

The DrivenByMoss Manual

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1 Welcome to the DrivenByMoss Documentation

DrivenByMoss is an extension for the digital audio workstations (DAW) **Bitwig Studio** and **Cockos Reaper**. It provides support for many hardware controllers as well as protocols like OSC. Furthermore, it brings some tools and utilities.

DrivenByMoss is written by Jürgen Moßgraber also known as MOSS.

1.1 Feedback and Bug Reports

Post all questions, bug reports wishes and discussion

- related to **Bitwig Studio** into the KVR Thread.
- related to **Cockos Reaper** into the Reaper Forum Thread.

1.2 Download latest Release

Always download the latest release from my homepage.

The version on GitHub might always be in an alpha or beta state, you have been warned!

List with Bitwig Changes.

List with Reaper Changes.

1.3 Video Tutorials

There are many in-depth video tutorials available on my Youtube channel.

1.4 Installation & Feature Documentation

Follow the Installation instructions.

After that check the specific controller documentation below for additional installation notes:

- Ableton
 - Push I & II
- Akai
 - APC40 & APC40mkII
 - APCmini
- Arturia
 - Beatstep
- Mackie
 - HUI Protocol
 - MCU Protocol
- Native Instruments
 - Kontrol S25, S49, S61, S88 mk I
 - Kontrol S49, S61, S88 mk II, A-series, M32
 - Maschine Mikro Mk3
- Novation
 - Launchkey Mini Mk3
 - Launchpad MkII, Pro, Mini Mk3, X
 - SL MkI & MkII
 - SL Mk III
- Generic, Tools & Protocols
 - Auto Color
 - Generic Flexi

- Midi Monitor
- Open Sound Control (OSC)

2 Installation

2.1 Bitwig Studio

1. Extract the ZIP file. It contains a file named **DrivenByMoss.bwextension**.
2. Copy that file in the following location depending on your OS:
 - Windows: %USERPROFILE%\Documents\Bitwig Studio\Extensions\
 - Mac: ~/Documents/Bitwig Studio/Extensions/
 - Linux: ~/Bitwig Studio/Extensions/
3. Start Bitwig Studio and open the *Dashboard*. Select *Settings* and *Controllers*.
4. If **Autdetect** is enabled for most of the controllers you automatically get a popup notification.
5. Alternatively, select **Add controller manually**. In that case note that the extension does not start until you configured the necessary in- and outputs!

See the documentation of the individual controllers for further installation/configuration instructions.

2.2 Cockos Reaper

2.2.1 Installation

Unzip the downloaded file “DrivenByMoss4Reaper-X.XX-PLATFORM.zip” to the Reaper UserPlugins folder.

Important:

1. Make sure you keep the folder structure of the ZIP file intact (UserPlugins/java-runtime, UserPlugins/drivenbymoss_libs, ...)!
2. Do not put the files in an additional sub-folder (e.g. DO NOT: UserPlugins/DrivenByMoss-6.11/reaper-drivenbymoss.lib)!

Note: For the Portable Reaper installation drop the files into the “Plugins” folder of your portable installation.

You find the UserPlugins folder at the following locations:

- Windows 10 > C:\Users\<YOUR_USER_NAME>\AppData\Roaming\REAPER\UserPlugins Note that the AppData folder is hidden, you need to make it visible by enabling “Show hidden files” in the View tab of explorer.
- Mac OS X (minimum version 10.12 Sierra) > ~/Library/Application Support/REAPER/UserPlugins These folders are hidden as well. Press cmd+shift+. in the finder to make them visible.
- Linux (I am testing on Ubuntu Studio) Look up the location at which you have installed Reaper. Install the *.so file into ~/.config/REAPER/UserPlugins or in the case of a portable install into REAPER/UserPlugins.

2.2.2 Mac OS specifics

If you get the following error when starting Reaper: “reaper_drivenbymoss.dylib” can't be opened because Apple cannot check it for malicious software., do the following:

1. Run Reaper to get the error
2. Close Reaper
3. Open the System Settings
4. Open the Security tab
5. Click the Lock icon at the bottom of the window and enter your password
6. Above it you should see the notification that “reaper_drivenbymoss.dylib” was blocked
7. Click the button to “allow it anyway”

2.2.3 Accessibility Support

If you have a screen reader installed you might get the following error: `drivenbymoss: ERROR: Could not call startup.java.lang.UnsatisfiedLinkError: bin\javaaccessbridge.dll: Can't find dependent libraries`

In that case try to install the full Java JDK from: <https://adoptopenjdk.net/> This should install the missing files.

2.2.4 Configuration

1. Start Reaper
2. Open the Preferences (Ctrl+P)
3. Scroll down and select “Control/OSC/web”
4. Click on “Add”
5. In the “Control surface mode” select “DrivenByMoss4Reaper” (if it is not there, you put the `reaper_drivenbymoss` library file into a wrong location).
6. The configuration displays the `JAVA_HOME` path for information and contains a button to open the DrivenByMoss user interface. You can keep this user interface open if you want and only close the Reaper dialogs. Use the Add button in the window to add the device(s) you want to use. Select a device and click the configure button to change its settings. Your setup will automatically be loaded if you run Reaper and shutdown when you close Reaper.
7. Make sure that all MIDI inputs and outputs you configure in DrivenByMoss are fully disabled in the Reaper MIDI settings! Otherwise you will have strange effects!

2.2.5 Differences to Bitwig

DrivenByMoss is developed for Bitwig Studio. Bitwig has several concepts, which are not available in Reaper, e.g. Scenes, Clips and User parameters. However, there are alternatives implemented:

- **User Parameters:** On devices which support User Parameters, these control the Track FX parameters in Reaper.
- **Scenes:** Scenes are emulated by range markers. Starting the n-th Scene triggers playback from the start of the n-th range marker.

3 Ableton Push 1 / 2

Support script for Ableton's Push 1 and Push 2 controller. You can control track parameters, devices, transport, session view and play the pads.

3.1 Installation

To add the controller manually, choose **Ableton -> Push** or **Ableton -> Push 2** depending on your specific controller. On **Push 1** make sure that for MIDI in- and output the 2nd port is selected (**MIDIIN2 (Ableton Push)** and **MIDIOUT2 (Ableton Push)** on Windows). For **Push 2** it is the first port.

3.1.1 Installation on Linux

Accessing USB requires root access. To run the Application as a normal user copy the file `99-userusbdevices.rules` to the folder `/etc/udev/rules.d/`. It gives the group **audio** access to the Push 2 controller. Make sure that your user is a member of that group and the group does exist. A more in-depth explanation can be found [here](#). After you have copied the file reboot your computer.

3.2 Global Features

- **Play** - Start/Stop playback. Double click to move play cursor to start of song. You can configure the behavior on stop in the preferences.
- **Shift+Play** - Toggle repeat
- **Select+Play** - Toggle Punch In
- **Select+Shift+Play** - Toggle Punch Out
- **Record** - Start/Stop recording
- **Shift+Record** - Toggle launcher overdub
- **New** - It creates a new clip on the selected track and slot, starts play and enables overdub.
- **Shift+New** - Like New button but without activating launcher overdub.
- **Automation** - Toggle Automation Write. Long press to bring up the Automation dialog which allows you to change the automation mode.
- **Shift + Automation** - Toggles the clip launcher automation write enabled state of the transport.
- **Delete + Automation** - Resets any automation overrides.
- **Fixed Length** - Select the length of the midi clip for *New*. The upper row gives you the option to create a new clip of the selected length without storing it.
- **Duplicate** - Duplicates the first selected clip on the current track. Combine with a pad in session mode (duplicate clip) or a track select button (duplicate track).
- **Shift+Duplicate** - Create a new scene from the currently playing clips
- **Quantize** - Quantizes the currently selected clip.
- **Shift+Quantize** (or long press Quantize) - Access the Quantize and Groove configuration modes
- **Double (Loop)** - Duplicate the content of the currently selected clip (not the clip itself)
- **Convert** (Push 2) - Brings up the Slice to Drum Machine dialog.
- **Shift+Convert** (Push 2) - Bring up the Slice to Multi-sample dialog.
- **Undo** - Undo. Press Shift for Redo.
- **Delete** - Like pressing the delete key. Hold the button for additional functionality in combination with other buttons knobs, see the mode and view explanations below.
- **Small Knob 1** - Change tempo (press *Shift* for fine adjustment).
- **Small Knob 2** - Move play cursor (press *Shift* for fine adjustment).
- **Metronome** - Toggle metronome. Long press to bring up the metronome settings mode.
- **Shift + Metronome** - Toggle metronome ticks
- **Tap Tempo** - Tap Tempo
- **Mute** - Push 1: Selects track mute state of 2nd row. Push 2: Mutes the currently selected track. Long press for the Push 1 behavior. Lock it with **Shift+Solo**.
- **Solo** - Push 1: Selects track solo state of 2nd row. Push 2: Solos the currently selected track. Long press for the Push 1 behavior. Lock it with **Shift+Solo**.

- **Select + Mute**: Deactivate all mutes
- **Select + Solo**: Deactivate all solos
- **Knobs 1-8** Value encoders, [Shift + Knob] fine increment value change.
- **Knob 9** - Changes Master Volume
- **Select + Knob 9** - Changes the Metronome Volume
- Keep the **Master button** pressed for a screen which allows to toggle perspectives and panels.
- **Stop/Stop Clip** - Press *Shift + Stop* to stop all playing clips. Keep pressed and press one of the second row buttons to stop the clip on the specific track.
- **Footswitch 1** - Sends sustain
- **Footswitch 2** - Triggers the new button.
- **Arrows** The cursor keys now consistently always change the track (device, layers) and scene bank, except in the browser they change the browser tabs.
- **Shift+Touchstrip** - Change behavior of touchstrip: Send pitch bend, a midi CC or a mixed mode. If mixed mode is selected upwards pitch bend is sent and downwards the select midi cc.
- **Shift+Track** - Turn off/on VU meters.
- **Browse** - Enters Preset selection mode for a device. If no device is selected the browser is opened to add a device.
- **Add Track**: Adds a new instrument track
- **Shift+Add Track**: Adds a new effect track
- **Select+Add Track**: Adds a new audio track
- **Add Device** (Push 2) / **Add Effect** (Push 1): Add a device after the currently selected one
- **Shift+Add Device** (Push 2) / **Shift+Add Effect** (Push 1): Add a device before the currently selected one
- **Shift+User** (Push 1) / **Setup** (Push 2): Adjust some hardware settings like pad sensitivity. Also configurable in the script settings.
- **Repeat**: Toggles note repeat. Long press to enter Note Repeat Mode to configure the note repeat settings.
- **Accent** - If active, velocity is always max in Sequencer and Play modes. Long press Accent to change fixed accent value.
- **Scale**: De-/Activates the Scale mode
- **Layout** (Push 2): Layout button steps through the play or sequencer modes (depending on which type is active). **Shift+Layout** button toggles between play and sequencer modes.

3.3 Edit Modes

- Hold Delete and Touch Encoder to reset a value to its default value in all modes.
 - Since the Push 2 is missing the buttons Volume and Pan & Send use the navigation knobs above the display. Since you lose the Mute/Solo buttons for the navigation long press Mute or Solo for the same behavior as with Push 1. You can also lock that functionality by pressing **Shift+Mute** or **Shift+Solo**. Press the same combination to unlock it.
 - Press the Duplicate button and one of the Track-Select buttons to duplicate a track.
 - In all track modes, hold the Select button to enter the track details mode. In this mode you can set different states like enable, solo, mute, rec arm, monitor and change the color of the track. If you currently have a layer selected this brings up a similar view to edit the states of the layer. Furthermore, the note insert/edit MIDI channel can be selected in this mode.
 - Push 2: Hold Shift to access the Send 4 and 8 mode.
1. **Volume** - Push 1: Press “Volume” to enter - Push 2: Press “Mix” and “Volume” above the display
 - 8 edit knobs: Change volume of selected 8 tracks. Hold **Shift** for fine adjustments.
 - 1st 8 button row: Press to select a track, press again to enter a group. To rec arm a track, keep the record button pressed and select the channel (first button row). Use in combination with the Delete button to delete a track. Long press a button to leave a track group.
 - **Toggle monitor and auto monitor**: Keep pressed Select. First row toggles Monitor, second row Auto Monitor.
 - **De-/activate a track**: Select+Shift+1st button row.

- 2nd 8 button row: Toggle mute or solo of track, dependent of Mute or Solo button selection
 - Left/Right arrows: Select next/previous track
 - Shift+Left/right arrows: Select next/previous track bank
2. **Crossfader** - Push 1: Press “Volume” twice to enter - Push 2: Press “Mix” and “Crossfader” above the display
 - 8 edit knobs: Change crossfader setting of selected 8 tracks.
 - Buttons behave as above.
 3. **Pan & Send** - Push 1: Press “Pan & Send” to enter (press multiple times to switch between the 7 modes) - Push 2: Press “Mix” and “Send X” above the display. Toggle between the Sends 1-4 and 5-8.
 - 8 edit knobs: Change pan/send1-6 of selected 8 tracks. Hold **Shift** for fine adjustments.
 - Buttons behave as above.
 4. **Track** - Press “Track” (Push 1) or “Mix” (Push 2) to enter (press twice to toggle between normal and effect tracks)
 - 8 edit knobs: Change volume/pan/crossfader/Send1-5 of selected track. Hold **Shift** for fine adjustments. You can configure in the preferences that the crossfader option is hidden and you get 6 sends instead.
 - Buttons behave as above.
 5. **Clip** - Press “Clip” to modify clip properties
 - Loop, Play range, Shuffle and Accent
 - Other buttons behave as above.
 6. **Device** - Press “Device” to enter
 - Buttons of 1st row select the device or the parameter banks. Use in combination with the Delete button to delete a device.
 - 1st button on 2nd row in device modes dis-/enables device (button above display on Push 2).
 - 7th button on 2nd row in device modes displays VST window or pop-out window of specific Bitwig devices (button above display on Push 2).
 - 8th button on 2nd row in device modes moves up to tracks.
 - To navigate groups, layers and devices press now the respective first row button. Long press any of the first row buttons to move up the hierarchy again.
 - 8 edit knobs: Change 8 parameters of the selected device (FX). Hold **Shift** for fine adjustments. Hold the delete key and touch a knob to reset its value.
 - Left/Right buttons: Select next/previous device or parameter bank
 - Press Browse to select a different patch of the device. Hold the Shift button in Preset mode to scroll quickly.
 - Push 1: Use **Select+Volume/Pan/Track** buttons to activate the different layer modes. For Send modes press **Pan** multiple times.
 7. **Browse** - Press “Browse” to enter (a device must be selected)
 - Edit knob 8: Change the patch
 - Edit knobs 1-7: Change the different filters
 - Tempo knob: Changes the value of the last selected column
 - Hold the Shift button in Preset mode to scroll quickly.
 - 1st button row: Select the previous patch/filter
 - 2nd button row: Select the next patch/filter
 - Use the arrow left and right to switch between the browser tabs
 - **Delete+touch knob**: Resets a filter to its default value
 - Press *Browse* again to Confirm the selection or *Shift+Browse* to Cancel.
 8. **Master** - Press “Master” to enter
 - 8 edit knobs: Change volume, pan of master track and Cue Volume and Mix. Hold **Shift** for fine adjustments.
 - Dis-/Enable audio engine
 - Switch to the next/previous opened project with buttons 7 and 8.
 9. **User** - Press “User” to enter Allows to map up to 64 user parameters divided into 8 pages with 8 parameters. Right click on any parameter in Bitwig and select *Map to controller*. After that move one of the knobs in user mode to complete the mapping. Mappings are stored with each project. **IMPORTANT:**

Do not try to map any of the buttons below (or above) the display! Also do not map any other buttons or knob on the controller! This will create weird behaviour.

