY 2**

1. In the same row, hold one A-D part and tap another to form the pair. Use two ANALOG parts.

2. Choose SINGLE, SPLIT or LAYER. K4 sets the split point.

3. K5 switches K2/K3 between the two parts’ levels and octaves.

4. Pad 8 or 16 selects the playing row (bright white). Editing the other row does not activate it.

5. Save the pattern to store both configurations and the active row.

K6 selects the recording part. BT saves a preset; it does not replace pattern/scene saving.

Quick start / 3. Patterns and drums

Bank 3 - Patterns/Scenes

1 P1	2 P2	3 P3	4 P4	5 P5	6 P6	7 P7	8 P8
9 P9	10 P10	11 P11	12 P12	13 P13	14 P14	15 P15	16 P16

Tap to load. During PLAY, the change is scheduled for the next bar. Hold 0.7 s to save the current pattern to that slot. If occupied, tap the same pad within 4 s to confirm OVERWRITE; another pad/PATCH cancels. Stop and wait for writing to complete.

Red: occupied; very dim red: empty; blue: selected; blinking blue: next; blinking red: confirm. A pattern stores sequence, four sounds, mix and Split/Layer. Changing patterns does not automatically save edits.

Bank 4 - Drum Pads

1 KICK	2 SNARE	3 CLAP	4 HAT CL	5 HAT OP	6 TOM	7 RIM	8 BELL
9 RESERVED	10 RESERVED	11 RESERVED	12 RESERVED	13 RESERVED	14 RESERVED	15 RESERVED	16 RESERVED

1. K6 selects part. GLOBE until PART SETUP; K1 = DRUM-X, K2 = kit.

2. KNOB BANK to Drum Pads. Choosing a kit does not automatically activate this bank.

3. Pads 1-8 play with velocity; 9-16 are reserved. Violet at rest, white on live and sequenced hits.

4. PLAY, then REC: record live using pads. REC ends recording; PLAY stops.

With ANALOG selected, an already selected Drum Pads bank becomes inactive. Return to DRUM-X or use KNOB BANK.

Quick start / 4. Record, save and restore

Button	Immediate use
PATCH	Tap: Performance; on Performance opens the oscilloscope; the next tap opens Mixer; in Mixer cycles seven rows. Hold 0.7 s: return to Performance.
PARA	Tap: synthesis pages; in STEPS clears and advances a step (DRUM: clears the lane hit). Hold: edit/erase layer.
CHORD	ANALOG: FILTER ENV / AMP ENV. DRUM-X: DRUM SOUND.
NOTE REPEAT	ANALOG: LFO / LFO DEST / LFO +. DRUM-X redirects to DRUM SOUND.
ARP	Open ARP. Another tap on that page toggles the part’s HOLD.
SCALE	Hold in ANALOG STEPS: STEP+. On GLOBAL, tap toggles SYNC AUTO / INTERNAL.
GLOBE	Tap: GLOBAL > POLYPHONY > OUTPUT > PART SETUP > CONTROLS > THEME > MIDI MODE. Hold: keys for start/stop, mute, solo and tap tempo.
FX	Tap: CHORUS > DELAY > REVERB > DRIVE. Hold: K1/K2/K3 chorus/delay/reverb returns; K4 delay time.
SEQ	Tap: sequencer views and explicit step-pad ownership. Hold: white keys become steps.
REC	Tap: arm while stopped; toggle recording while running. Hold over 1.2 s: clear selected track.

1. Live recording: select K6, PLAY and REC; play; REC ends recording.

2. ANALOG step entry: PLAY stopped, REC off, SEQ > STEPS. Play note/chord and release to advance. K1 moves the step; leave empty for a rest.

3. If LENGTH = OFF, use TRACKS K3 to enable the track.

4. Save sound: tap BT. Save As: hold BT, choose K7, confirm BT. Save sequence/scene: hold a Patterns bank pad.

5. For backup, save on the instrument and wait for completion. Stop PLAY/REC and release notes/sustain. Export in the web tool.

6. Restoration replaces the entire bank: export the current one, choose the .smksynth and confirm. RESTORE PENDING requires the same file.

Holding REC over 1.2 s clears the selected track. Persistent transpose: SEQ > TRANSPOSE K1 enables capture; K2 adjusts, K3 resets. Performance K4 KEY TR disables capture without resetting its value.

MIDI OUT - USB and TRS/DIN

MIDI output transmits all four parts, independently of panel focus. GLOBAL > MIDI CH sets A’s base channel (1-13). B, C and D use base +1, +2 and +3. OMNI input uses output channels 1-4.

Part	Output channel	Example: base 3
A / 1	BASE	3
B / 2	BASE + 1	4
C / 3	BASE + 2	5
D / 4	BASE + 3	6

USB and TRS receive the same musical messages. Keys, pads, Split/Layer, arpeggios and sequencers transmit notes. DRUM-X uses its part channel, with no mandatory channel 10. Split/Layer transmits each part’s actual notes and octaves. Every Note Off retains the destination of its original Note On.

Connect 3.5 mm MIDI OUT to the destination’s MIDI IN using the keyboard’s appropriate TRS-DIN adapter. Audio uses a separate jack. TRS works on battery without a computer; USB requires a MIDI host.

Pitch Bend is sent in 14 bits (centre 8192); the mod wheel uses CC1 (0-127). Both follow only the selected part, including Split/Layer, matching the local engine. Changing focus neutralizes the previous channel. Wheel state is resent after Panic.

MIDI Clock/Start/Stop output and automatic Program Change on internal preset selection are not included. Received notes are not simple MIDI Thru; generated arpeggios can transmit. Incoming bend remains global on the base channel, inherited from the engine; this differs from per-part output.

Sustain and MIDI PANIC

Sustain pedal

1. Connect the pedal before power-on and keep it released during startup.

2. Switch-pedal polarity is detected at startup. No half-pedal support; restart after changing pedals.

3. Press the pedal, play and release a chord: it continues until the pedal is released. Sustain applies to the four melodic parts, including Split/Layer and ARP. DRUM-X keeps its internal one-shot behaviour.

4. CC64 is sent to the four part channels and notes still held on previous channels. Pedal-up releases those channels. Physical and received MIDI sustain are independently combined.

Panic: GLOBE + PLAY

Press GLOBE and PLAY together in either order. This stops PLAY/REC, clears HOLD/sustain and pending notes, and cuts internal voices. USB and TRS send CC64=0, CC123=0 and CC120=0 on all 16 channels. Release the pedal before using sustain again. Effect tails may finish normally.

1.2.0 also fixes stuck voices when changing POLY/DUAL to MONO/UNISON with keys held. Note Off already arrived, but old-mode voices could remain gated. Glide is unchanged; editing only Glide did not reproduce the failure in tests.

Tools: https://4t59m4f784-creator.github.io/SMKSYNTH/