OSCURO

Oscuro for FL Studio

The manual for the DAW and DAW BT builds on the M-Vave SMK-37 Elite and SMK-37 Pro with the SMK-37 Oscuro script for FL Studio

Firmware 0.90.10

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Getting started

CHAPTER 1

What the DAW builds do

The DAW builds turn the SMK-37 into a controller that knows your DAW. With the Oscuro script in Bitwig Studio, Ableton Live or FL Studio, the knobs follow the device you are working on, the faders mix, the pads select and mute tracks, and the screen shows names, values, levels and the browser.

One build: DAW BT

Build	File	What it is
DAW BT	`oscuro-<version>-daw_bt-app.bin`	The DAW build: USB MIDI and the DAW link, plus Bluetooth LE MIDI, so the keyboard can also work without a cable to the computer.

Earlier versions also came as a USB-only **DAW** build with the same features. It is no longer published: DAW BT does everything it did over USB, and Bluetooth stays off until you tap `BT`. Everything in this manual works in DAW BT, except where a page says it needs Bluetooth.

The DAW builds run on the M-Vave **SMK-37 Elite** and its twins: the SMK-37 Pro, the MKE-P37 and the Starrykey 37 Play. Only the Elite and the Pro have been tried on a unit.

What the keyboard does in a DAW build

- **Keys, pads, wheels and pedal play MIDI** into your DAW, as on any controller. The sound comes from the DAW. The build has no synth patches; a small built-in test voice plays from the keys and pads on the keyboard itself and cannot be switched off.
- **With the Oscuro script**, the knobs, faders, pad bank B, `Left` / `Right`, `SEQ`, `SEQ PLAY` and `SEQ REC` belong to the DAW. The screen draws four views of your project: **Device**, **Mixer**, **Overview** and **Browser**.
- **The keyboard's own musical features stay**: the Harmony Helper (a chord partner on the pads), Scale and Chord modes, the arpeggiator, Note Repeat and the step sequencer. Pad bank A stays notes, so you can play drums or chords while bank B controls tracks.
- **Without a script**, or with M-Vave's stock script, the keyboard is a plain MIDI controller with editable presets.

How the pieces fit

Your computer runs the DAW and the Oscuro script for it. The script and the keyboard talk over the **Oscuro DAW protocol**: the keyboard reports what you touch ("K3 turned two steps"), the script decides what that does in the DAW and sends back what the screen and lights should show. Notes travel as ordinary MIDI beside it.

There are three scripts, one per DAW, and this manual comes in three books, one for each:

DAW	Script	Book
Bitwig Studio 6.1 or newer	**SMK-37 Oscuro** (controller extension)	Oscuro for Bitwig Studio
Ableton Live 12 or newer	**SMK37_Oscuro** (Remote Script)	Oscuro for Ableton Live
FL Studio 2026	**SMK-37 Oscuro** (MIDI script)	Oscuro for FL Studio

The chapters about the keyboard itself are the same in every book; the setup, views, workflows and reference chapters are written for one DAW each.

M-Vave's own FL Studio script for the stock firmware is a different script; both can be installed side by side (see Set up FL Studio). The FL Studio script works the same on the SMK-37 Elite and the SMK-37 Pro.

> **Status.** The DAW protocol and the three scripts are tested on a computer against a model of the DAW and the firmware's own decoder. The Ableton Live and FL Studio scripts have had only a **short test with a keyboard**; the Bitwig script has had the most use. Expect rough edges, and tell us what you find. Everything can be undone: the installer puts M-Vave's firmware back at any time.

CHAPTER 2

Install, update, go back

The web installer writes Oscuro to the keyboard over the USB cable and can put M-Vave's own firmware back whenever you want. It runs in Chrome or Edge on your computer; nothing needs installing.

What you need

- Chrome or Edge (they have Web MIDI), the USB cable and the Oscuro package (`oscuro-installer.html` and the `…-daw_bt-app.bin` or `…-daw-app.bin` file).
- For the first install: M-Vave's firmware file for your keyboard, for example `SMK-37 Elite_016.fwsc` from M-Vave's download page. The package does not contain it.

Install or update

1. Close your DAW and any other MIDI app. The installer needs the keyboard's MIDI port to itself.
2. Connect the keyboard and open `oscuro-installer.html`.
3. Under **Install or update Oscuro**, choose the app file: `…-daw_bt-app.bin` for Bluetooth, `…-daw-app.bin` without.
4. First install only (the keyboard still runs M-Vave's firmware): also choose M-Vave's `.fwsc` file. The page combines the two on your computer.
5. Press **Install Oscuro** and keep the cable in until the page says Finished. The keyboard restarts by itself.

Check the version afterwards: tap `Globe`, turn K1 to About and press `Right`. The About screen shows the version and **DAW**, with **TEST** in a test build. The DAW script also receives the version when it connects.

Images larger than M-Vave's app slot

The keyboard keeps its firmware in an area of fixed size, the app slot. The DAW BT image is about 81 KB **larger than M-Vave's slot**. The package's `README.md` names every app file that is too large (more than 621,320 bytes).

- The web installer (0.83.2 and newer) takes such a file. Choose it together with your M-Vave `.fwsc` file under **Install**; the installer moves the keyboard's settings area behind the app to make room.
- What this costs: the area where M-Vave's firmware kept its own settings is overwritten.
- From a keyboard that still runs M-Vave's firmware, M-Vave's firmware does the writing, and it has **not yet been tried** with a grown image. If it refuses, nothing is changed.
- Once the slot is grown it stays grown, and later updates install as usual.

Go back to M-Vave's firmware

Under **Back to M-Vave's firmware**, choose M-Vave's `.fwsc` file and press **Install M-Vave firmware**. This works from Oscuro and from any M-Vave version. If you made a patch-memory backup (`.ksua`) before you started using Oscuro, restore it first on the **Patch memory** tab; it brings M-Vave's user data back.

After going back, use the **stock-firmware script** for your DAW again. The Oscuro script stays quiet on stock firmware (see Troubleshooting).

> **Grown slot and going back.** Going back to M-Vave's firmware from a keyboard whose slot was grown for an oversize image has not been tried on a unit yet. If anything goes wrong, the recovery route is described in `guides/F01_flash_over.md` in the package.

CHAPTER 3

Connect: USB and Bluetooth

The keyboard reaches your DAW over the USB cable, or over Bluetooth LE MIDI in the DAW BT build. Over USB you can also split it into three MIDI ports, so the keys, the pads and the DAW link each get their own.