- 8 edit knobs: Change value of a mapped parameter. Hold **Shift** for fine adjustments.
- Left/Right buttons: Select next/previous parameter page
- Buttons of 1st row select the parameter page.
- Buttons of 2nd row select currently have no function.
- User page names can be edited in the document settings.

3.4 Play Modes

3.4.1 Note Mode

Press “*Note*” and select *Play* to change to the Play view.

- The key layout is like running the Push with Ableton
- The Touchstrip (Ribbon) can be configured for different tasks. Call up the configuration mode with Shift+Touchstrip.
- Press “*Scales*” (keep pressed for temporary) to change the scales (Chromatic, Major, Minor, etc.) and the root note with the 16 buttons below the display. Press and keep the **Shift** button to change the scale layout.
- The played keys are lighting red if global or clip recording (does not work if recording clip is outside of the monitored 8x8 matrix)
- Use the Delete button in combination with a pad. This deletes all appearances of that note in the currently selected clip. Use with care since the notes you see lit might not come from the currently selected clip!

3.4.2 Piano Mode

Press “*Note*” and select *Piano* to enter **Piano** mode.

- Arranges the pads like a classic piano keyboard.
- The white lit pads are the white keys.
- The gray lit pads are the black keys.
- You get 4 octaves to play with

3.4.3 Drum 64 play mode

Press “*Note*” and select *Drum 64*.

This mode gives you 64 pads for playing a drum device. The 16 pads in the left lower area are the same as in the drum sequencer mode.

3.5 Session Mode

Press “*Session*” to enter **Session** mode. Keep button pressed to switch back to Note mode on release. This allows you to launch clips then release the Session button to jump straight back into Note mode.

Delete + Scene button (in Play, Piano, Drum 64, Session view) deletes the scene.

Hold *Browse* and select a pad to browse for clips.

All the buttons and knobs behave like in Play mode with the following exceptions:

- The buttons on the grid start/record the clips.
- If Select is pressed when pressing a pad it is only selected and not started.
- The 1/4 to 1/32t buttons start scenes.
- The arrow keys scroll the grid. Hold **Shift** to scroll in blocks of 8.
- Pressing Shift+1st row buttons returns to the arrangement for that track.
- Press the *Fixed Length* button to choose the length for new clips.

- Press *Clip* to display the current clip in the editor.
- The ribbon controls the crossfader. Press Shift and touch the Ribbon to center the crossfader.
- Press *Delete* + Pad In Session Mode to delete the clip.

Press the Session button twice to flip the grid which then matches the arrangement view.

When in Session view and press Session again a menu turns up (like in note view) where you can select different views. The normal Session view, the flipped version and the Scene view. Use the Layout button on Push 2 to quickly step through these views. Furthermore, you can select the Marker and Clip mode.

3.6 Scene view

This view displays the first 64 scenes ready for jamming. The color of a scene uses the color of the first clip found in the scene (only checks in the first 8 tracks). **Delete + pad** deletes a scene.

3.7 Sequencers

3.7.1 Sequencer Functions common to all sequencers (except Raindrop)

- To navigate in a clip use the Page left/right (device in/out on Push 1) buttons.
- Note that you can scroll past the end of the clip (to the right).
- Press pads to enter/delete notes. The velocity of the pressed key is set as well.
- Change the note length or create long notes by pressing a note pad and then a pad right of it.
- To duplicate notes keep the Duplicate button pressed, select the source note, press empty destination pad(s). The note will be copied with all settings.
- Note starts and lengths are lit in different colors.
- Long press a pad which contains a note to edit the parameters of the note.
- Use the Scene buttons to change the grids resolution.

3.7.2 Note Sequencer

Press “*Note*” and select *Sequencer* to enter **Sequencer** mode.

- The pads display an 8x8 view of the selected clips note grid.
- The rows represent the notes of the selected scale.
- Use Shift+Octave Up/Down to transpose by 1 step. Select+Octave transposes in 12 steps.

3.7.3 Poly Sequencer

Press “*Note*” and select *Poly Seq.* to enter **Poly Sequencer** mode:

- The lower half displays the playable notes like in the Note Mode
- Play one or more notes in that area
- Create a step in the upper part by pressing a pad. The step will contain the last notes you played in the lower part.

3.7.4 Drum Sequencer

Press “*Note*” and select *Drum* to change to the Drum Sequencer.

- The drum sequencer works as described in the Push manual.
- Note starts and lengths are lit in different colors.
- Hold *Delete* + Drumpad to delete the midi notes of the current clip on that ‘pad’.
- Hold *Mute/Solo* button + Drumpad to mute/solo the drumpad.
- To make the display of mute/solo/exists states work, the primary device needs to be the drum machine (which is normally the case).
- Hold down the *Select* button while pressing a drumpad to select it without playing its sound. This also selects the according drum pad layer in the display.

- Press *Browser + Drum Pad* in Drum View and Drum 64 to open the browser.
- The Drumpads use the colors set in the drum machine for each pad.
- There are three additional drum sequencers. Press Shift in drum mode and use upper 4 scene buttons to change between the four modes. 2nd mode displays 4 drum sound, 3rd mode 8. Use the lower 4 scene buttons (while holding Shift) in 2nd mode to toggle between the drum sounds 1-4, 5-8, 9-12, 13-16. Use the lower 2 scene buttons in 3rd mode to toggle the drum sounds 1-8, 9-16. The fourth mode displays 64 drum pads.
- Use Octave Up/Down to move the pads by 16.
- Use Shift+Octave Up/Down to move the pads by 4.

3.7.5 Drum 4 and Drum 8 sequencer

Press “*Note*” and select *Drum 4* or *Drum 8*.

These drum sequencers show 4 or 8 drum sounds for sequencing. Use the Page buttons to move in the clip.

3.7.6 Raindrop sequencer

Press “*Note*” and select *Raindrop* to change to the Raindrop Sequencer.

- The lowest row displays the playable notes
- The row above a note starts a raindrop
- If the raindrop reaches the note it sounds
- Use Shift+Octave Up/Down to transpose by 1 step. Select+Octave transposes in 12 steps.

3.8 Program Change Mode

Press “*Note*” and select *PrgChang* to enter **Program Change** mode.

- Pads send program change
- Scene buttons switch banks
- Pressing scene button twice toggles 0-63 and 64-127.

3.9 Clip Mode

- The pads change the length of the currently selected clip loop
- This is the default view for audio tracks.

3.10 Preferences Dialog

You can set several preferences which are stored when you exit the DAW. Note that some of them are not available via the Push controller.

- Ribbon, Accent, Scale, VU meter and Pad sensitivity settings.
- Option to convert the Poly Aftertouch of the pads to Channel Aftertouch or a CC.

4 Akai APC40 / APC40mkII

Support script for Akais' APC40 and APC40mkII controller.

4.1 Navigation

- **Play** - Start/Stop playback. Double click to move play cursor to start of song.
- **Shift+Play** - Toggle repeat
- **Stop** *only mkI* - Stop playback. Press again to move play cursor to start of song.
- **Record** - Start/Stop recording
- **Shift+Record** - Creates a new clip on the selected track and slot, starts play and enables overdub.
- **Shift+Track selection buttons** - Select the length for new clips: 16 bars, 8 bars, 4 bars, 2 bars, 1 bar, 2 beats, 1 beat, 32 bars
- **Metronome** - Toggle metronome
- **Shift + Metronome** - Enable Metronome Ticks
- **Detail View** - Toggle plugin window (if any)
- **Shift+Detail View** - Step through the layout perspectives
- **Cue Level** - Move play cursor (press shift for finer adjustment)
- **Tap Tempo** - Tap Tempo
- **Nudge+** - Redo
- **Nudge-** - Undo

4.1.1 Specifics for the Mk I

- **Midi Overdub** - Toggle launcher overdub.
- **Rec Quantization** - Quantize selected clip.

4.1.2 Specifics for the Mk II

- **Session** - Toggle launcher overdub
- **Shift + Session** - Enable automation write in clip launcher
- **Dev. Lock** - Quantize selected clip.
- **Shift + Dev. Lock** - Pin the cursor track and the cursor device.
- **Tempo** - Change the tempo. Keep Shift pressed for fine adjustment.

4.2 Device and Parameters

- **Device Knobs 1-8** - Change the currently selected 8 device parameters
- **Device On/Off** - Turn the selected device on/off
- **Clip/Track** - Toggles the devices panel

4.2.1 Devices - Specifics for the Mk I

- **Arrow left** - Move focus to previous device
- **Arrow right** - Move focus to next device
- **Shift+Arrow left** - Select previous parameter bank of device
- **Shift+Arrow right** - Select next parameter bank of device

4.2.2 Devices - Specifics for the Mk II

- **Device Arrow left** - Move focus to previous device or select previous layer if in layer mode
- **Device Arrow right** - Move focus to next device or select next layer if in layer mode
- **Shift+Device Arrow left** - Exit layer mode or a layer ("out")
- **Shift+Device Arrow right** - Enter layer mode or enter a layer ("in")
- **Bank Arrow left** - Select previous parameter bank of device
- **Bank Arrow right** - Select next parameter bank of device

4.3 Browser

4.3.1 Browser - Specifics for the Mk I

- Press *Shift+Stop All Clips* button
- Navigate columns with the *Track Control knobs*.
- To confirm the patch selection and close the Browser press *Shift+Stop All Clips* again.

4.3.2 Browser - Specifics for the Mk II

- Press the *Bank* button
- Navigate columns with the *Track Control knobs*.
- To confirm the patch selection and close the Browser press *Bank* again. To discard the patch selection press *Shift+Bank*.

4.4 Tracks

- **8 faders** - Change volume of selected 8 tracks.
- Press Shift and move Volume Fader to move the fader to the current value of the matching track. On the screen you get information if you need to move it up or down.
- **Master fader** - Change volume of master fader
- **Activator buttons** - Un-/mute the specific track
- **Solo buttons** - Un-/solo the specific track
- **Record-arm buttons** - Press to arm the specific track for recording.
- **Shift+Mute, Shift+Solo** - Toggle monitor and auto monitor
- ****A|B buttons*** (on first version press Shift+RecArm) - Select channel A or B for crossfader.
- **Cursor right** - Move track bank focus 1 track up
- **Cursor left** - Move track bank focus 1 track down
- **Shift+Cursor right** - Move track bank focus 8 tracks up
- **Shift+Cursor left** - Move track bank focus 8 tracks down
- **Track selection buttons** - Select the specific track
- **Master button** - Select the master track
- **Shift+Master button** - Toggles between editing of normal and effect tracks.
- **Track control**
 - Press and hold **Sends/Send A** button and press **Track Select 1-8** to select the sends 1 to 8.
 - *only mkI* Press Shift+Send A/B/C to select the sends 4 to 6.

4.5 User mode - *only mkII*

- Press USER to select the user mode.
- **Device Knobs 1-8** - Change the mapped user parameter
- **Cursor right** - Move to next user page
- **Cursor left** - Move to previous user page

4.6 Clip/scene control

- **Clip Stop** - Stop the clip on the specific track.
- **Shift+Clip Stop** - Returns to the arrangement of that track.
- **Stop all clips** - Press this button to stop all playing clips.
- **Scene launch buttons** - Start the specific scene
- **Cursor up** - Move scene focus 1 scene up
- **Cursor down** - Move scene focus 1 scene down
- **Clip launch** - The buttons on the grid start/record the clips.

4.7 Foot switches

- **Footswitch 1** - Sends sustain
- **Footswitch 2** *only mkI* - Creates a new clip on the selected track and slot, starts play and enables overdub.

But there is MUCH more! If you keep the Shift button pressed and press one of the five Scene Launch buttons you will change the main modes of the script:

- 1st button: Session mode (the basic functionality)
- 2nd button: Play mode, allows you to play notes in different scales
- 3rd button: Drum sequencer (as known from the Push) - Requires a selected midi clip
- 4th button: Note sequencer (as known from the Push) - Requires a selected midi clip
- 5th button: Raindrop sequencer - Requires a selected midi clip

4.8 Play Mode

- *Grid* - Play notes in the currently selected scale.
- *Scene Launch button 1* - Selects the next Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 2* - Selects the previous Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 3* - Switch between Chromatic and In-Key.
- *Scene Launch button 4* - Transpose notes 1 octave up. The new key range is displayed on the computer screen.
- *Scene Launch button 5* - Transpose notes 1 octave down. The new key range is displayed on the computer screen.
- Press **Shift** and use the first two row buttons (arranged like a keyboard) to select the root note of the scale.