USB: one port or three

By default the keyboard shows up as **one** USB MIDI port, SMK-37 Oscuro USB. Keys, pads and the DAW link share it, and the script sorts them out. This is the simplest setup and works out of the box.

For separate recording of keys and pads, set **Globe** → **DAW & USB** → **USB Ports** → **Split** and restart the keyboard. It then shows up as three ports:

Port	Carries	In FL Studio
Keys	keys, knobs and faders outside a script, wheels, arpeggiator, melodic sequencer tracks	an enabled input, (generic controller)
Pads	pads (and the Harmony Helper's chords), Note Repeat, the drum track	an enabled input, (generic controller)
DAW	the Oscuro DAW protocol	input and output with the same Port number, controller type SMK-37 Oscuro

With Split, record the keys on one instrument track and the pads (drums, Harmony chords) on another, as if they were two instruments.

Bluetooth MIDI (DAW BT)

1. Tap `BT`. The first start shows Starting Bluetooth...; the screen then says On (advertising).
2. Pair **SMK-37 Oscuro BLE** in your computer's MIDI setup. On a Mac: Audio MIDI Setup → Window → Show MIDI Studio → Bluetooth, then **Connect**.
3. In FL Studio, set up SMK-37 Oscuro BLE as input and output with the same Port number (Options → MIDI settings), and set `flush_budget` to about 120 in `oscfl_settings.py`.

The whole DAW session runs over Bluetooth: screens, knobs, pads and transport. The keyboard needs no USB cable at all, so it can run from a power bank. It uses one link at a time: the one the DAW connected on last; traffic for the script on the other link is ignored while it lasts.

Things to know:

- Bluetooth carries one MIDI stream. Keys and pads are told apart by MIDI channel (pads on channel 10 by default); there is no Split.
- If BT is left on, it starts by itself after power-on. **Hold `Globe` while switching on** to skip it for that start.

- Bluetooth adds a little delay, and the screen updates arrive in small bursts. See Troubleshooting if it feels slow.
- Bluetooth MIDI has been tried with a Mac only; Windows, iOS and Android are untested. The DAW session over Bluetooth is tested on a computer only, not yet with a keyboard.

Channels and other settings that matter

Where	Setting	Why
Globe → Play Setup	Key Channel, Pad Channel, curves	which MIDI channel your keys and pads play on
Globe → DAW & USB	USB Ports (One / Split)	one port or three (next start)
Globe → MIDI	Clock, Clock Out	who sets the tempo of the arpeggiator, Note Repeat and sequencer
Globe → Physical Controls → Pads	Shift Pad	makes one pad a Shift key for the script (see Controls that work in every view)

Changes to USB Ports take effect at the next start.

CHAPTER 4

Set up FL Studio

The SMK-37 Oscuro script is an FL Studio MIDI script in the folder `flstudio/SMK37_Oscuro` of the DAW package. You copy it once into FL's Hardware folder and choose it for the keyboard's port. It works the same on the SMK-37 Elite and the SMK-37 Pro.

> **Written for FL Studio 2026.** An older FL Studio loses the parts its scripting interface lacks (following a focused effect window, cloning patterns, the browser): the script skips them and says so on the keyboard.

Install the script

1. Quit FL Studio.
2. Copy the folder `SMK37_Oscuro` (without its `tests` folder) into FL's **Hardware** folder:

System	Folder
macOS	`~/Documents/Image-Line/FL Studio/Settings/Hardware/`
Windows	`%USERPROFILE%\Documents\Image-Line\FL Studio\Settings\Hardware\`

If you moved FL's user data folder, use the one FL shows under Options → File settings. The `.py` files must sit directly in `Hardware/SMK37_Oscuro/`.

When you update Oscuro, replace the folder with the one from the new package. Keep your `oscfl_settings.py` if you changed it (see Script settings).

Choose it for the keyboard's port

1. Start FL Studio and open Options → MIDI settings.
2. In the **Input** list, select the keyboard's port and enable it: - **USB Ports: One** → the keyboard's only port, SMK-37 Oscuro USB. - **USB Ports: Split** → the keyboard's third port, the **DAW** port. - **Bluetooth** → SMK-37 Oscuro BLE.
3. Set its **Controller type** to **SMK-37 Oscuro** (FL usually picks it by itself) and give it a **Port** number, for example **10**.
4. In the **Output** list, select the same port and give it the **same Port number**. This is how the script reaches the keyboard's screen and lights; without it the keyboard stays on its own screen.
5. With Split: enable the **Keys** and **Pads** ports as inputs too, with (generic controller). They play the selected channel.

When the script reaches the keyboard, the screen turns to the **Device** view. If the keyboard runs other firmware, FL's hint bar says so after a few seconds and the script waits.

SMK-37 Elite and SMK-37 Pro

Both keyboards run the same Oscuro firmware, show the same ports and have the same controls, so everything in this manual applies to both. If the keyboard still runs **M-Vave's firmware**, the hint bar names it (this SMK-37 Pro runs M-Vave firmware): install Oscuro, or use M-Vave's own FL script for that keyboard.

Keep M-Vave's script

M-Vave's FL script for the stock firmware speaks a different language. This one has its own name, so both can be installed. Choose SMK-37 Oscuro while the keyboard runs Oscuro.

The manual next to the script

FL has no help page for scripts. The DAW package puts this manual, `oscuro-flstudio-manual.pdf`, next to the `SMK37_Oscuro` folder.

Settings

FL has no settings panel for scripts. The script's settings are in `oscfl_settings.py` in its folder; see Script settings.

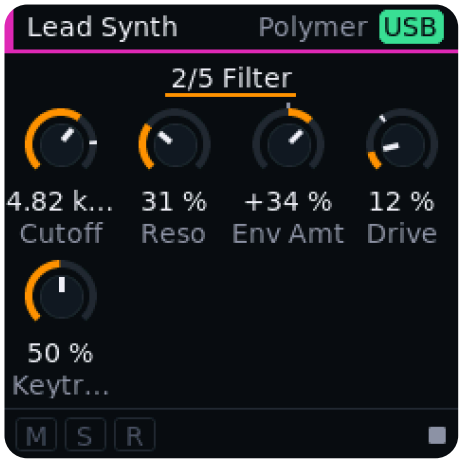
The surface

CHAPTER 5

Reading the screen

While the script is connected, the screen shows your DAW, not the keyboard. Every view has the same frame: a status bar on top, the view's content in the middle, and the selected track's colour at the bottom.