4.9 Sequencers

4.9.1 Drum Sequencer

- The drum sequencer works as described in the Ableton Push manual. The differences are:
 - Since the APCs have only 5 rows of clip buttons the selection/play grid has only 3 rows and the notes have only 2 rows.
 - The 4th drum row cannot be accessed
 - Use the measure bars to select unseen notes.
- *Clip Stop buttons* - Select the note resolution (displayed on computer screen)
- *Scene Launch button 4* - Transpose notes 1 block up. The new key range is displayed on the computer screen.
- *Scene Launch button 5* - Transpose notes 1 block down. The new key range is displayed on the computer screen.

4.9.2 Note Sequencer

- The pads display an 5x8 view of the selected clips note grid.
- The rows represent the notes of the selected scale.
- Note that you can scroll past the end of the clip (to the right).
- Press pads to enter/delete notes.
- Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
- Use the Clip Stop buttons to change the grids resolution.
- *Scene Launch button 1* - Selects the next Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 2* - Selects the previous Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 3* - Switch between Chromatic and In-Key.
- *Scene Launch button 4* - Transpose notes 1 octave up. The new key range is displayed on the computer screen.

- *Scene Launch button 5* - Transpose notes 1 octave down. The new key range is displayed on the computer screen.
- Press **Shift** and use the first two row buttons (arranged like a keyboard) to select the root note of the scale.

4.9.3 Raindrop sequencer

- The lowest row displays the playable notes
- The row above a note starts a raindrop
- If the raindrop reaches the note it sounds
- *Scene Launch button 1* - Selects the next Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 2* - Selects the previous Scale. The new scale is displayed on the computer screen.
- *Scene Launch button 3* - Switch between Chromatic and In-Key.
- *Scene Launch button 4* - Transpose notes 1 octave up. The new key range is displayed on the computer screen.
- *Scene Launch button 5* - Transpose notes 1 octave down. The new key range is displayed on the computer screen.
- Press **Shift** and use the first two row buttons (arranged like a keyboard) to select the root note of the scale.

4.10 Functions in Shift mode

If you keep Shift pressed there are additional functions available on the pads of the 5th (top) row:

- 1st: Add instrument track
- 2nd: Add audio track
- 3rd: Add effect track
- 4th: Add device before
- 5th: Add device after
- 7th: Undo
- 8th: Redo

4.11 Preferences dialog

- Set preferences for Scale settings

5 Akai APCmini

Support script for Akais' APCmini controller. You can control track parameters, devices and session view.

5.1 Installation

If you added the controller manually, select the MIDI input without an extension (not: "EXT, DAW") and the USB connection (there should be only one option for that).

5.2 Features

For the basic usage see the APCmini manual. The differences are as follows:

- *Shift+Device* - Pressing multiple times toggles between Device and Macro editing.
- *Shift+Scene button 6* - Toggles between editing of normal and effect tracks.
- *Shift+Scene button 7* - Toggles VST window.

But there is MUCH more! If you keep the *Shift* button pressed the grid reveals more options:

- **Buttons in left upper corner** - These five buttons change the main modes of the script
 - 1st button: Session mode (the basic functionality)
 - 2nd button: Play mode, allows you to play notes in different scales
 - 3rd button: Drum sequencer (as known from the Push) - Requires a selected midi clip
 - 4th button: Note sequencer (as known from the Push) - Requires a selected midi clip
 - 5th button: Raindrop sequencer - Requires a selected midi clip
- ***Buttons on the bottom**** - These buttons form a 1 octave keyboard. Press one of the keys to select the base note of the current scale. Used for *Play*, *Rain* and *Note Sequencer* mode.
- **8th column buttons** (from top to bottom) - Transport control
 - Play/Stop
 - Record on/off
 - Toggle arrangement loop on/off
 - Toggle click on/off
- **7th column buttons** (from top to bottom) - Clip/global control
 - Create a new 1 bar clip
 - Toggle overdub recording on/off
 - Quantize
 - Undo
- **Buttons in the center of the Shift-page**
 - Select next / previous device with the two green buttons on the left.
 - Select next / previous device parameter bank with the two orange buttons on the left of the Shift-page.
 - The two red buttons in the middle change the scale.
 - Toggle in-key/chromatic with pad below the scale selection pads).
- *Shift+Cursor up* - Scrolls scene bank down (8 scenes)
- *Shift+Cursor down* - Scrolls scene bank up (8 scenes)
- *Shift+Cursor left* - Scrolls track bank down (8 tracks)
- *Shift+Cursor right* - Scrolls track bank up (8 tracks)

5.3 Browser Mode

Press "*Shift+Device*" twice to enter the browser mode for preset selection. It will only enter the mode if a device is currently selected.

- The first 6 columns of the grid relate to the first 6 columns of the preset browser.
- The 8th column (yellow) relates to the result (preset) column of the browser.
- The 1st row moves the selection up by 1.
- The 2nd row moves the selection up by 8.

- The 3rd row moves the selection down by 8.
- The 4th row moves the selection down by 1.
- The red button dismisses the new preset selection and closes the browser.
- The green button confirms the new preset selection and closes the browser.
- The yellow buttons of the 1st row are for previewing presets of instrument devices.

5.4 Session Mode

- Press pad to start clip
 - Yellow: Present clip
 - Green: Playing clip
 - Red: Recording clip
- **Track buttons** - Clip stop, solo, rec arm, mute or select

5.5 Play Mode

- *Grid* - Play notes in the currently selected scale. Yellow pads are the base notes.
- **Track buttons** - like in Session mode
- *Scene Launch buttons* - Top 2 buttons change the scale layout. 3rd button has no function. 4th and 5th button change the scale. 6th button toggles chromatic mode. 7th and 8th button change the octave.

5.6 Drum Sequencer

- The drum sequencer works as described in the Ableton Push manual.
- *Cursor up* - Move the note range up.
- *Cursor down* - Move the note range down.
- *Cursor left* - Decrease the edit page of the clip.
- *Cursor right* - Increase the edit page of the clip.
- *Scene Launch buttons* - Select the note resolution (displayed on computer screen)

5.7 Note Sequencer

- The pads display an 8x8 view of the selected clips note grid.
- The rows represent the notes of the selected scale.
- Note that you can scroll past the end of the clip (to the right).
- Press pads to enter/delete notes.
- Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
- Use the Scene buttons to change the grids resolution.
- *Cursor up* - Move the note range up.
- *Cursor down* - Move the note range down.
- *Cursor left* - Decrease the edit page of the clip.
- *Cursor right* - Increase the edit page of the clip.

5.8 Raindrop sequencer

- The lowest row displays the playable notes
- The row above a note starts a raindrop
- If the raindrop reaches the note it sounds
- *Cursor up* - Move the note range up.
- *Cursor down* - Move the note range down.
- *Cursor left* - No function.
- *Cursor right* - No function.

5.9 Preferences dialog

- Scale settings
- Fader Ctrl, Soft Keys

6 Arturia Beatstep

Support script for Arturia's Beatstep controller. You can control track parameters incl. groups, devices, transport, browse patches, session view, play the pads and have a drum and note sequencer.

Known Issues: - The LEDs update unreliably on macOS and Linux

6.1 Installation

Load the respective template from the folder *resources/Beatstep* into the device by using Arturias Midi Control Center.

Make sure that the Global MIDI channel is set to 3.

6.2 Features

The buttons on the left are not usable for scripting since they do not send MIDI data. Luckily, I could facilitate the Shift button for an extended functionality. The Play and Stop button do send midi data but also start the internal sequencer which overwrites the knob colors. If you do not care about that problem you can use the hardware sequencer as well. For that there is a specific midi input to select in Bitwig.

The big knob is used to move the play cursor in the Arrange view. Warning: Don't use it in combination with the Shift button or you will (still) transpose the midi notes sent by the pads, which will make the pads act funny.

6.3 Shift-Mode (when the Shift button is pressed) - Mode change and Transport

The script provides several modes which you can switch when kepted the Shift button pressed and press one of the first 6 pads on the upper row.

The following lists display the functionality of the knobs and pads in the different modes. The first line is knob row 1, the second line knob row 2, the third line pad row 1 and finally the fourth line pad row 2.

6.4 Track (and Transport)

In this mode you can edit the parameters of the selected track (First 5 knobs of the first row and the first 6 buttons of the second row). To select a track use the first row of pads. 7th and 8th pad of the second row moves the track page up and down by 8. The other knobs and pads are for controlling the transport (play position and state) and tempo.

6.5 Device

In this mode you can edit the parameters of the selected device. The first knob is identical to the *Track mode*. The 2nd knob row edits the 8 parameters of the currently selected parameter page. To change the page use the first row of pads. To move the page bank up and down use the 7th and 8th pad of the second row. The second pad row allows to turn the device off/on, select the previous or next device, move *in* and *out* of layers and toggle between device parameters and direct parameters (useful for VSTs).

6.6 Play

This mode is for playing notes in a selected scale. The first knob and half of the second knob row is identical to the *Track mode*. The pads play the notes of the current scale and octave. The pads containing the root notes are coloured. The second row knobs 5 to 8 allows you to toggle between chromatic and scale mode, select the base note for the scale, the scale and the octave.

6.7 Drum Sequencer

This mode is for playing drum notes and drum sequencing. The first knob and half of the second knob row is identical to the *Track mode*. The sequencer uses the pads which form 16 steps. They have two modes which are toggled with the 8th knob of the 2nd row. The Play mode is for playing the notes, the last played note selects it for the step sequencer. The Sequencer mode allows to dis/enable each step of the selected note. The sequencer works on a clip. Therefore, you need to have a (playing) clip selected on the respective track. The 6th knob of the 2nd row changes the resolution of the grid (default is 16th notes). If you have more than 16 steps use the 5th knob to move between the different parts. The 7th knob changes the octave of the notes.

6.8 Sequencer

This mode is for playing notes and step sequencing. The first knob and half of the second knob row is identical to the *Track mode*. The usage is identical to the *Drum Sequencer* but respects the selected scale settings.

6.9 Session

This mode is for launch the 8 scenes of the current scene bank. The first knob and half of the second knob row is identical to the *Track mode*. Press the first row pads to launch one of the 8 scenes of the current scene bank. Use the pads 7 and 8 to move the scene bank by 8.

6.10 Patch Browser

This mode is for browsing patches of a device. The first knob row has no function and the second row corresponds to the columns of the browser. The blue pad accepts the selection, the red one discards it.

7 Auto Color

Enabling this switch in the settings provides auto coloring of tracks. In the settings of the script you can set a search string for each color. E.g. if you write “Bass” after the color red, all tracks, which contain the word “Bass” in their name will automatically be colored in red. For multiple search strings use a comma, e.g. I put “Drum,BD,Snare,HiHat,Crash” after blue to auto color all drum related tracks.

8 Generic Flexi

Supports any MIDI controller with 1 midi in-/output.

Open the settings to configure your device. First, select the input and output of your MIDI controller. You have 200 slots to map buttons, knobs, faders, etc. to a function in your DAW.

Select the slot in which you want to put a mapping.

To assign a slot press a button or move a knob/fader on your controller. You should see the transmitted MIDI CC, note or Program Change (other MIDI data types are not supported) that was sent by your controller.

Click the Set button to assign this MIDI values to the selected slot. After that select the function you want to assign. If you want to clear a slot, set the MIDI trigger type to “Off”.

IMPORTANT: Your settings are not automatically stored!

8.1 Storing and loading a configuration

- In the **Ex-/Import** section enter a file name in the text field to store to. On Windows and Mac you can click on the Select button to choose a file. On Linux you have to type the file name. Make sure you choose a name in a writable folder.
- Click on Export to store the settings.
- Click on Import to load a configuration (make sure you export your current configuration first).

8.2 The parameters are as follows:

- Type: MIDI status type, which triggers the function: CC, a note, program change command or pitchbend
- Number: The CC, note or Program change number, which should trigger the function (ignored for pitchbend)
- Midi Channel: The midi channel (1-16), on which the MIDI message should be accepted/received
- Knob Mode: This option only applies to continuous functions like changing the volume of a track. Depending on the possibilities of your controller knob you need to choose the matching mode.
- Function: Choose a function from the different categories that should be executed, when the configured MIDI message is received.
- Send value to device: This option only applies to continuous functions like changing the volume of a track. If it is enabled, the current value is sent to the controller with the configured CC.

8.3 Features of Modes

8.3.1 Track Mode

- Set Item value 1-8: 1) Change Volume of selected track 2) Change Panorama of selected track 3-8) Change volume of Send 1-6
- Select Item 1-8: Select track 1-8 in the current bank page
- Select Next Item: Select the next track (if any)
- Select Previous Item: Select the previous track (if any)
- Select Next Item Page: Select the next page of the track bank
- Select Previous Item Page: Select the previous page of the track bank

8.3.2 Volume Mode

- Set Item value 1-8: Change Volume of track 1-8 in the current bank page
- Other controls are the same as in track mode

8.3.3 Panorama Mode

- Set Item value 1-8: Change Panorama of track 1-8 in the current bank page
- Other controls are the same as in track mode

8.3.4 Send 1-8 Mode

- Set Item value 1-8: Change Volume of the Send X of track 1-8 in the current bank page
- Other controls are the same as in track mode

8.3.5 Device Mode

- Set Item value 1-8: Change the value of parameter 1-8 in the current bank page
- Select Item 1-8: Select parameter page 1-8
- Select Next Item: Select the next device (if any)
- Select Previous Item: Select the previous device (if any)
- Select Next Item Page: Select the next page of parameters
- Select Previous Item Page: Select the previous page of parameters

8.3.6 Browser Mode

- Set Item value 1-8: Change the selection of filter 1-7, knob 8 changes the selected result
- Select Item 1-8: Select next item in filter columns 1-7 and result column
- Select Next Item: Select the next tab in the browser (if any)
- Select Previous Item: Select the previous tab in the browser (if any)
- Select Next Item Page: Confirm the browser selection and close the browser
- Select Previous Item Page: Discard the browser selection and close the browser

8.4 Configuring Program Banks

If the controller is a synthesizer (or only a synthesizer) you can configure Program Banks from which you can select Programs to send MIDI program changes to the synthesizer. This way you can select patches directly from the document settings in Bitwig (right hand pane).