The status bar



The Device view: the device name (Polymer) on the left, the remote page (2/5 Filter) in the middle, the USB chip on the right. The selected track sits at the bottom.

Place	Shows
Left	What you are working on: the device's name in the Device view, Mixer, Overview or Browser in the others
Middle	Where you are inside it: the remote page ("2/5 Filter"; the word pads is added when the pads are the device's switches), the tracks the Mixer shows ("Tracks 1-8"), the project name, the browser's title
Right	**USB** (green) while a computer is connected

Without a script, the left side reads **DAW** and the screen shows the keyboard's own home page: the last note or chord, the bank, the octave and which modes are on.

The accent and the track colour

Two colours tell you different things, and they never swap roles.

- **The accent** is the screen's highlight colour: the line under the status bar, the knob arcs, the cursor, the framed track, lit chips. The script sets it once when it connects. It stays the same all session, whichever track you select.

The FL Studio script uses **green**; the setting `accent: 'off'` in `oscfl_settings.py` keeps your own accent from **Globe** → **System** → **Accent** instead.

- **The track colour** is the colour of the track you selected in the DAW. It shows as a coloured bar next to the track's name (Device view), as each strip's colour line (Mixer), and as a thin line along the bottom of the screen (Overview, Browser).

So when the bottom line or bar changes colour, you selected another track. The rest of the screen keeps its look.

Knob cells

In the Device view (and the small cells of the Overview), each cell sits above the knob it belongs to:

- the **name** of the parameter and the **value** as the DAW writes it ("4.82 kHz", "31 %");
- an **arc** showing the position. Parameters that go both ways from a centre fill from 12 o'clock;
- **empty and dim** when the knob has nothing to control on this page. Turning it does nothing.

Messages

Short messages appear as a card over the screen and disappear by themselves:

- **Fader moves** outside the Mixer: "Bass: -4.8 dB", with "(move up)" or "(move down)" while the fader waits for pick-up.
- **Tempo** while you change it with `Oct-` + K8.
- **Pads: <device> switches** once, when pad bank B turns into the device's switches (Device view).
- **Alerts** from the DAW. Only an alert interrupts a keyboard page you are editing.

A message from the DAW, framed in red: an alert.

When the connection ends

If the DAW quits, the script is switched off, or the cable comes out, the keyboard notices within two seconds. It then drops everything the script owned: the knobs, faders, pads and buttons go back to the keyboard's own functions and lights, and no note is left hanging. When the script comes back, it takes them again.

CHAPTER 6

Controls that work in every view

These controls do the same in the Device, Mixer and Overview views. `Oct-` held is the modifier; the Shift pad (if you set one) works the same, and also turns pages.

Views

Control	Does
`SEQ` tap	Next view: Device → Mixer → Overview
`SEQ` hold	The presets of the plugin on the knobs (Browser)
`Oct-` + `SEQ` tap	Metronome on / off
`Oct-` + `SEQ` hold	FL's browser (Browser)

Transport

Control	Does
`SEQ PLAY`	Play / pause
`Oct-` + `SEQ PLAY`	Stop
`SEQ REC`	Record on / off
`Oct-` + `SEQ REC`	Song / pattern mode
TAP (where a preset binds it)	Taps FL's tempo
`Oct-` + K8	Tempo, 1 BPM a detent (0.1 with the Shift pad)

Faders

Control	Does
Faders 1-4	Volumes of the 4 mixer inserts in the fader window (F1-F4 on the Mixer screen)
`Fader Bank` B	The selected channel's volume and pan, then its insert's volume and pan

Soft takeover: a fader does nothing until it reaches the value it controls; the screen shows which way to move it (F2^ up, F2v down). Turn it off with `soft_takeover` (Script settings).

Pad bank B

Pad bank B is in one of eight **pad modes** (Pad modes): steps, channels, patterns, mute, solo, arm, performance, route. `Oct-` **+ pads 9-16** pick one; hold the Shift pad to see them lit. Pad bank A always plays notes into the selected channel.

Control	Does
`Oct-` + pad 1 / 2	Mixer inserts −8 / +8
`Oct-` + pad 3 / 4	Previous / next pattern
`Oct-` + pad 5	Capture: the notes you just played (the last minute) go into the pattern
`Oct-` + pad 6 / 7	Undo / Redo
`Oct-` + pad 8	A new empty pattern
Shift pad + `Left` / `Right`	The pads' page

Pad names. Hold `Oct-` (with Settings → Display → Hints on) and the keyboard lists all 16 pads of bank B with what a plain tap does right now: the step number in Steps, channel, pattern or insert names in their colours, Mute, Solo, Arm or Route on the bottom row, the transport names in the Overview. Needs firmware 0.90.8.

The Overview's bottom row is the transport instead of the pad mode's own row (Overview); `Oct-` + a bottom pad still picks the pad mode.

The page line

In the Device view the screen's page line shows the plugin's parameter banks by the numbers of their parameters: **1-8**, **9-16**, and so on, the last one ending at the parameter count (for example **17-21**). It is empty in the other views, when there is no plugin, and while a step is held.

FL's windows

The keyboard follows FL. Select an insert in FL (with the mouse or a pad) and the Mixer view shows the bank of 8 holding it and the fader half it sits in. Open FL's mixer window and the keyboard switches to the Mixer view; click the channel rack, the playlist, the piano roll or a plugin window and it goes back to the Device view. Turn the window following off with `follow_window` (Script settings).

Knobs

Turning a knob changes the parameter at once, 128 steps over its range. Hold `Oct-` or the Shift pad while turning for fine steps (1024). In every view, a **held step** (Steps mode) borrows K1-K8 for its own settings.

CHAPTER 7

When the keyboard's own pages take over

The script owns the knobs, faders, pad bank B and a few buttons. The rest stays the keyboard's, and while you use one of the keyboard's own pages it borrows the knobs and `Left` / `Right` back. You never have to disconnect the script to change a keyboard setting.

Buttons that always stay the keyboard's

`Globe` (settings), `PATCH` (Harmony Helper), `ARP`, `SCALE`, `CHORD`, `NOTE REPEAT`, `Oct+` / `Oct-`, `Knob Bank`, `Fader Bank`, `BT`, `PARA` and `FX` keep their own functions in a DAW session. The keys, pad bank A and the wheels keep playing MIDI.

Who gets the knobs and Left / Right

While...	Knobs	`Left` / `Right`	Then
a keyboard page or list is open (`Globe` settings, the `SCALE`, `ARP`, `CHORD` or `NOTE REPEAT` list)	the page	the page	the DAW gets them back when the page closes
`Globe` or `ARP` is held (editing without opening the list), or a button is held for its long press	the keyboard	—	back when you let go
the **Harmony Helper** is on	the DAW, on its home page; the page, on its list pages	the Harmony pages (its carousel and its scale question)	back when you switch Harmony off
nothing of the above	the DAW	the DAW	

The **faders** stay the DAW's throughout, and the keyboard's own fader screen never opens for them.

A turn or press that the keyboard took never reaches the DAW, so a setting you change on a keyboard page never moves a parameter by accident.

The Harmony Helper and the screen

While the Harmony Helper is on, its screen replaces the DAW view. Its pads are pad bank A, so pad bank B still controls tracks. Hold `PATCH` to switch it off; the DAW view returns. See Harmony Helper.

SEQ and the keyboard's sequencer

In a DAW session `SEQ` changes the screen view, and `SEQ PLAY` / `SEQ REC` drive the DAW's transport. If you would rather use the keyboard's step sequencer with `SEQ`, give `SEQ` back to the keyboard in the script's settings (Bitwig: preference SEQ button → Firmware sequencer; Live: `seq_views: False` in `user_settings.py`; FL Studio: `seq_views: False` in `oscfl_settings.py`). The views then stay on **Device** (only `SEQ` changes them), and `SEQ PLAY` / `SEQ REC` still belong to the DAW.

The Harmony Helper's **Memory** page is the one exception for `SEQ PLAY`: there it starts and stops the replay of your stored chords on the keyboard, even in a DAW session.

Views

CHAPTER 8

Device view

Shape a sound without the mouse. The eight knobs show eight parameters of a plugin with their names and values; `Left` and `Right` page through the rest.

Which plugin

The knobs follow what you work on in FL:

1. an **effect window you opened** in the mixer (the focused effect), else
2. the **instrument of the selected channel** in the channel rack.

`Oct-` + `Left` / `Right` steps through the selected channel's instrument and the effects in the slots of its mixer insert; the screen says Plugin: <name>. Selecting another channel, or focusing another window, follows FL again.

The status bar shows the bank, for example **2/5**, plus **Fx3** when the plugin sits in mixer slot 3, and the pad mode on the right.

K1-K8: the plugin

Control	Does
K1-K8	Eight named parameters of the plugin
`Left` / `Right`	Previous / next eight
`Oct-` + `Left` / `Right`	Previous / next plugin

Only parameters with a name are shown: a VST's empty slots and MIDI CC entries are skipped. Value text comes from the plugin where it gives one (4.82 kHz); otherwise the screen shows a percentage. A channel with no plugin (an audio clip) shows no plugin and dim knobs.

K9-K16: the channel and its insert (`Knob Bank` B)

Knob	Does
K9	Channel volume
K10	Channel pan
K11	**Insert**: the mixer insert the channel plays into, one insert a detent (routing from the keyboard)
K12	That insert's volume
K13	That insert's pan
K14	That insert's stereo separation

Knob	Does
K15	Master volume
K16	—

What FL does not have

FL does not mark modulated parameters, so the knobs show no modulation tick; and it has no "touch" for parameters, so whether FL records a knob turn as automation depends on FL's own recording settings.

CHAPTER 9

Pad modes: steps, channels, patterns, performance, routing

Pad bank B is where FL Studio shines on this keyboard: its step sequencer, the channel rack, patterns, performance mode and the mixer's routing are each one chord away. Pad bank A keeps playing notes into the selected channel.

Picking a mode

Hold `Oct-` and tap a bottom-row pad (9-16); hold the Shift pad to see the eight modes lit, the current one bright. The mode stays when you change views. The screen names the new mode, for example Pads: Steps of Kick.

`Oct-` + pad	Mode	Top row (1-8)	Bottom row (9-16)
9	**Steps**	steps 1-8	steps 9-16
10	**Channels**	select 8 channels	mute them
11	**Patterns**	patterns 1-8	patterns 9-16
12	**Mute**	select 8 inserts	mute
13	**Solo**	select 8 inserts	solo
14	**Arm**	select 8 inserts	record arm
15	**Perform**	8 playlist tracks, this block	the next block
16	**Route**	select 8 inserts	sends from the selected insert

Shift pad + `Left` **/** `Right` turns the page: steps by 16, channels by 8, patterns by 16, performance blocks by one.

Pad names. Hold `Oct-` with Settings → Display → Hints on (firmware 0.90.8) and the keyboard names every pad by what a **plain tap** does now: in Steps the step number (blank beyond the pattern's length), in Channels, Mute, Solo, Arm and Route the channel or insert names in their colours with Mute, Solo, Arm or Route under them, in Patterns the pattern names (an empty slot reads New), in Perform the playlist track names (blank while performance mode is off). With Hints off nothing shows and the pads work as always.

In the Overview the bottom row is the transport (Stop, Play, Rec, Song, Loop rec, Metro, Marker <, Marker >) whatever the mode; the top row stays the mode's top row, and `Oct-` + a bottom pad still picks the mode (Overview).

Steps

The sixteen pads are sixteen steps of the **selected channel** in the **current pattern**, FL's step sequencer: lit in the channel's colour where a step is set, dim where it is empty (each beat a little brighter), white for the step playing now. The status bar shows **Steps 1-16/16**.

Control	Does
Tap an empty step	Set it
Tap a set step and let go	Clear it (unless you turned a knob while holding it)
Hold a step, turn K1	Velocity
K2	Release velocity
K3	Fine pitch
K4	Pan
K5 / K6	Mod X / Mod Y
K7	Shift (a small delay)
K8	Note

Pick another channel (Channels mode, the Overview's K7, or the mouse) and the pads show its steps. Longer patterns have more pages.

Channels

The channel rack is your drum kit: the top row selects eight channels (lit in their colours, the selected one bright), the bottom row mutes them. Select a channel here, then switch to Steps to program it, or play it on pad bank A.

Patterns

Sixteen patterns: the current one bright, patterns with content dim, empty ones nearly dark. A tap selects that pattern; an empty pad makes a new pattern there.

Mute, Solo, Arm

The top row selects one of eight mixer inserts (in their colours), the bottom row toggles its mute, solo or record arm. `Oct-` + pads 1 / 2 move to the previous / next eight inserts.

Perform

FL's **performance mode** on the pads: eight playlist tracks across, the current block on the top row and the next block on the bottom row. Turn performance mode on in the playlist first; until then the pads stay dark and the screen says so.