The program banks are contained in a file which must be placed in the same directory as the properties file for the Flexi configuration. The difference is that the ending is *programs* instead of *properties*. E.g. if you created a setup *MatrixBrute.properties* you need to have a file *MatrixBrute.programs*. The **resources** folder of DrivenByMoss contains an example file (Example.programs).

For each bank in the file you need to have one line of the format

for example to have a bank named *Bank A*, which is addressed by MSB 0 and LSB 0 on MIDI channel 1, write:

After that up to 127 lines with program names can follow (you can have less).

8.5 Configure the keyboard / pads

If your controller has a keyboards or pads you can enable it by configuring the MIDI channel. The MIDI channel can also be turned off or set to all. If a MIDI note is mapped to a function on this MIDI channel, the note is blocked from being played. **Note:** If you have selected All for the channel the note is blocked on all channels!

The Modulation Wheel (CC 01), Sustain Pedal (CC 64) and Pitchbend can automatically be routed to your DAW. Turn them off if you want to map them to something else.

9 Midi Monitor

Displays all midi information of the selected input device in the logging area of the extension console.

10 Open Sound Control (OSC) protocol

Supports the OSC protocol.

10.1 Installation

1. Select a midi input port. It is not really important which one you choose because it is just used to insert midi notes into the DAW received as an OSC command. Best thing is to use a virtual midi port.
2. Adjust the IP-addresses and ports of your computer and the client device you want to use.

The ZIP file has a folder *resources/OSC* which contains example files for Cycling 74s Max, TouchOSC and Open Stage Control. Note: The templates require the setting “resolution” to be set to low.

10.2 The following OSC messages are sent from the script

MAX_VALUE is configured in the configuration settings.

10.2.1 Send - Project

- /project/name
- /project/engine

10.2.2 Send - Transport

- /play {1,0}
- /record {1,0}
- /repeat {1,0}
- /click {1,0}
- /click/volume {0-MAX_VALUE}
- /click/volumeStr {text}
- /click/preroll {0,1}
- /punchIn {1,0}
- /punchOut {1,0}
- /preroll {0,1,2,4}
- /overdub {1,0}
- /overdub/launcher {1,0}
- /crossfade {0-MAX_VALUE}
- /autowrite {0,1}
- /autowrite/launcher {0,1}
- /automationWriteMode {latch,touch,write}
- /beat/str {measures.quarters.eights.ticks} Reaper: {measures.beats.ticks}
- /time/str {hours.minutes.seconds.milliseconds}
- /time/signature {numerator / denominator}
- /tempo/raw {0-666}
- /quantize

10.2.3 Send - Layout and panels

- /layout {arrange,mix,edit}
- /arranger/playbackFollow {0,1}
- /arranger/trackRowHeight {0,1}
- /arranger/cueMarkerVisibility {0,1}
- /arranger/clipLauncherSectionVisibility {0,1}
- /arranger/timeLineVisibility {0,1}
- /arranger/ioSectionVisibility {0,1}
- /arranger/effectTracksVisibility {0,1}

- /mixer/clipLauncherSectionVisibility {0,1}
- /mixer/crossFadeSectionVisibility {0,1}
- /mixer/deviceSectionVisibility {0,1}
- /mixer/sendsSectionVisibility {0,1}
- /mixer/ioSectionVisibility {0,1}
- /mixer/meterSectionVisibility {0,1}

10.2.4 Send - Track

- /track/toggleBank {0,1} 1 if Effect track bank is active
- /track/hasParent {0,1} 1 if there is a parent track
- /track/{1-8}/name
- /track/{1-8}/type
- /track/{1-8}/isGroup
- /track/{1-8}/activated
- /track/{1-8}/exists
- /track/{1-8}/canHoldNotes
- /track/{1-8}/canHoldAudioData
- /track/{1-8}/position
- /track/{1-8}/selected
- /track/{1-8}/volume {0-MAX_VALUE}
- /track/{1-8}/volumeStr {text}
- /track/{1-8}/pan {0-MAX_VALUE}
- /track/{1-8}/panStr {text}
- /track/{1-8}/mute {1,0}
- /track/{1-8}/solo {1,0}
- /track/{1-8}/recarm {1,0}
- /track/{1-8}/monitor
- /track/{1-8}/autoMonitor
- /track/{1-8}/crossfadeMode/{A,B,AB}
- /track/{1-8}/vu
- /track/{1-8}/color with rgb(r,g,b). r,g,b = 0..255
- /track/{1-8}/send/{1-8}/volume {0-MAX_VALUE}
- /track/{1-8}/send/{1-8}/volumeStr {text}
- /track/{1-8}/send/{1-8}/name {text}
- /track/selected/{attribute} Sends all attributes (as above) of the currently selected track of the active track bank
- /master/... as above, except sends

10.2.5 Send - Scene

- /scene/{1-8}/exists
- /scene/{1-8}/name
- /scene/{1-8}/selected

10.2.6 Send - Slots

- /track/{1-8}/clip/{1-8}/name
- /track/{1-8}/clip/{1-8}/isSelected {1,0}
- /track/{1-8}/clip/{1-8}/hasContent
- /track/{1-8}/clip/{1-8}/color with rgb(r,g,b). r,g,b = 0..255
- /track/{1-8}/clip/{1-8}/isPlaying
- /track/{1-8}/clip/{1-8}/isRecording
- /track/{1-8}/clip/{1-8}/isPlayingQueued
- /track/{1-8}/clip/{1-8}/isStopQueued (does not work)
- /track/{1-8}/clip/{1-8}/isRecordingQueued

10.2.7 Send - Device

- /device/exists {0,1}
- /device/name {text}
- /device/bypass {0,1}
- /device/expand {0,1}
- /device/window {0,1}
- /device/param/{1-8}/name {text}
- /device/param/{1-8}/value {0-MAX_VALUE}
- /device/param/{1-8}/valueStr {text}
- /device/param/{1-8}/modulatedValue
- /device/layer/{1-8}/exists
- /device/layer/{1-8}/activated
- /device/layer/{1-8}/selected
- /device/layer/{1-8}/name
- /device/layer/{1-8}/volumeStr
- /device/layer/{1-8}/volume
- /device/layer/{1-8}/panStr
- /device/layer/{1-8}/pan
- /device/layer/{1-8}/vu
- /device/layer/{1-8}/mute
- /device/layer/{1-8}/solo
- /device/layer/{1-8}/color with rgb(r,g,b). r,g,b = 0..255
- /device/layer/{1-8}/send/{1-8}/volume {0-MAX_VALUE}
- /device/layer/{1-8}/send/{1-8}/volumeStr {text}
- /device/layer/selected/... Same attributes as for a layer
- /device/drumpad/{1-16}/... Same attributes as for a layer
- /device/drumpad/selected/... Same attributes as for a layer
- /device/page/{1-8}/selected {0,1}
- /device/page/{1-8}/ {name}
- /device/page/selected/name {name}
- /device/sibling/{1-8}/name {name}
- /device/sibling/{1-8}/selected {0,1}

10.2.8 Send - User Parameters

- /user/{1-8}/name {text}
- /user/{1-8}/value {0-MAX_VALUE}

- /user/{1-8}/valueStr {text}
- /user/{1-8}/modulatedValue
- /user/{1-8}/selected {0,1}
- /user/{1-8}/ {name}
- /user/selected/name {name}

10.2.9 Send - Browser

- /browser/isActive {0,1}
- /browser/filter/{1-6}/wildcard
- /browser/filter/{1-6}/exists
- /browser/filter/{1-6}/name
- /browser/filter/{1-6}/item/{1-16}/exists
- /browser/filter/{1-6}/item/{1-16}/name
- /browser/filter/{1-6}/item/{1-16}/hits
- /browser/filter/{1-6}/item/{1-16}/isSelected
- /browser/result/{1-16}/exists
- /browser/result/{1-16}/name
- /browser/result/{1-16}/isSelected
- /browser/tab {name} The name of the selected browser tab

10.2.10 Send - Marker

- /marker/{1-8}/exists {0,1}
- /marker/{1-8}/name {name}
- /marker/{1-8}/color with rgb(r,g,b). r,g,b = 0..255

10.2.11 Send - Play

/vkb_midi/note/{0-127}/color rgb(r,g,b) Sends different colors for root notes, scale notes, out-of-scale notes, pressed or sequence notes (in red if recording is enabled).

10.3 The following OSC messages can be received by the script

10.3.1 Receive - Global

- /preroll {0,1,2,4}
- /undo
- /redo

10.3.2 Receive - Project

- /project/{+,-} Switch to the next/previous opened project
- /project/engine {1,0,-} De-/Activate the audio engine
- /project/save Save the current project

10.3.3 Receive - Transport

- /stop {1,-} Stops playback
- /play {1,-} Starts playback
- /playbutton {1,-} Toggles playback, you can configure the Stop behaviour in the configuration settings
- /restart {1,-} Restarts playback from the beginning of the timeline
- /repeat {1,-} Toggles repeat (loop)
- /click {1,-} 1 = Enable, No value ("") = Toggle
- /click/volume
- /click/preroll {-,1} Toggles click in preroll

- /punchIn {1,-}
- /punchOut {1,-}
- /record {1,-}
- /overdub {1,-}
- /overdub/launcher {1,-}
- /crossfade {0-MAX_VALUE}
- /autowrite {0,1}
- /autowrite/launcher {0,1}
- /automationWriteMode {latch,touch,write}
- /tempo/raw {0-666}
- /tempo/tap
- /position/{+,-} Small in-/decrease of play position
- /position/{++,--} Large in-/decrease of play position
- /position {-2,-1,1,2} Small in-/decrease of play position for -1 and 1, large for all other values

10.3.4 Receive - Layout and panels

- /layout/{arrange,mix,edit}
- /panel/noteEditor {0,1}
- /panel/automationEditor {0,1}
- /panel/devices {0,1}
- /panel/mixer {0,1}
- /panel/fullscreen {0,1}
- /arranger/cueMarkerVisibility {0,1}
- /arranger/playbackFollow {0,1}
- /arranger/trackRowHeight {0,1}
- /arranger/clipLauncherSectionVisibility {0,1}
- /arranger/timeLineVisibility {0,1}
- /arranger/ioSectionVisibility {0,1}
- /arranger/effectTracksVisibility {0,1}
- /mixer/clipLauncherSectionVisibility {0,1}
- /mixer/crossFadeSectionVisibility {0,1}
- /mixer/deviceSectionVisibility {0,1}
- /mixer/sendsSectionVisibility {0,1}
- /mixer/ioSectionVisibility {0,1}
- /mixer/meterSectionVisibility {0,1}

10.3.5 Receive - Track

- /track/bank/{+,-} Scrolls bank by 1
- /track/bank/page/{+,-} Scrolls bank by 8
- /track/{1-8}/color rgb(r,g,b) with r,g,b = 0..255
- /track/{+,-} Select the next/previous track
- /track/vu {0,1} En-/Disable VU-Meter notifications
- /track/toggleBank Toggles between the Audio/Instrument and Effect track bank
- /track/add/audio
- /track/add/effect
- /track/add/instrument
- /track/{1-8}/activated {0,1}
- /track/{1-8}/select
- /track/{1-8}/volume {0-MAX_VALUE}
- /track/{1-8}/volume/indicate {0,1}
- /track/{1-8}/volume/reset
- /track/{1-8}/volume/touched {0,1}
- /track/{1-8}/pan {0-MAX_VALUE}

- /track/{1-8}/pan/indicate {0,1}
- /track/{1-8}/pan/reset
- /track/{1-8}/pan/touched {0,1}
- /track/{1-8}/mute {1,0,-}
- /track/{1-8}/solo {1,0,-}
- /track/{1-8}/recarm {1,0,-}
- /track/{1-8}/monitor
- /track/{1-8}/autoMonitor
- /track/{1-8}/crossfadeMode/{A,B,AB} {1}
- /track/{1-8}/send/{1-8}/volume {0-MAX_VALUE}
- /track/{1-8}/send/{1-8}/volume/indicate {0,1}
- /track/{1-8}/clip/{1-8}/select
- /track/{1-8}/clip/{1-8}/launch
- /track/{1-8}/clip/{1-8}/record
- /track/{1-8}/clip/{1-8}/remove
- /track/{1-8}/clip/{1-8}/color rgb(r,g,b) with r,g,b = 0..255
- /track/{1-8}/clip/stop
- /track/{1-8}/clip/returntoarrangement
- /track/stop
- /track/indicate/volume {0,1} Indicate the volumes of all 8 tracks
- /track/indicate/pan {0,1} Indicate the pans of all 8 tracks
- /track/indicate/send/{1-8} {0,1} Indicate send 1-8 of all 8 tracks
- /track/selected/{attribute} (as above)
- /master/... (as above, except sends)

10.3.6 Receive - Track Groups

- /track/{1-8}/enter Enter the group, if the track is a group
- /track/parent Select the parent (group)

10.3.7 Receive - Cursor Device / Primary Device

- /device/{+,-}
- /device/window Displays the window for VST plugins (or Bitwig devices with additional popout windows)
- /device/bypass
- /device/expand
- /device/param/{+,-}
- /device/param/bank/page/{+,-}
- /device/param/{1-8}/value {0-MAX_VALUE}
- /device/param/{1-8}/indicate {0,1}
- /device/param/{1-8}/reset
- /device/param/{1-8}/touched
- /device/indicate/param {0,1}
- /device/page/selected {1-8}
- /device/bank/page/{+,-}
- /device/sibling/{1-8}/selected {0,1}
- /device/layer/{1-8}/selected
- /device/layer/{1-8}/volume {0-MAX_VALUE}
- /device/layer/{1-8}/volume/indicate {0,1}
- /device/layer/{1-8}/volume/touched {0,1}
- /device/layer/{1-8}/pan {0-MAX_VALUE}
- /device/layer/{1-8}/pan/indicate {0,1}
- /device/layer/{1-8}/pan/touched {0,1}
- /device/layer/{1-8}/mute {1,0,-}

- /device/layer/{1-8}/solo {1,0,-}
- /device/layer/{1-8}/send/{1-8}/volume {0-MAX_VALUE}
- /device/layer/{1-8}/send/{1-8}/volume/indicate {0,1}
- /device/layer/{1-8}/send/{1-8}/volume/touched {0,1}
- /device/layer/{1-8}/enter
- /device/layer/parent
- /device/layer/{+,-}
- /device/layer/page/{+,-}
- /device/layer/selected/{attributes} The selected layer, same attributes as above
- /device/drumpad/{1-16}/... Same attributes as for a layer
- Same commands apply for the primary device but use /primary/... instead of /device/...

10.3.8 Receive - User Parameters

- /user/{+,-}
- /user/page/selected {1-8}
- /user/page/{1-8}
- /user/{1-8}/value {0-MAX_VALUE}
- /user/{1-8}/indicate {0,1}
- /user/{1-8}/reset
- /user/{1-8}/touched

10.3.9 Receive - Scene

- /scene/{1-8}/launch
- /scene/{+,-} Step by 1
- /scene/bank/{+,-} Step by 8
- /scene/create Create a new scene from all playing clips

10.3.10 Receive - Browser

- /browser/preset Activates the browser to browse for presets of the currently selected device
- /browser/device Activates the browser to insert a device after the currently selected device
- /browser/device/after (same as /browser/device)
- /browser/device/before Activates the browser to insert a device before the currently selected device
- /browser/commit Commits the current selection in the browser
- /browser/cancel Cancels the current browser session
- /browser/filter/{1-6}/{+,-} The columns are as follows: 1: Location, 2: Favorites, 3: Creator, 4: Tags, 5: Devices, 6: Category
- /browser/filter/{1-6}/reset Resets the filter of the column
- /browser/preset/{+,-} Select the next/previous preset
- /browser/tab/{+,-} Select the next/previous tab (Devices/Presets/Multisamples/...)

10.3.11 Receive - Play

- /vkb_midi/{Channel:1-16}/note/{Note:0-127} {Velocity:0-127}
- /vkb_midi/{Channel:1-16}/note/+ 1 octave up
- /vkb_midi/{Channel:1-16}/note/- 1 octave down
- /vkb_midi/{Channel:1-16}/drum/{Note:0-127} {Velocity:0-127}
- /vkb_midi/{Channel:1-16}/drum/+ 1 drum octave up
- /vkb_midi/{Channel:1-16}/drum/- 1 drum octave down
- /vkb_midi/{Channel:1-16}/cc/{CC:0-127} {Value:0-127}
- /vkb_midi/{Channel:1-16}/aftertouch/{Note:0-127} {Pressure:0-127} Sends Poly Aftertouch
- /vkb_midi/{Channel:1-16}/aftertouch {Pressure:0-127} Sends Channel Aftertouch
- /vkb_midi/{Channel:1-16}/pitchbend {Pitch:0-127 (No-Bend:64)}

- /vkb_midi/velocity {0-127 (0 disables fixed velocity, 1-127 fixes the velocity to the value)}
- /vkb_midi/noterepeat/isActive {0,1} Turn on/off
- /vkb_midi/noterepeat/period {1/4, 1/4t, 1/8, 1/8t, 1/16, 1/16t, 1/32, 1/32t} The repeat period
- /vkb_midi/noterepeat/length {1/4, 1/4t, 1/8, 1/8t, 1/16, 1/16t, 1/32, 1/32t} The note length

10.3.12 Receive - Marker

- /marker/{1-8}/launch Start playback at the marker position
- /marker/bank/{+,-} Scroll the marker bank up-/down

10.3.13 Receive - Misc

- /refresh Flushes all values to the clients

11 Mackie HUI

Support script for the Mackie HUI protocol. While this extension supports the Mackie HUI protocol in general I could only test it with the following devices:

- icon QConPro X (in Pro Tools mode)
- Novation SLMkIII

In the following, the supported features are described. In brackets the names of the HUI buttons are noted which trigger the feature.

The settings dialog contains profiles for several devices, which sets the correct hardware settings.

11.1 Transport

- « (HUI REWIND) - Move the play cursor to the left.
- » (HUI FORWARD) - Move the play cursor to the right.
- **Repeat** (HUI LOOP) - Toggle repeat
- **Stop** (HUI STOP) - Stop playback. Press again to move play cursor to start of song.
- **Play** (HUI PLAY) - Start/Stop playback. Double click to move play cursor to start of song.
- **Shift (HUI SHIFT) + Play** - Toggle repeat
- **Option (HUI OPTION) + Play** - Toggle Punch In
- **Option + Shift + Play** - Toggle Punch Out
- **Record** (HUI RECORD) - Start/Stop recording
- **Shift + Record** - Toggle launcher overdub
- **Jog Wheel** - Move play cursor (press **Shift** for fine adjustment)
- **Scrub** - Toggles between Track and Device editing mode
- **Arrow left, right, up, down** - Like pressing the arrow keys on the computer keyboard
- **Zoom** - If active, the arrow buttons left/right zoom the arranger horizontally. The up/down arrows both toggle the height of the track.
- **Metronome** (HUI PRE) - Toggle metronome
- **Tap Tempo** - (HUI POST) - Executes Tap Tempo
- **Quick Punch** - (HUI QUICK PUNCH) - Toggle Punch In
- **In** - (HUI IN) - Toggle Punch In
- **Out** - (HUI OUT) - Toggle Punch Out
- **Audio Engine** (HUI ON LINE) - Toggle Audio Engine on/off for current project
- **Return to Zero** (HUI RETURN TO ZERO) - Return the play cursor to the start of the arranger

11.2 Buttons

11.2.1 Functions

- **Shift** (HUI SHIFT) - Use in combination with other buttons for additional functions.
- **Option** (HUI OPTION) - Use in combination with other buttons for additional functions.
- **F1-F8** (HUI F1-F8) - Functions for these buttons can be assigned in the settings dialog.
- **Undo** (HUI UNDO) - Undos the last action
- **Shift+Undo** - Redos the last undone action

11.2.2 Assignment

- **Pan** (HUI MODE PAN) - Select the Panorama edit mode. See the section **Edit Modes** below.
- **Send A-E** (HUI MODE SEND A-E) - Select the Send edit mode A-E.

11.2.3 Automation

- **Read/Off** (HUI READ) - Disables arranger automation recording.
- **Write** (HUI WRITE) - Enables arranger automation recording and sets it to Write mode.

- **Trim** (HUI TRIM) - Since Bitwig has not Trim mode, this button toggles the clip automation recording.
- **Touch** (HUI TOUCH) - Enables arranger automation recording and sets it to Touch mode.
- **Latch** (HUI LATCH) - Enables arranger automation recording and sets it to Latch mode.

11.2.4 Utilities

- **Note Editor** (HUI WINDOW EDIT) - Toggles the display of the note editor pane
- **Automation Editor** (HUI WINDOW TRANSPORT) - Toggles the display of the automation editor pane
- **Toggle Device** (HUI WINDOW STATUS) - Toggles the display of the device pane
- **Shift+Toggle Device** - Toggles the display of a plugin window
- **Mixer** (HUI WINDOW MIXER) - Toggles the display of the mixer pane
- **Save** (HUI SAVE) - Save button saves the current project

11.2.5 Fader Controls

- **|<** (HUI TRACK LEFT) - Select the previous track.
- **>|** (HUI TRACK RIGHT) - Select the next track.
- **« 8** (HUI BANK LEFT) - Move track bank focus 8 tracks up.
- **8 »** (HUI BANK RIGHT) - Move track bank focus 8 tracks down.

11.3 Edit Modes

11.3.1 Common functions in all modes

- **Record-arm buttons** (HUI ARM1-8) - Press to arm the specific track for recording.
- **Mute buttons** (HUI MUTE1-8) - Un-/mute the specific track
- **Solo buttons** (HUI SOLO1-8) - Un-/solo the specific track
- **Track selection buttons** (HUI SELECT1-8) - Select the specific track.
- **Shift+Solo** - Toggle auto monitor
- **Shift+Mute** - Toggle monitor
- **8 faders** (HUI FADER_TOUCH1-8) - Change volume of selected 8 tracks. Touching a fader automatically selects the track.
- **Press knob** (HUI VSELECT1-8) - Resets the current parameter to its default value.

11.3.2 Panorama edit mode

Press *Pan* to enter.

- **8 knobs** - Change the panorama of that channel.

11.3.3 Send 1 - 8 edit mode

Press *Send* to enter. Press multiple times to select the Send channels 1 to 8. Use in combination with the **Track select** buttons to select the respective Send channel 1-8.

- **8 knobs** - Change the volume of send of that channel.

11.4 Foot switches

- **Footswitch 1** (HUI FOOTSWITCH A) - Function be assigned in the settings dialog.
- **Footswitch 2** (HUI FOOTSWITCH B) - Function be assigned in the settings dialog.

11.5 Preferences dialog

- Set preferences for Device capabilities, etc.

12 Mackie MCU

Support script for the Mackie MCU protocol. While this extension supports the Mackie MCU protocol in general I could only test it with the following devices:

- Behringer X-Touch One
- Mackie MCU Pro
- icon QConPro X
- icon Platform M/M+ with extender
- Zoom R16

In the following the supported features are described. In brackets the names of the MCU buttons are noted which trigger the feature.

12.1 Configuration

The settings dialog contains profiles for several devices, which sets the correct hardware settings. If your device is not listed make sure you configure the hardware settings manually to match your device.

12.2 Transport

- **Play** (MCU PLAY) - Start/Stop playback. Double click to move play cursor to start of song.
- **Shift** (MCU SHIFT) + **Play** - Toggle repeat
- **Option** (MCU OPTION) + **Play** - Toggle Punch In
- **Option** + **Shift** + **Play** - Toggle Punch Out
- **Punch in** (MCU F6) - Toggle punch in
- **Punch out** (MCU F7) - Toggle punch in
- **Record** (MCU RECORD) - Start/Stop recording
- **Shift** + **Record** - Toggle launcher overdub
- **Option** + **Record** - Creates a new clip on the selected track and slot, starts play and enables overdub.
- **«** (MCU REWIND) - Move the play cursor to the left.
- **»** (MCU FORWARD) - Move the play cursor to the right.
- **Repeat** (MCU REPEAT) - Toggle repeat
- **Stop** (MCU STOP) - Stop playback. Press again to move play cursor to start of song.
- **Jog Wheel** - Move play cursor (press **Shift** for fine adjustment)
- **Option** + **Jog Wheel** - Change tempo (press **Shift** for fine adjustment)
- **Scrub** - Toggles between Track and Device editing mode
- **Arrow left, right, up, down** - Like pressing the arrow keys on the computer keyboard
- **Zoom** - If active, the arrow buttons left/right zoom the arranger horizontally. The up/down arrows both toggle the height of the track.
- **Nudge** - Executes Tap Tempo

12.3 Buttons

12.3.1 Display Mode

- **Display Mode** - Toggles the display of the track names in the 1st display.
- **Tempo/Ticks** - Toggle content of segment display. The last 3 digits toggle between ticks or the song tempo.
- **Global View** (MCU EDIT) - Toggle VU meters on/off
- **Aux** (MCU AUX) - Switches to Arrange layout.
- **Busses** (MCU BUSSES) - Switches to Mix layout.
- **Outputs** (MCU OUTPUTS) - Switches to Edit layout.
- **Shift+Track selection buttons** - Select the length for new clips: 16 bars, 8 bars, 4 bars, 2 bars, 1 bar, 2 beats, 1 beat, 32 bars

12.3.2 Functions

- **Shift** (MCU SHIFT) - Use in combination with other buttons for additional functions.
- **Option** (MCU OPTION) - Use in combination with other buttons for additional functions.
- **F1-F5** (MCU F1-F5) - Functions for these buttons can be assigned in the settings dialog.
- **Device On/Off** (MCU F8) - Toggle device on/off
- **Undo** (MCU UNDO) - Undos the last action
- **Shift+Undo** - Redos the last undone action

12.3.3 Assignment

- **Track** (MCU MODE IO, TRACK) - Select the Track edit mode. Press again to select the Volume edit mode. See the section **Edit Modes** below.
- **Option + Track** - Pin cursor track
- **Pan** (MCU MODE PAN/SURROUND) - Select the Panorama edit mode. See the section **Edit Modes** below.
- **Send** (MCU MODE SENDS) - Select the Send edit mode. Press multiple times to select the Send channels 1 to 8. See the section **Edit Modes** below. Use in combination with the **Track select** buttons to select the respective Send channel 1-8. Use **Shift+Send** to move backwards.
- **Device** (MCU DEVICE, PLUG-IN) - Select the Device edit mode. See the section **Edit Modes** below.
- **Option + Device** - Pin cursor device
- **Page Up** (MCU MODE EQ) - Move track bank focus 1 track up. If Device mode is active, the previous device parameter bank is selected.
- **Page Down** (MCU MODE DYN, INSTRUMENT) - Move track bank focus 1 track down. If Device mode is active, the next device parameter bank is selected.

12.3.4 Automation

- **Read/Off** (MCU READ) - Disables arranger automation recording.
- **Option + Read/Off** - Resets any automation overrides.
- **Write** (MCU WRITE, MCU GROUP) - Enables arranger automation recording and sets it to Write mode.
- **Trim** (MCU TRIM) - Since Bitwig has not Trim mode, this button toggles the clip automation recording.
- **Touch** (MCU TOUCH) - Enables arranger automation recording and sets it to Touch mode.
- **Latch** (MCU LATCH) - Enables arranger automation recording and sets it to Latch mode.