Pad	Light	Tap	Hold half a second
a clip	dim in its colour	launch it	stop the track
playing	bright		

Pad	Light	Tap	Hold half a second
about to start	pulsing		

Route

The bottom row shows where the **selected insert** sends: lit where it routes to that insert. A tap adds or removes the route, as FL's mixer does when you click a route switch. The selected insert's own pad stays dark.

CHAPTER 10

Mixer view

Eight mixer inserts on one screen: colour, name, volume, a peak meter and the mute / solo / arm squares. Tap `SEQ` once from the Device view.

What the screen shows

Eight strips of FL's mixer inserts, from insert 1. The selected insert has a white frame. Squares under each strip: mute yellow, solo blue, arm red. The meters move while FL plays. FL's mixer has no group tracks, so no group lines appear.

Controls

Control	Does
K1-K8	Pan of the 8 inserts
K9-K16 (`Knob Bank` B)	Stereo separation of the 8 inserts
Faders 1-4	Volumes of the 4 inserts in the fader window (marked F1-F4)
`Right` / `Left`	Move the fader window to strips 5-8 / 1-4; past the end, the next / previous 8 inserts
`Oct-` + `Left` / `Right`	Previous / next 8 inserts

It follows FL

Select an insert in FL, with the mouse, a pad or anything else, and the screen moves to the bank of 8 holding it; the fader window becomes the half (strips 1-4 or 5-8) the insert sits in, and those faders need to be picked up again. Only a **change of the selected insert** moves anything: if you page with `Left` / `Right` or `Oct-` + `Left` / `Right` the screen stays where you put it until you select another insert. The master and an insert beyond the last one do not move it.

Opening FL's mixer window also opens this view, and clicking another FL window (channel rack, playlist, piano roll, plugin) goes back to the Device view (`follow_window` , Script settings). SEQ still cycles the views.

Mute, solo, arm and routing from the pads

The pad modes **Mute**, **Solo**, **Arm** and **Route** (Pad modes) put the same eight inserts on pad bank B: the top row selects an insert, the bottom row mutes, solos or arms it, or, in Route, sends the selected insert to it.

CHAPTER 11

Overview

The project at a glance: tempo, position, pattern, switches. Tap `SEQ` twice from the Device view.

What the screen shows

Tempo, the play position as bar.beat.sixteenth, the time signature (FL reports beats per bar), and the switches: metronome, loop recording, precount. The status bar says **Song** or **Pattern**, and the position line names the pattern in pattern mode.

Controls

Knob	Does
K1	Tempo (0.1 BPM with `Oct-`)
K2	Pattern
K3	Position, a bar a detent (a beat with `Oct-`)
K4	Master volume
K5	Master pan
K6	Snap
K7	Selected channel
K8	Selected mixer insert
K9-K16 (`Knob Bank` B)	Volumes of eight channels of the rack (the Channels page)
`Left` / `Right`	One bar back / forward
`Oct-` + `Left` / `Right`	Four bars

The transport row

In this view the **bottom row of pad bank B** (pads 9-16) is the transport. A tap runs the function; the switches are bright while on and dim otherwise.

Pad	Function	Colour
9	Stop	white
10	Play	green
11	Rec	red
12	Song (song / pattern mode)	amber

Pad	Function	Colour
13	Loop rec	amber
14	Metro (metronome)	cyan
15	Marker < (previous marker)	magenta
16	Marker > (next marker)	magenta

The top row stays the current pad mode's top row (in Steps, steps 1-8 of the page). `Oct-` or the Shift pad + a bottom pad still picks the **pad mode**. In Steps, steps 9-16 of the page are not on the pads in this view; in the Mixer and Device views the bottom row is the mode's own again. Hold `Oct-` (Hints on) to see the names.

The functions are the list `pad_map` in `oscfl_settings.py` (Script settings). Also available: Countdown, Step edit, Marker + (a marker at the playhead), Undo, Redo, Capture, Tap. The markers use FL's arrangement functions and need a recent FL Studio.

CHAPTER 12

Browser

Load a preset or a sample without the mouse. **Hold** `SEQ` for the presets of the plugin on the knobs; `Oct-` **+ hold** `SEQ` for FL's own browser.

Plugin presets

The list shows the plugin's own presets by name. Turn **K1** to move the cursor (**K2** by eight) and press `Right` to load; `Left` closes. The preset the script loaded last is marked *****.

FL can only step a plugin's presets forward and back and does not say which one is loaded, so the script counts from the last preset it loaded, starting at the first. If you changed the preset with the mouse, the first load from the keyboard can land off by that difference; load once, and the count is right from then on.

A plugin without presets opens FL's browser instead (No presets for … : FL browser).

FL's browser

FL's browser opens and K1 moves its cursor; the screen lists the names the cursor has passed (FL gives no list of what is ahead, so the list grows as you scroll).

Control	Does
K1 / K2	One item / eight items
`Right` on a folder	Open it
`Right` on a file	Load it, as Enter does in FL's browser (a preset or sample into the selected channel)
Shift pad + `Right`, or Shift pad + `Left`	Preview the item
`Left`	Close

The keyboard's own features

CHAPTER 13

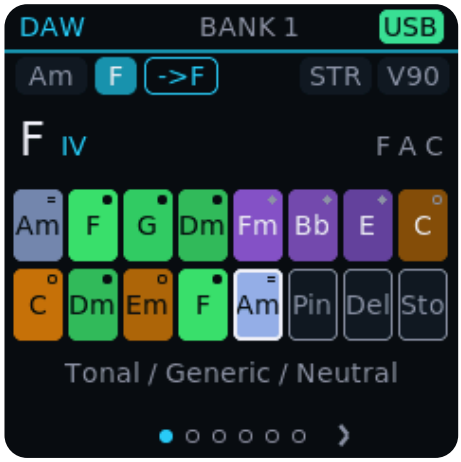
Harmony Helper

A chord partner on the pads. It names the chords you play, lights the pads with the chords that tend to come next, coloured by how well they fit, and shows which notes fit over the chord that is sounding. It makes MIDI notes only: record them in your DAW like any other notes.

On, off, and what it takes over

- **Hold** `PATCH` (half a second) to switch it on or off. `PATCH` is lit while it is on.
- **Tap** `PATCH` to open its Setup list.

While it is on, **pads 1-16 of pad bank A** belong to the helper and its screen replaces the DAW view. Pad bank B still controls the DAW's tracks, the faders still mix, and `Left` / `Right` walk the helper's pages instead of the device pages. Hold `PATCH` again to give everything back; every note it held is released.



The Play page after a chord: the chord just played (F, numeral IV), the two pad rows as tiles, and what fits.

The pads

Pads	What they play
1	The same chord again
2-8	The seven best next chords after the one you played, best first. Before any chord: the home chord and good ways to start
9-12	The first four chords of your scale, I ii iii IV (C Dm Em F in C major). Hold `Oct-`: V vi vii° I
13	The **anchor** chord, a stable reference
14 **PIN**	Make the last chord the anchor
15 **DEL**	Remove the last stored chord
16 **STORE**	Pin the chord and store it in the Memory

Colours: green safe, **orange** explore, **violet** borrowed from outside the scale but it fits, **dark red** does not fit (scale row only), **pale blue** the same chord again, **white** the chord sounding now. Brighter = ranked higher. **Globe** → **System** → **Pad Colours** → **Colour-blind** switches to blue, yellow, magenta and dark.

Hold a pad for a quarter of a second to see **why** it fits (with Setup → Why Popup → Hold). Chords you play on the keys are named too, including odd ones and slash chords.

The six pages

`Right` and `Left` walk **Play** → **Notes** → **Memory** → **Tuning** → **Bass** → **Setup** and wrap around. On the list pages K1 picks a row, K2 changes it, K3 pages. The pads play on every page.

Page	What it is for
Play (home)	K1 Suggest (Safe, Tonal, Bold), K2 Genre (39 genres; a card shows its typical moves), K3 Mood, K4 Chord Size, K5 Strum and K6 Humanize (stored, not applied yet), K7 Velocity, K8 Octave
Notes	The twelve notes as piano keys coloured by their job over the current chord: **H** Home (green), **C** Colour (blue), **L** Lean, wants to resolve (orange), **P** Passing (grey), Out of scale (violet). Held keys get a white outline
Memory	Up to 8 stored chords, each ½, 1 or 2 bars (K2). `SEQ PLAY` here replays the progression in a loop
Tuning	Velocity, Level, Chord Size, **Chord Shape** (Close, Open, Rootless A / B, Quartal), Spread, Voice Lead, Octave
Bass	A bass line on its own MIDI channel: Off, Root, or Pattern (follows the clock), with a style, lowest note, approach notes and pedal
Setup	Suggest, Genre, Mood, Follow (keys, pads or both), Scale Detect (Off, Ask, Auto), Advance, Why Popup, Note Context

Notes while a stored progression replays: Home green, Colour blue, Lean orange, Out violet; the next chord top right.

A first session in your DAW

1. Set the scale with `SCALE` (K1 base note, K2 scale). Hold `PATCH`.

2. In the DAW, give the pad channel an instrument track with a sound you like (with USB Ports: Split, put the **Pads** port on it).
3. Play pad 9 (the I chord). The green pads on the top row are safe next chords; play one. When you like a chord, press **STORE** (pad 16). Store four.
4. `Right` to **Memory**, then `SEQ PLAY`: the four chords loop. Arm the track in the DAW and record them; to record in time with the DAW's transport, start recording there first.
5. `Left` to **Notes** and play a melody on the keys over the loop: green notes on strong beats.
6. On **Tuning**, try Chord Shape: Rootless A with the **Bass** page on Root, and give the bass channel its own bass track.

Scales shared with the DAW

The helper and the keyboard's Scale mode use one scale.

FL Studio gives scripts no project scale, so the script leaves the keyboard's scale as it is. With Scale Detect: Ask the helper may offer a better-fitting scale after a few chords: `Right` switches, `Left` keeps yours.

Limits

- Not yet run on a keyboard: the helper, its replay and bass assist were tested on a computer only.
- The Memory is lost at restart and cannot be sent to the sequencer yet.
- Strum and Humanize are stored but do not change the notes yet. Rootless shapes need the bass assist on.

CHAPTER 14

Scale, Chord, Arp, Note Repeat, sequencer, clock

The DAW builds keep the keyboard's own performance features. They work the same in a DAW session: they change the notes the keys and pads send, and the DAW records the result.

How the buttons work

Most of these buttons share one pattern: **tap** opens the list, **hold** switches the mode on or off. In a list, K1 picks a row, K2 changes it, K3 pages, `Left` goes back. While a list is open it has the knobs and `Left` / `Right`; the DAW gets them back when it closes.

Scale

Tap `SCALE`: K1 Base, K2 Scale, K3 Fix, K4 Shift. Hold `SCALE` to switch it on or off. With it on, the keys are pulled into the scale; **Fix** decides what a key outside it does (Down, Up, Near, or Filter it out). Make your own **User 1-4** scales by tapping keys on the SCALE list. The Harmony Helper uses the same scale.

Chord

Tap `CHORD`: Chord (Maj, Min, Dim, Aug), Type (Triad to 13th), Voicing (Fixed or in the Scale). Hold `CHORD` to switch it on or off. With it on, each key plays a whole chord.

Arpeggiator

Tap `ARP` for its list; hold it for 0.6 s to switch it on or off. Its sections, reached with `Left` / `Right`: **ARP**, **RHYTHM** (Euclidean), **EVOLVE**, **STRUM**, **HUMAN**. Hold `ARP` and turn K1-K8 to edit without opening the list (the knobs are the keyboard's while you hold it).

Note Repeat

Hold `NOTE REPEAT` and turn K1-K5 (Gate, Swing, Tempo, Rate, Latch); tap it to switch on or off. Pads then repeat while held, for drum rolls into the DAW.

Step sequencer

Seq1, Seq2 (melodic) and Drum (14 lanes), each with 8 patterns of up to 64 steps. In a DAW session `SEQ`, `SEQ PLAY` and `SEQ REC` belong to the DAW. To use the sequencer from `SEQ`, give `SEQ` back to the keyboard in the script's settings (see When the keyboard's own pages take over). Projects are kept in memory only and are lost at restart. The sequencer has not been run on a unit yet.

Tempo and clock

All timed features (arpeggiator, Note Repeat, sequencer, Harmony replay and bass pattern) run from one clock.

- **The keyboard leads** (Globe → MIDI → Clock: Internal): its own tempo. In a DAW session `Oct-` + K8 sets **the DAW's** tempo instead (see Controls that work in every view); set the keyboard's own tempo on the ARP or NOTE REPEAT page.
- **The DAW leads** (Clock: USB or Auto): send MIDI clock from the DAW to the keyboard's port (Live: Sync on for the keyboard's output port; FL Studio: Send master sync on the keyboard's output in MIDI settings), and the arpeggiator and the rest follow the DAW's tempo, start and stop. The status bar shows `E` and the tempo while it follows. Over Bluetooth use Clock: BLE; the tempo settles after about four beats.
- **TAP**, where a preset binds it, taps the DAW's tempo while the script is connected.