12.3.5 Utilities

- **Note Editor** (MCU MIDI TRACKS) - Toggles the display of the note editor pane
- **Automation Editor** (MCU INPUTS) - Toggles the display of the automation editor pane
- **Toggle Device** (MCU AUDIO TRACKS) - Toggles the display of a plugin window
- **Shift+Toggle Device** - Toggles the different layouts
- **Mixer** (MCU AUDIO INSTRUMENT) - Toggles the display of the mixer pane
- **Browser** (MCU USER) - Starts the browser to browse for presets
- **Shift+Browser** - Starts the browser to insert a new device before the current one
- **Option+Browser** - Starts the browser to insert a new device after the current one
- **Metronome** (MCU CLICK) - Toggle metronome
- **Shift + Metronome** - Toggle Metronome Ticks
- **Shift + Masterfader** - Changes Metronome Volume
- **Groove** (MCU SOLO) - Dis-/Enable the Groove
- **OVR** (MCU REPLACE) - Toggle arranger overdub
- **Shift+OVR** - Toggle launcher overdub
- **Save** (MCU SAVE) - Save button saves the current project
- **Marker** (MCU MARKER) - Toggles the display of markers in the arranger
- **Drop** (MCU DROP) - Duplicate (depending on the focus)

12.3.6 Fader Controls

- **Lock** (Not on MCU) - Locks the faders
- **Flip** (MCU FLIP) - Toggles between Instrument/Audio/Hybrid tracks and the Effect tracks.
- **Cancel** (MCU CANCEL) - Cancels browsing when the Browser is active, otherwise like pressing the Escape key on the computer keyboard.
- **Enter** (MCU ENTER) - Confirms browsing when the Browser is active, otherwise like pressing the Enter key on the computer keyboard.
- **|<** (MCU BANK LEFT) - Move track bank focus 8 track up. If Device mode is active, the previous device parameter bank is selected.
- **>|** (MCU BANK RIGHT) - Move track bank focus 8 track down. If Device mode is active, the next device parameter bank is selected.
- **« 8** (MCU TRACK LEFT) - Move track bank focus 1 tracks up. If Device mode is active, the previous device is selected.
- **8 »** (MCU TRACK RIGHT) - Move track bank focus 1 tracks down. If Device mode is active, the next device is selected.

12.4 Edit Modes

12.4.1 Common functions in all modes

- **Record-arm buttons** (MCU ARM1-8) - Press to arm the specific track for recording.
- **Mute buttons** (MCU MUTE1-8) - Un-/mute the specific track
- **Solo buttons** (MCU SOLO1-8) - Un-/solo the specific track
- **Option + one of the Mute buttons**: Deactivate all mutes
- **Option + one of the Solo buttons**: Deactivate all solos
- **Track selection buttons** (MCU SELECT1-8) - Select the specific track.
- **Send (MCU MODE SENDS) + Track selection buttons** - Select the send channel 1-8.
- **Shift + Track selection buttons** - Set the length of a new clip.
- **Option + Track selection buttons** - Stop the playing clip on the specific track.
- **Shift+Solo** - Toggle auto monitor
- **Shift+Mute** - Toggle monitor
- **8 faders** (MCU FADER_TOUCH1-8) - Change volume of selected 8 tracks. Touching a fader automatically selects the track.
- **Master fader** (MCU FADER MASTER) - Change volume of master fader. Touching the fader selects the master track.
- **Press knob** (MCU VSELECT1-8) - Resets the current parameter to its default value.

12.4.2 Track edit mode

Press *Track* to enter.

- **8 knobs** - Change the volume, panorama, crossfader and Send 1-5 of the selected track. Hold **Shift** for fine adjustments.
- You can configure in the preferences that the crossfader option is hidden and you get 6 sends instead.

12.4.3 Volume edit mode

Press *Track* twice to enter.

- **8 knobs** - Change the volume of that channel. Hold **Shift** for fine adjustments.

12.4.4 Panorama edit mode

Press *Pan* to enter.

- **8 knobs** - Change the panorama of that channel. Hold **Shift** for fine adjustments.

12.4.5 Send 1 - 8 edit mode

Press *Send* to enter. Press multiple times to select the Send channels 1 to 8. Use in combination with the **Track select** buttons to select the respective Send channel 1-8.

- **8 knobs** - Change the volume of send of that channel. Hold **Shift** for fine adjustments.

12.4.6 Master edit mode

Touch the master fader to enter

- **** 1st knob**** - Change the master volume. Press to reset.
- **** 2nd knob**** - Change the master panorama. Press to reset.
- **** knob 3-5**** - Press to toggle the audio engine on/off for this project
- **** 7th knob**** - Press to switch to the previous project.
- **** 8th knob**** - Press to switch to the next project.

12.4.7 Devices edit mode

- **Device Knobs 1-8** - Change the currently selected 8 device parameters
- **|<** (MCU BANK LEFT) - If Device mode is active, the previous device parameter bank is selected.
- **>|** (MCU BANK RIGHT) - If Device mode is active, the next device parameter bank is selected.
- **« 8** (MCU TRACK LEFT) - If Device mode is active, the previous device is selected.
- **8 »** (MCU TRACK RIGHT) - If Device mode is active, the next device is selected.
- **Page Up** (MCU MODE EQ) - If Device mode is active, the previous device parameter bank is selected.
- **Page Down** (MCU MODE DYN, INSTRUMENT) - If Device mode is active, the next device parameter bank is selected.

12.4.8 Browser

- Press the *Browser* button to start
- Navigate columns with the *Track Control knobs*.
- Click the knobs to enter a filter or the results. Click again to confirm.
- To confirm a patch or device selection and close the Browser press the *Enter* button.
- To discard the patch selection press the *Cancel* button.

12.4.9 Marker

- Press the *Marker* button to start. If you do not have a marker button you can assign this command to a function button.
- Click the knobs to start the playback from a marker position.

12.5 Foot switches

- **Footswitch 1** (MCU USER A) - Function be assigned in the settings dialog.
- **Footswitch 2** (MCU USER B) - Function be assigned in the settings dialog.

12.6 Preferences dialog

- Set preferences for Device capabilities, etc.

The following MCU buttons are currently not used: GLOBAL VIEW, BUSSES, OUTPUT, CONTROL, ALT, F8, GROUP, NUDGE, DROP

13 Native Instruments Komplete Kontrol 1 S25, S49, S61, S88

Support script for Native Instruments Komplete Kontrol controller Version 1.

13.1 Global

- **SHIFT** - Use in combination with other buttons for additional functionality.
- **SCALE** - Activates the currently configured scale. The scale is only indicated by the LEDs above the keys, the keys always behave the same.
- **SHIFT+SCALE** - Enter scale configuration mode.
- **ARP** - Toggle Metronome.
- **SHIFT+ARP** - Toggle metronome ticks.
- **SHIFT+MAIN ENCODER** - Changes the volume of the master track.

13.2 Transport buttons

- **LOOP** - Toggle repeat
- **RWD (Rewind)** - Rewinds play cursor position until released.
- **SHIFT+RWD (Rewind)** - Slowly rewinds play cursor position until released.
- **FFW (Forward)** - Forwards play cursor position until released.
- **SHIFT+FFW (Forward)** - Slowly forwards play cursor position until released.
- **PLAY** - Start/Stop playback. Double click to move play cursor to start of song. You can configure the behaviour on stop in the preferences.
- **SHIFT+PLAY** - Create new clip, start playback and activate overdub
- **REC (Record)** - Start/Stop recording
- **SHIFT+REC** - Toggle launcher overdub
- **STOP** - Stop playback. Press again to move the playback cursor to the start of the arranger.

Use the page left and right buttons to switch modes.

13.3 Track mode

- Controls the volume, panorama and effect sends of the selected track.
- The most left display shows the name and the number of the selected track.
- Use the knobs to change a value.
- Change the selected track by 1 with the cursor left and right buttons or use the main encoder.
- Change the selected track by 8 with the cursor up and down buttons.
- **BACK** - Toggles mute on the selected track.
- **SHIFT+BACK** - Toggles monitor on the selected track.
- **ENTER** - Toggles solo on the selected track.
- **SHIFT+ENTER** - Toggles rec arm on the selected track.
- **MAIN ENCODER** - Toggles between instrument/audio bank and effect bank.

13.4 Volume mode

- Controls the volume of the displayed tracks.
- The most left display displays the number of the first and last displayed track.
- Use the knobs to change a volume.
- All other knobs and buttons behave like in the Track mode.

13.5 Device/Parameter Mode

- Controls the parameters of the currently selected device.
- The most left display displays the name of the selected device and the name of the selected parameter bank.
- Use the knobs to change a value.

- Change the parameter bank with the cursor left and right buttons or use the main encoder.
- Change to the next/previous device with the cursor up and down buttons.
- **BACK** - Toggles the on/off state of the device
- **ENTER** - Toggles the visibility of the parameters
- **MAIN ENCODER** - Toggles the display of the device window (if any) of the device

13.6 Browser Mode

Press the **BROWSE** button to open the browser for the selected device. If no device is selected the browser is opened to insert a new device on the selected track. Press **SHIFT+BROWSE** to insert a new device before the selected one.

- Use the main encoder to change the selection. Click the main encoder to display 16 items to select from. Click again to close.
- The first 7 columns display the filters. Touch a knob above a filter to select it. Use the main encoder to change the filter selection. Click the main encoder or touch any of the knobs to close the filter selection.
- **BROWSER** / **ENTER** - Commits/accepts the new selection and closes the browser
- **SHIFT+BROWSER** / **BACK** - Cancels the new selection and closes the browser
- Cursor left/right switches to the next / previous browser tab

13.7 Scale Mode

Press **SHIFT+SCALE** button to enter the configuration mode for the current scale. Press again to close this mode. The scale is only indicated by the LEDs above the keys, the keys always behave the same.

- Use the knobs above the parameters to change their value.
- Use the cursor left and right buttons or the main encoder to change the scale.
- Use the cursor up and down to change the base note.
- **BACK** - Closes the scale mode
- **ENTER** - Closes the scale mode

13.8 Preferences Dialog

You can set several preferences in the Preferences dialog of the script, which are stored when you exit the DAW.

14 Native Instruments Komplete Kontrol 2 S49, S61, S88, Komplete Kontrol A49, A61, M32

Support for Native Instruments Komplete Kontrol controllers, which use the NI Host Integration protocol. Since Native Instruments Host Integration service is only available for Windows and MacOS, **Linux is not supported**.

14.1 Installation

Native Instruments Host Integration service must be installed and running. It is automatically the case if you installed Komplete Kontrol on your machine.

1. Select the MIDI input and output ending with “DAW” as the first channel.
2. Select the MIDI input and output without an ending as the second.

14.2 Features

The basic feature set is identical to Ableton Live as described in the respective Kontrol manuals. Additionally, there are some settings to change the behaviour.

14.2.1 Extended feature set for S-series

The S-series has additional device/parameters and send modes. **Toggle these modes with the CLEAR button.**

14.2.2 Send mode

- The screens display 8 sends of the currently selected track
- The volume and pan display represents the value of each send
- The knobs below changes the send values (both in volume and pan mode)
- The bank left/right buttons switch between the sends 1-8 and 9-16 of the channel
- The encoder left/right/up/down switch between the sends 1-8 and 9-16 of the channel as well
- Select/Mute/Solo buttons always control the tracks

14.2.3 Device/parameters mode

- The screens display 8 parameters
- The volume and pan display represents the value of each parameter
- The knobs below changes the parameter values (both in volume and pan mode)
- The bank left/right buttons switch between the devices of the channel
- The encoder up/down switches between the devices of the channel as well
- The encoder left/right switches between the parameter pages of the selected device
- Pressing the encoder toggles the window of the selected device (if any)
- Select/Mute/Solo buttons always control the tracks

15 Native Instruments Maschine Mikro Mk3

Support for Native Instruments Maschine Mikro Mk3.

15.1 Installation

Load the respective template from the folder *resources/Maschine Mini Mk3* into the device by using Native Instruments Controller Editor.

15.2 Important notes

This extension uses the MIDI mode of the device. Press **Shift + Project** (on the left / top) buttons to enter MIDI mode.

Since the extension requires the Native Instruments Host Integration service it **only works on Windows and Mac (no Linux)**.

The **Shift** and **Cursor** buttons do not send MIDI values, therefore they cannot be used.

15.3 Transport

- **Play** - Start/Stop playback. Double click to move play cursor to the start of song. You can configure the behavior on stop in the preferences.
- **Rec** - Start/Stop recording.
- **Stop** - Stop playback. If pressed when stopped the play cursor is moved to the start of the song. Use in combination with a pad in Clip Mode to stop the clip.
- **Restart/Loop** - Toggle transport loop
- **Erase** - Undo. Use in combination with a pad to duplicate a scene, clip or track depending on the selected mode.
- **Erase + touch encoder knob** - Reset the currently edited value to its default.
- **Tap** - Toggle metronome
- **Follow** - Quantize the selected clip

15.4 Browser

- **Projects** - Adds an instrument track. If the browser is active, it closes the browser and discards the new selection.
- **Favorites** - Open the browser to add a device on the selected channel. If the browser is active, toggles the selection of Favorites in the browser.
- **Browser** - Opens the browser on the current device. If there is no device the browser is opened to insert a new device. If the browser is active, the browser is closed and the selection is accepted. Use in combination with a pad in Clip Mode to open the browser to load a clip.

In the browser ... * use the Encoder to scroll through the items. * Press the Encoder to confirm your selection and close the browser. * Press the browse button to discard your selection and close the browser.

15.5 Encoder modes

- **Volume** - Enables volume/pan/Sends mode. Press again to toggle between volume, pan and send modes. The encoder changes the volume/pan/sends of the selected track. Keep the Erase button pressed and touch the encoder to set the parameter to its default value. Press the encoder to toggle between fast and slow value changes.
- **Swing** - Enables position mode. The encoder changes the position of the play cursor in the arranger. Press the encoder to toggle between fast and slow movement.
- **Tempo** - Enables tempo mode. Press again to toggle between fine tune and normal change. The encoder changes the tempo of the song. Press the encoder multiple times to tap the tempo.

- **Plug-In** - Enables device mode. The encoder changes the value of a device parameter. Keep the Erase button pressed and touch the encoder to set the parameter to its default value. Press the encoder to toggle between fast and slow value changes.
- **Sampling** - Toggle the window (if any) of the selected device (if any).

15.6 Touchstrip

The Touchstrip behaves based on the following modes.

- **Pitch** - Set the Touchstrip to send pitch bend. Press multiple times to toggle between Down, Up and Down/Up.
- **Mod** - Set the Touchstrip to send Modulation (CC 1). Press again to send Expression (CC 11).
- **Perform/FX Select** - Set the Touchstrip to change the volume of the Master track.
- **Notes** - Set the Touchstrip to change the note repeat period. Press again to change the note repeat length.