Other settings worth knowing

Where	What
Globe → Physical Controls → Pads	Pad Thresh, Pad Sens, Pad Wait (how the pads respond), Shift Pad, Perform Layer
Globe → Physical Controls	Knob Curve and Knob Speed (how a fast turn behaves), Wheels (calibration)
Globe → System	Pad LEDs, Accent, Pad Colours, Save Delay
Globe → DAW & USB	USB Ports, USB Audio (the test voice as a sound card; leave it off unless you need it)

The **preset editor** (`oscuro-editor.html`) edits what every control sends when no script owns it. Close your DAW before connecting it.

Workflows

CHAPTER 15

Shape, mix, program, perform, navigate

Five ways to work in FL Studio with the keyboard, each from the controls in the previous chapters.

Program a beat

1. Select the drum channel: Channels mode (`Oct-` + pad 10), tap its pad on the top row.
2. Steps mode (`Oct-` + pad 9): tap the steps you want.
3. Hold a step and turn K1 for an accent (velocity) or K7 for a little swing (shift).
4. Back to Channels for the next sound; play fills on pad bank A.

Write and arrange patterns

1. Patterns mode (`Oct-` + pad 11): tap an empty pad for a new pattern.
2. Play a part on the keys, then `Oct-` + pad 5 (Capture) to put what you played into the pattern, or record with `SEQ REC`.
3. `Oct-` + `SEQ REC` switches to song mode to hear the playlist.

Shape a sound

Select the channel, stay in the Device view, turn K1-K8, page with `Left` / `Right`. Open an effect window with the mouse and the knobs follow it. `Oct-` + `Left` / `Right` walks the instrument and its insert's effects.

Mix and route

`SEQ` to the Mixer view: faders set four volumes, K1-K8 pan. In the Device view K11 sends the selected channel to another insert. Route mode (`Oct-` + pad 16) builds sends between inserts.

Perform live

Set up performance mode in the playlist, then Perform mode (`Oct-` + pad 15): launch clips from the pads, hold to stop a track, Shift pad + `Right` for the next blocks.

Reference

CHAPTER 16

Script settings

FL has no settings panel for scripts. The settings are in `oscfl_settings.py` in the script's folder: open it in a text editor, change a value, save, and reload the script (Options → MIDI settings → Update MIDI scripts, or restart FL).

Setting	Default	Does
`seq_views`	`True`	`SEQ` changes the views. `False` gives `SEQ` back to the keyboard's step sequencer
`soft_takeover`	`True`	Faders pick up the value. `False`: the value jumps to the fader
`accent`	`'fl'`	The script's green accent on the screen. `'off'` keeps your own (**Globe → System → Accent**)
`fine`	`False`	256 knob steps per range instead of 128 (`Oct-` or the Shift pad always gives 1024)
`follow_window`	`True`	FL's mixer window gaining the focus opens the Mixer view; another FL window (channel rack, playlist, piano roll, plugin) taking it leaves the Mixer view for Device. `False`: the views change only with `SEQ`. The Mixer always follows the selected insert
`pad_map`	the Overview's transport	What the bottom row of pad bank B does per view. `{'overview': ['Stop', 'Play', 'Rec', 'Song', 'Loop rec', 'Metro', 'Marker <', 'Marker >']}`. Names: Stop, Play, Rec, Song, Loop rec, Metro, Countdown, Step edit, Marker <, Marker >, Marker +, Undo, Redo, Capture, Tap; `''` is a dark pad. A view that is not listed keeps its pad mode's row; an unknown name is a dark pad and one line in FL's Script output
`flush_budget`	`300`	Bytes sent to the keyboard per pass. Use about **120 over Bluetooth**; lower it if the keyboard says Host lost

CHAPTER 17

Troubleshooting

Most problems come down to which firmware is running, which ports the script uses, or a keyboard page holding the controls. Start at the top.

The screen never changes to the Device view

1. **Read FL's hint bar** and View → Script output. Oscuro firmware not found on this port: the wrong port is chosen, or the keyboard runs other firmware. This SMK-37 Pro (or Elite) runs M-Vave firmware: install Oscuro, or use M-Vave's script. Set the output port number: see step 3.
2. **Is Oscuro running?** Tap `Globe` → About: it should show **DAW**.
3. **Are both directions set up?** Options → MIDI settings: the keyboard's port in **Input** with SMK-37 Oscuro and a Port number, and the same port in **Output** with the **same** Port number.
4. **Is the folder in the right place?** The `.py` files must sit directly in `Settings/Hardware/SMK37_Oscuro/`. If SMK-37 Oscuro is missing from the Controller type list, the folder is in the wrong place or nested one level too deep.
5. **Is another app holding the port?** Close the web installer, the preset editor and MIDI Suite.
6. Choose another controller type and SMK-37 Oscuro again, or replug the cable.

The screen says Host lost

The keyboard got more data than its MIDI input could take, or the link was quiet too long. Lower `flush_budget` in `oscfl_settings.py` (Bluetooth especially) and reload the script.

Knobs, pads or SEQ do the wrong thing

- **Two scripts on one port.** M-Vave's script on the same port reacts too; give that port one controller type only.
- **A keyboard page is open.** Close Globe settings, a SCALE / ARP / CHORD list or the Harmony Helper.
- **The pads play notes instead of steps.** Press `Knob Bank` and `Fader Bank` together for bank B.
- **The pads are in another mode.** Hold the Shift pad to see which; `Oct-` + pad 9 goes back to Steps.
- **Perform stays dark.** Performance mode is off in the playlist.
- `SEQ` **opens the sequencer.** `seq_views` is `False`.

A fader does nothing

Soft takeover: move it toward the arrow (F2^ up, F2v down), or set `soft_takeover` to `False`.

Keys play twice, or not at all

Pad bank A and the keys play the selected channel through FL's normal MIDI input. With Split, the Keys and Pads ports must be enabled as inputs. If the same notes also reach FL through another input, they play twice.

A preset loads the wrong one

FL does not say which preset is loaded, so the script counts from the last one it loaded (Browser). Load one from the keyboard once and it counts right from then on.