15.7 Automation

- **Group** - Creates a new clip on the selected track and slot, starts play and enables overdub.
- **Auto** - Toggle write clip launcher automation.
- **Lock** - Toggle write arranger automation.
- **Note Repeat** - Toggle Note repeat. Long press the button to enter note repeat configuration mode. In that mode the first two pad columns allow to change the period of the note repeat and the last two columns the length of the notes. Press Note Repeat again to leave the configuration mode.

15.8 Pad Modes

- **Fixed Vel** - If active, velocity of a played pad is always maximum.
- **Scene** - Press a pad to start one of the 16 scenes of the current bank page.
- **Pattern** - Press a pad to start one of 16 clips of the current bank page on the selected track.
- **Events** - This is the Play or Drum mode.
- **Variation** - Press a pad to select one of 8 or 9 parameters of the current bank page on the selected track.
- **Duplicate** - Use in combination with a pad to duplicate a scene, clip or track depending on the selected mode.
- **Select** - Press a pad to select one of 16 channels of the current bank page. Use Chords and Steps buttons to flip through the bank pages.
- **Solo** - Press a pad to toggle Solo of 16 channels of the current bank page. Use Chords and Steps buttons to flip through the bank pages.
- **Mute** - Press a pad to toggle Mute of 16 channels of the current bank page. Use Chords and Steps buttons to flip through the bank pages.
- **Pad Mode** - Selects the previous item (scene, clip, track, parameter page). Switches to drum layout in Play (Event) mode.
- **Keyboard** - Selects the next item (scene, clip, track, parameter page). Switches to play layout in Play (Event) mode.
- **Chords** - Selects the previous item page (scene, clip, track, device). Switches notes 1 octave down in Play (Event) mode.
- **Step** - Selects the next item page (scene, clip, track, device). Switches notes 1 octave up in Play (Event) mode.

16 Novation Launchkey Mini Mk3

Support for the Novation Launchkey Mini Mk3 controller.

16.1 Installation

- If you added the controller manually, choose the 2nd MIDI port (“DAW port”) of the device as in-/output. Select the first port as the 2nd input (“MIDI port”).

16.2 Global Features

- **Play** - Start/Stop playback. Double click to move play cursor to start of song.
- **Shift+Play** - Toggle repeat
- **Record** - Start/Stop recording
- **Shift+Record** - Toggle launcher overdub

16.3 Modes

By using the Shift button in combination with the upper row pads, you can switch between two kinds of modes: modes for the knobs (colored green) and modes for the pads (colored orange).

16.3.1 Knob modes

Use the 5 green buttons to switch between the modes for the knobs. The text above the pads indicate their function.

16.3.1.1 Device Mode

- Knob 1-8: Changes the value of the 8 parameters on the current device parameter page.
- Track Left/Right buttons (Shift + Arp/Fixed Chord): Select the previous/next device
- Program Change (Shift + +/-): Select the previous/next parameter page

16.3.1.2 Volume Mode

- Knob 1-8: Changes the volume of the 8 tracks on the current track bank page.
- Track Left/Right buttons (Shift + Arp/Fixed Chord): Select the previous/next track
- Program Change (Shift + +/-): Select the previous/next track bank page

16.3.1.3 Pan Mode

- Knob 1-8: Changes the panorama of the 8 tracks on the current track bank page.
- Track Left/Right buttons (Shift + Arp/Fixed Chord): Select the previous/next track
- Program Change (Shift + +/-): Select the previous/next track bank page

16.3.1.4 Sends Mode

- Press Shift and use pad 7 and 8 on the lower pad row to switch between Send 1 and Send 2.
- Knob 1-8: Changes the Send 1 or 2 volume of the 8 tracks on the current track bank page.
- Track Left/Right buttons (Shift + Arp/Fixed Chord): Select the previous/next track
- Program Change (Shift + +/-): Select the previous/next track bank page

16.3.1.5 Custom Mode

- Knob 1-8: Changes the value of a user mapped parameter. Right click any parameter in Bitwig and select to learn. After that move the knob to which you want to map the parameter. The mapped parameters are stored per project.
- Track Left/Right buttons (Shift + Arp/Fixed Chord): -

- Program Change (Shift + +/-): -

16.3.2 Pad Modes

Use the 3 amber colored buttons to switch between the modes for the knobs. The text above the pads indicate their function.

16.3.2.1 Session Mode The Session mode is quite complex since it hides several sub-modes for controlling solo, mute, record arm, etc. Long press the SSM (Scene 2) button to switch between the sub-modes or turn them off. The SSM button is also lit in the color of the selected sub-mode.

The pads start playback or recording of the respective clip. The Scene and SSM buttons start the first and second scene in the selected scene window. Use Shift+Scene/SSM buttons to move the scene window.

If one of the sub-modes is enabled, the lower pad row changes and display the states of the sub-mode. Press one of these pads to toggle the state. The following sub-modes are available:

- 1) **Record Arm:** Toggle the recording armed state of the 8 tracks on the selected track bank page.
- 2) **Track select:** Select one of the 8 tracks on the selected track bank page.
- 3) **Mute:** Toggle the mute state of the 8 tracks on the selected track bank page.
- 4) **Solo:** Toggle the solo of the 8 tracks on the selected track bank page.
- 5) **Stop clip:** Stop the playing clip on one of the 8 tracks on the selected track bank page.

16.3.2.2 Drum Mode This mode provides a simple drum sequencer and access to the drum instrument but is also usable with any other device. Since the number of buttons on the device is limited you can only access the main 16 notes.

This mode can be toggled with the Scene button between two views: one to play the 16 sounds and one to toggle the note steps of one of the 16 sounds. If you have a Bitwig drum device selected, the play view displays the colors of the sounds as well if there is an instrument loaded in a slot. The last selected pad is the one you can edit when switching to the note steps view.

Long press the SSM (Scene 2) button to enter the drum sequencer settings. While keeping the SSM button pressed, select an upper row pad to select a grid resolution, which is displayed in Bitwig as well. Use the first 2 lower row pads to select one of the previous/next edit page. The 4th pad toggles the metronome. Use the last 2 lower row pads to scroll the drum pads up/down.

16.3.2.3 Custom Mode This is the MIDI note configuration you can setup in the Novation Components application. Note: Do only change the pad display, not the knob settings!

16.4 Preferences Dialog

You can set several preferences which are stored when you exit the DAW.

17 Novation Launchpad Pro, MkII, Mini Mk3, X

Support script for several of Novation's Launchpad controllers.

17.1 Installation

- Pro, Mini Mk3, X: If you added the controller manually, choose the 2nd port (e.g. *MIDIIN2 (Launchpad Pro)* and *MIDIOUT2 (Launchpad Pro)* on Windows).
- Make sure the Launchpad sends on Midi Channel 1!
- To have pads blinking in sync with your song tempo activate to send MIDI clock to the device.

17.2 Differences between the Launchpad models

The Pro has an additional left column and bottom row of buttons. Especially, it has a **Shift** button to access additional functionality (see the *Shift Mode* below). To work around this another button has to function as the Shift button. It is the last button of the top button row (MkII: **Mixer**, Mini Mk3: **User**, X: **Capture Midi**).

The three buttons on the top row, right to the cursor keys are also named differently on the models:

- Pro: Session, Note, Device
- MkII: Session, User 1, User 2
- X: Session, Note, Custom
- Mini Mk3: Session, Drums, Keys

These differences will not be mentioned again in the following text and **only the names of the Pro model will be used!**

17.3 Transport and Editing (Left button column)

- **Shift** - Use in combination with other buttons for additional functionality.
- **Click** - Toggle the metronome
- **Shift+Click** - Tap Tempo
- **Undo** - Undo. Press Shift for Redo.
- **Delete** - Hold the button for additional functionality in combination with other buttons knobs, see the view explanations below.
- **Quantise** - Quantises the selected clip.
- **Duplicate** - Always duplicates the first selected clip on the current track if pressed with no other button.
 - Launchpad Pro: Keep the Duplicate button pressed and select a clip in session mode to duplicate it
 - Launchpad Pro: Keep the Duplicate button pressed and select a pad from the 1st row when a track mode is on to duplicate the track.
 - Launchpad Pro: Keep the Duplicate button pressed and select a scene to duplicate it.
- **Shift+Duplicate** - Toggle repeat
- **Double** - Start/Stop playback. Double click to move play cursor to start of song.
- **Shift+Double** - Creates a new clip on the selected track and slot, starts play and enables overdub.
- **Record** - Start/Stop recording
- **Shift+Record** - Toggle launcher overdub

17.4 Cursors and Mode selection (Upper button row)

- **Arrows** - Navigate in the different modes (see below), holding an arrow button down will scroll through the specific View (e.g. track, scene).
- **Session** - Selects the Session mode to start, stop and record clips. Session can be flipped if Session button is pressed twice. Long press Session to select *birds-eye-view* to quickly navigate the clip grid. Press Session again to leave this mode.

- **Note** - Pressing the Note button brings up a menu where you can select the note/sequencer mode. First row (from top) selects play modes, 3rd row drum modes and 5th row sequencer modes.
- **Device** - Selects the Device mode to change the Parameters of the currently selected device. If pressed again it opens the browser for preset selection mode. If no device is selected the browser is opened to insert a device.
- **Shift+Device** - Opens the device browser to add a device after the currently selected one
- **User** (only Pro) - Brings up the user mode.

Note: The preferred play/sequencer mode is remembered for each track.

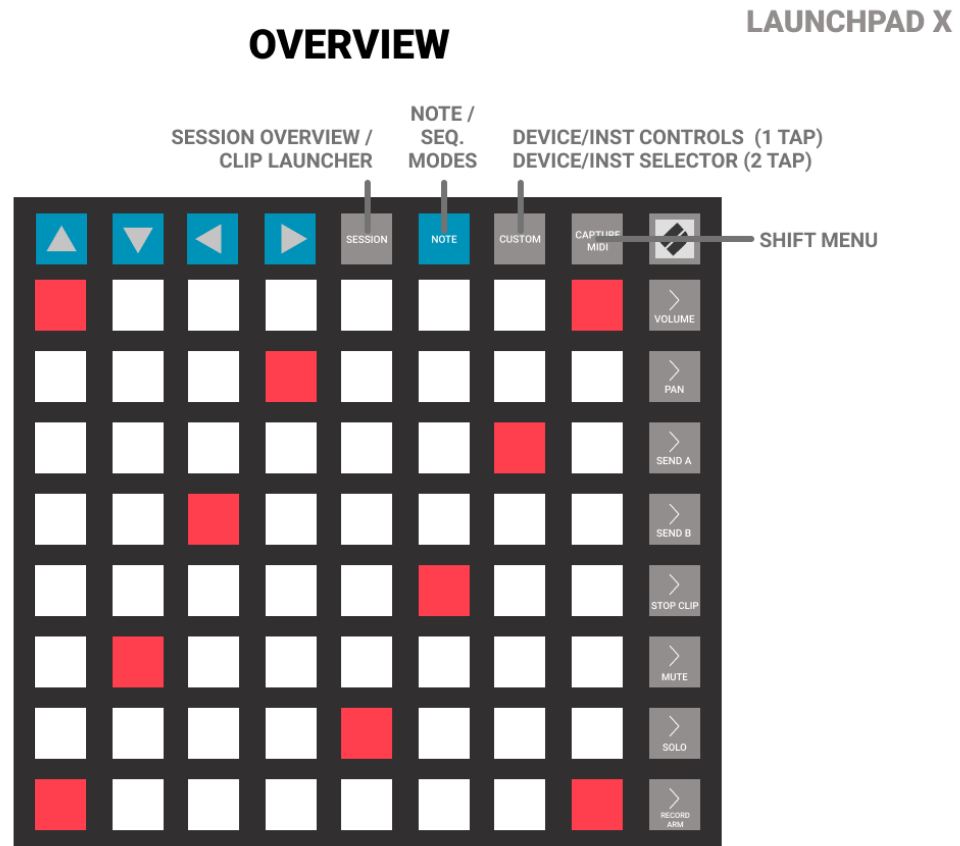


Figure 1: Overview

17.5 Shift Mode

If you press the Shift button (and keep it pressed) the grid changes to the Shift mode. The first column (from the left) of the grid now represents the missing left column of the Pro model. The second column represents the functions of these buttons in Shift state.

Pressing the Delete and Duplicate pads in shift mode activates the related mode. Leaving the shift mode and entering session mode allows then to delete/duplicate clips, scenes and tracks. After deleting/duplicating an item the delete/duplicate mode is turned off.

The Scene buttons represent the missing bottom row of the Pro (Volume, Pan, etc. but differently ordered).

The colors of the buttons are identical. This area is empty on the Pro model.

Further functions (all models): * The pads of the first row change the length of newly created clips. * The three green buttons in the right upper corner insert an instrument, audio or effect track. * The red button in the lower right corner stops the playback of all clips. * The buttons in the center control note repeat for play modes. The blue button on top de-/activates note repeat. The pads of the first two columns below change the note repeat period and the other two columns the note length.