The keyboard restarted, or the cable came out

The script starts a new session by itself when the keyboard answers again. If the screen stays on the keyboard's own view, reload the script.

CHAPTER 18

Quick-reference card

Everything the SMK-37 Oscuro script does in FL Studio, on one page. `Oct-` held is the modifier; the Shift pad works the same and turns pages.

Everywhere

Control	Does
`SEQ` tap / hold	Next view (Device → Mixer → Overview) / presets of the plugin
`Oct-` + `SEQ` tap / hold	Metronome / FL's browser
`SEQ PLAY` · `Oct-` + `SEQ PLAY`	Play / pause · stop
`SEQ REC` · `Oct-` + `SEQ REC`	Record · song / pattern mode
`Oct-` + K8	Tempo (Shift pad: 0.1 BPM)
Faders 1-4 · Fader Bank B	Volumes of the 4-insert window · channel volume, pan, insert volume, pan
`Oct-` + pad 9-16	Pad mode: Steps, Channels, Patterns, Mute, Solo, Arm, Perform, Route
`Oct-` + pad 1 / 2 · 3 / 4 · 5 · 6 / 7 · 8	Inserts −8 / +8 · pattern · Capture · Undo / Redo · new pattern
Shift pad + `Left` / `Right`	The pads' page
Hold `Oct-` (Hints on)	The names of the 16 pads: what a plain tap does now

Per view

	Device	Mixer	Overview	Browser
K1-K8	plugin parameters	pan of 8 inserts	tempo, pattern, position, master vol, master pan, snap, channel, insert	K1 row, K2 eight rows
K9-K16	channel vol, pan, insert (routing), insert vol, pan, sep, master	separation of 8 inserts	8 channel volumes	—
`Left` / `Right`	bank	fader window, then next 8	1 bar	close / load, open
`Oct-` + `Left` / `Right`	plugin	8 inserts	4 bars	—

	Device	Mixer	Overview	Browser
Pad bank B bottom row	the pad mode's	the pad mode's	transport: Stop, Play, Rec, Song, Loop rec, Metro, Marker <, Marker > (`Oct-` + it picks the mode)	—
Follows FL	page line "1-8", "9-16"	the selected insert's bank; FL's mixer window opens it	—	—

Pad modes

Mode	Pad bank B
Steps	16 steps of the selected channel; tap set / clear; hold + K1-K8: velocity, release, fine pitch, pan, mod X, mod Y, shift, note
Channels	1-8 select, 9-16 mute
Patterns	16 patterns; empty pad = new pattern
Mute / Solo / Arm	1-8 select insert, 9-16 its state
Perform	8 tracks × 2 blocks; tap launch, hold stop
Route	9-16: sends from the selected insert

Stays the keyboard's

`Globe` · `PATCH` Harmony Helper · `SCALE`, `CHORD`, `ARP`, `NOTE REPEAT` · `Oct+` / `Oct-` · `Knob Bank` · `Fader Bank` · `Knob Bank` + `Fader Bank`: pad bank A / B · `BT`. An open keyboard page borrows the knobs and `Left` / `Right`.

CHAPTER 19

Glossary

The words this manual uses, in alphabetical order.

Word	Meaning
Accent	The screen's highlight colour for the session (Bitwig orange, Live amber or FL Studio green by default). It never follows the selected track
Anchor	In the Harmony Helper: the chord the suggestions stay around, played by pad 13
App slot	The area of the keyboard's flash that holds the firmware. Images larger than M-Vave's slot grow it when installed
Bank A / bank B	Two layers of the same controls: K1-K8 / K9-K16, faders 1-4 / their second set, pads (bank A notes, bank B tracks)
Browser	The view that drives the DAW's browser from the knobs
DAW build / DAW BT build	The Oscuro firmware made for controlling a DAW; BT adds Bluetooth MIDI
DAW port	With USB Ports: Split, the USB MIDI port that carries the DAW protocol
DAW protocol	The Oscuro messages between the keyboard and the script: what you touch, what the screen and lights show
Device pads	Pad bank B as the selected device's on/off switches, in the Device view
Drum pads	Pad bank B as the eight drum sounds of a Drum Machine, in the Device view
Device view	The view where the knobs are the selected device's remote controls
Fader window	The four tracks faders 1-4 control, marked F1-F4 in the Mixer
Fine steps	Knob steps eight times smaller, while `Oct-` or the Shift pad is held
Golden	A reference screen image from the keyboard's UI simulator; the screens in this manual
Key lane	The steps page for one key of a melodic track (Shift pad + Right in the Device view)
Mixer view	Eight track strips with volumes, meters and mute / solo / arm
Modulation tick	The mark on a knob arc where modulation moves the parameter right now
Oct- modifier	`Oct-` held together with another control; it then never shifts the octave
Overview	The view with tempo, position, transport states and the project remote controls

Word	Meaning
Script	The Oscuro script for your DAW: SMK-37 Oscuro (Bitwig controller extension), SMK37_Oscuro (Live Remote Script) or SMK-37 Oscuro (FL Studio MIDI script)
Session	The time the script and the keyboard are connected. It ends two seconds after the link goes quiet
Shift pad	A pad you made a Shift key in Globe → Physical Controls → Pads
Soft takeover	A fader waits until it passes the current value before it changes it
Split / One	USB Ports: three MIDI ports (Keys, Pads, DAW) or one
Steps page	The sixteen pads as sixteen sixteenth-note steps of one drum sound in the clip
Stock firmware / stock script	M-Vave's own firmware and the DAW script made for it
Track colour	The selected track's colour in the DAW, shown as a bar or line, never as the accent
View	One of the screen's layouts: Device, Mixer, Overview, Browser
Capture	FL's score log: the notes you played in the last minute go into the current pattern; `Oct-` + pad 5 of bank B
Channel	A sound in FL's channel rack (an instrument plugin or a sample); the selected channel is what the keys play and what Steps shows
Insert	A track of FL's mixer; a channel plays into one insert, which K11 in the Device view changes
oscfl_settings.py	The file in the script's folder that holds its settings; FL has no settings panel for scripts
Pad mode	What pad bank B does: Steps, Channels, Patterns, Mute, Solo, Arm, Perform or Route; `Oct-` + pads 9-16 pick it
Pattern	FL's unit of notes and steps; the playlist arranges patterns into a song
Performance mode	FL's way to launch playlist clips live, block by block; the Perform pad mode plays it
Step parameters	A step's own velocity, release, fine pitch, pan, mod X / Y, shift and note, set by holding the step and turning K1-K8