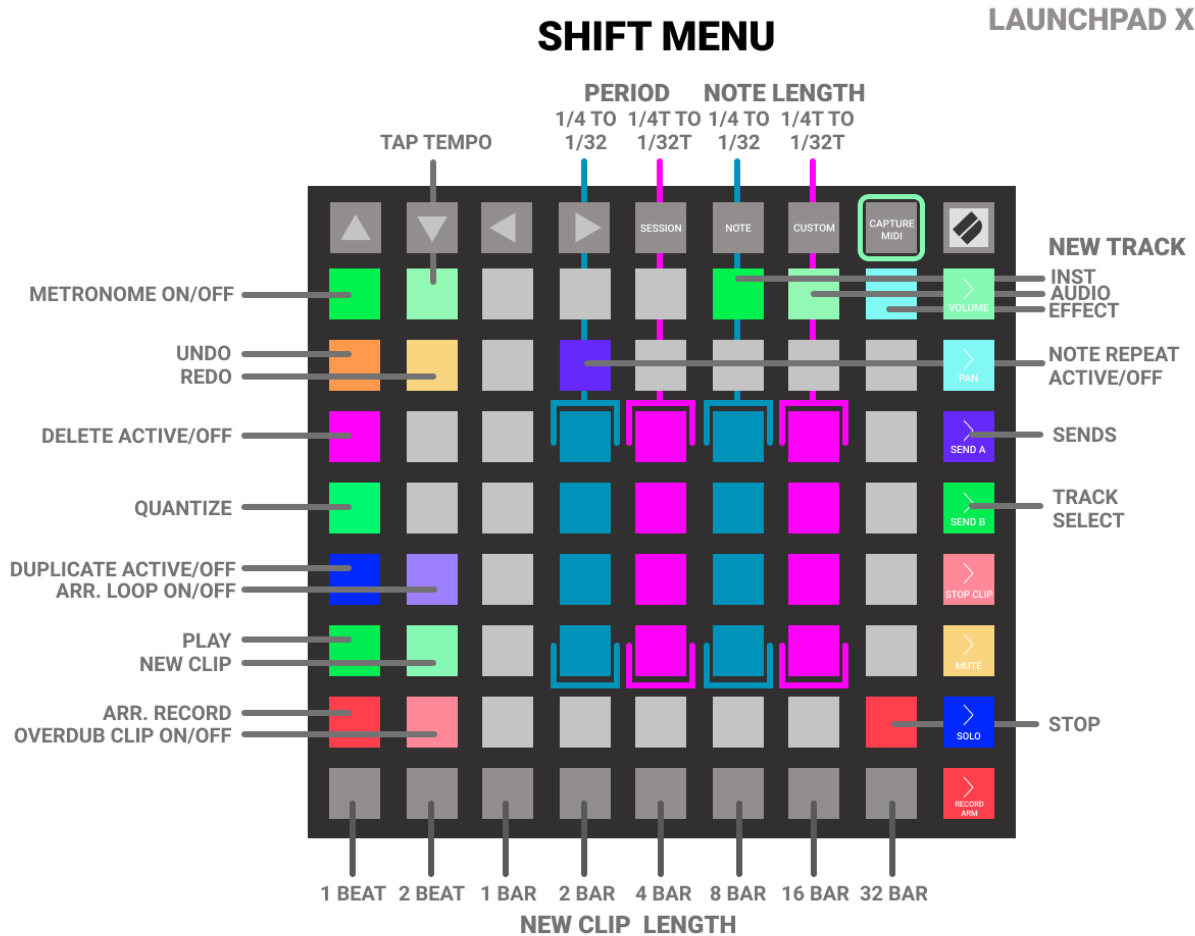


Figure 2: Shift menu diagram

17.6 Track Control (Lower button row)

These buttons only work in the Session mode. If the Session mode is not yet selected it gets activated.

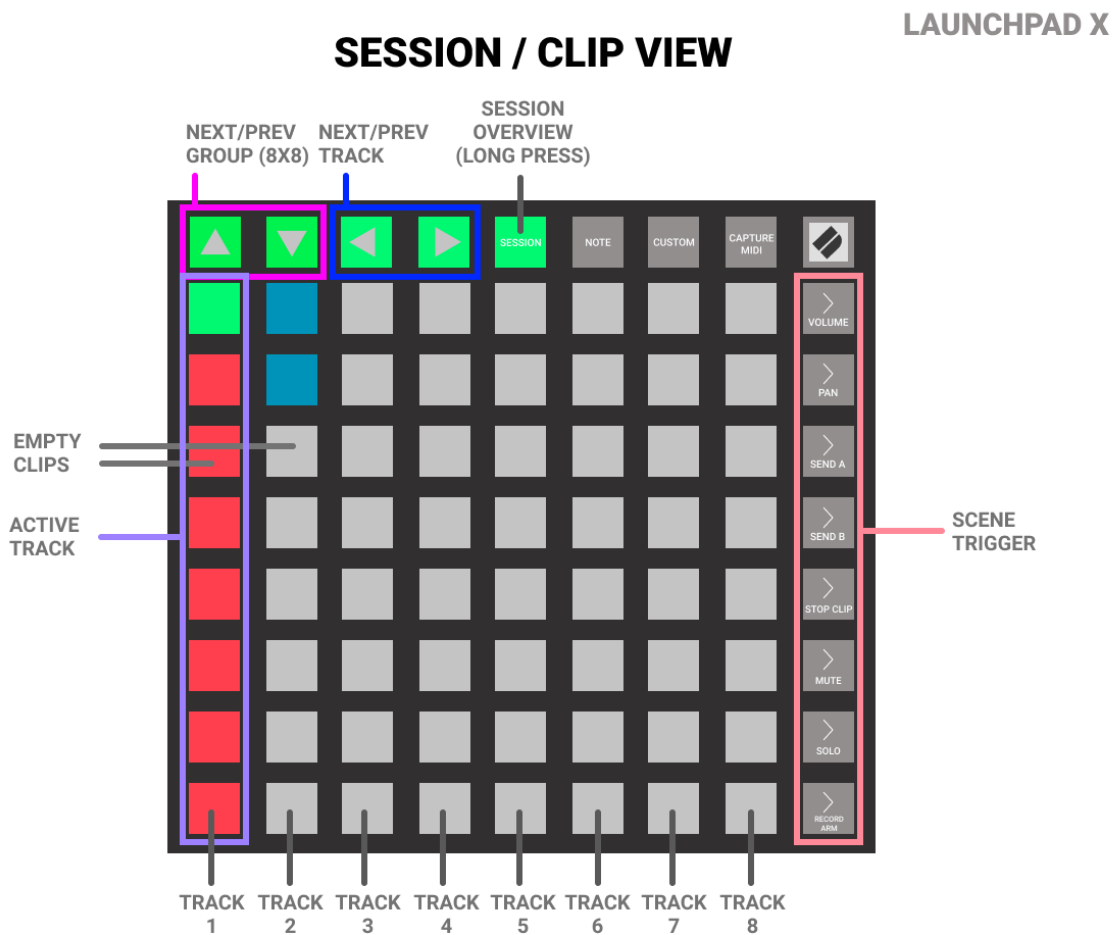
- **Record Arm** - The 8 buttons of the bottom row of the grid allow to toggle record arm of the currently focused 8 tracks of the track bank.
- **Track Select** - The 8 buttons of the bottom row of the grid allow to select one of the currently focused 8 tracks of the track bank. The currently selected track is indicated on the first row (round) buttons by a brighter white. Furthermore, the front LED is also lit in the color of the current track.
- **Mute** - The 8 buttons of the bottom row of the grid allow to toggle Mute of the currently focused 8 tracks of the track bank.
- **Solo** - The 8 buttons of the bottom row of the grid allow to toggle Solo of the currently focused 8 tracks of the track bank.

- **Volume** - Each column of the grid controls the Volume of the currently focused 8 tracks of the track bank. Hit buttons harder for faster change. The color of a fader is the same as the color of the track. Use the scene buttons for master volume.
- **Pan** - Each column of the grid controls the Panorama of the currently focused 8 tracks of the track bank. Hit buttons harder for faster change. The color of a fader is the same as the color of the track.
- **Sends** - Each column of the grid controls the Send of the currently focused 8 tracks of the track bank. Hit buttons harder for faster change. The color of a fader is the same as the color of the track. Use the Scene buttons to select the Sends 1 to 8.
- **Stop Clip** - The 8 buttons of the bottom row of the grid allow to stop the playing clip of the track of the currently focused 8 tracks of the track bank.
- **Shift+Stop Clip** - Stops all currently playing clips. (Mixer + 8th button of 2nd row on MkII)

17.7 Session Mode

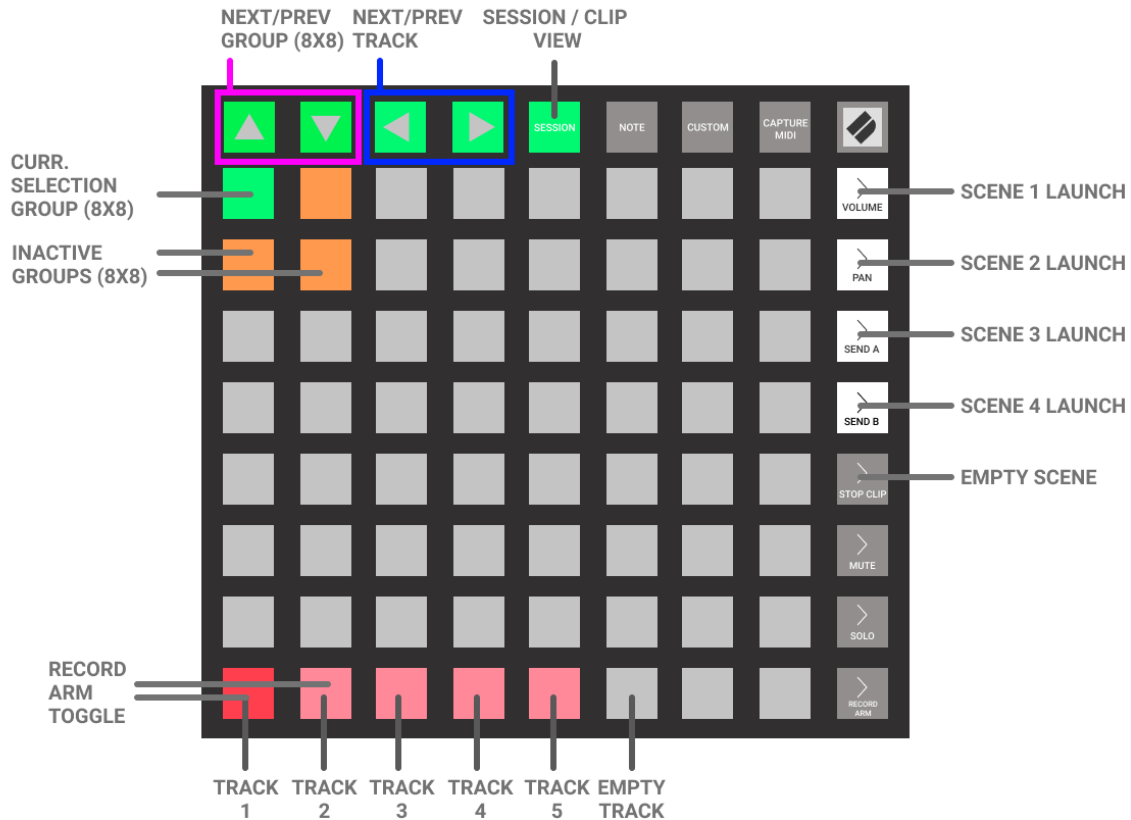
Press “Session” to enter **Session** mode. Press again to toggle the clip orientation (vertical or horizontal). *Long press* to enter birds-eye-view.

- The buttons on the grid start/record the clips.
- The 8 scene buttons on the right start the scenes.
- The arrow keys scroll the grid. Hold **Shift** to scroll in blocks of 8.
- Hold **Delete** and press a clip button to delete the clip.
- Hold **Delete** and press a Scene button to delete the scene.



SESSION BIRDS EYE VIEW

LAUNCHPAD X



17.8 Selecting Note or Sequencer Modes

Press “*Note*” to choose a **Note** or **Sequencer** mode.

- The first three (red) pads represent **Play** modes - Scale, Piano, and Drum64.
- The second three (blue) pads represent **Drum Sequencer** modes - Drum, Drum4, and Drum 8
- The final three (orange) pads represent **Note Sequencer** modes - Sequencer, Poly, and Raindrop

17.9 Play modes

17.9.1 Note Mode (Playing the pads)

Press “*Note*” and select the first red pad to change to **Scale** mode.

- The key layout is the same one used with Ableton Push
- Left/Right buttons change the scale (Major, Minor, etc.)
- Up/Down buttons transpose the grid up/down.
- The upper 2 scene buttons change the key layout.
- The white scene button toggles between Chromatic and Scale Only mode.
- The lower 2 scene buttons change the root note of the scale.
- The played keys are lighting red if global or clip recording (does not work if recording clip is outside of the monitored 8x8 matrix)

NOTE MODE SELECTION

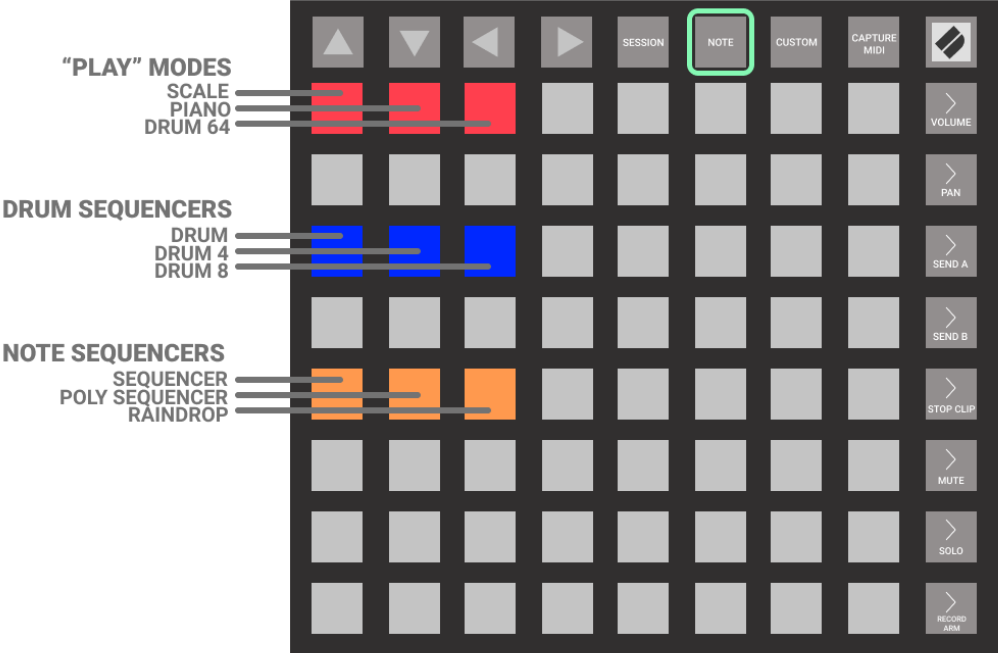


Figure 3: Session mode diagram

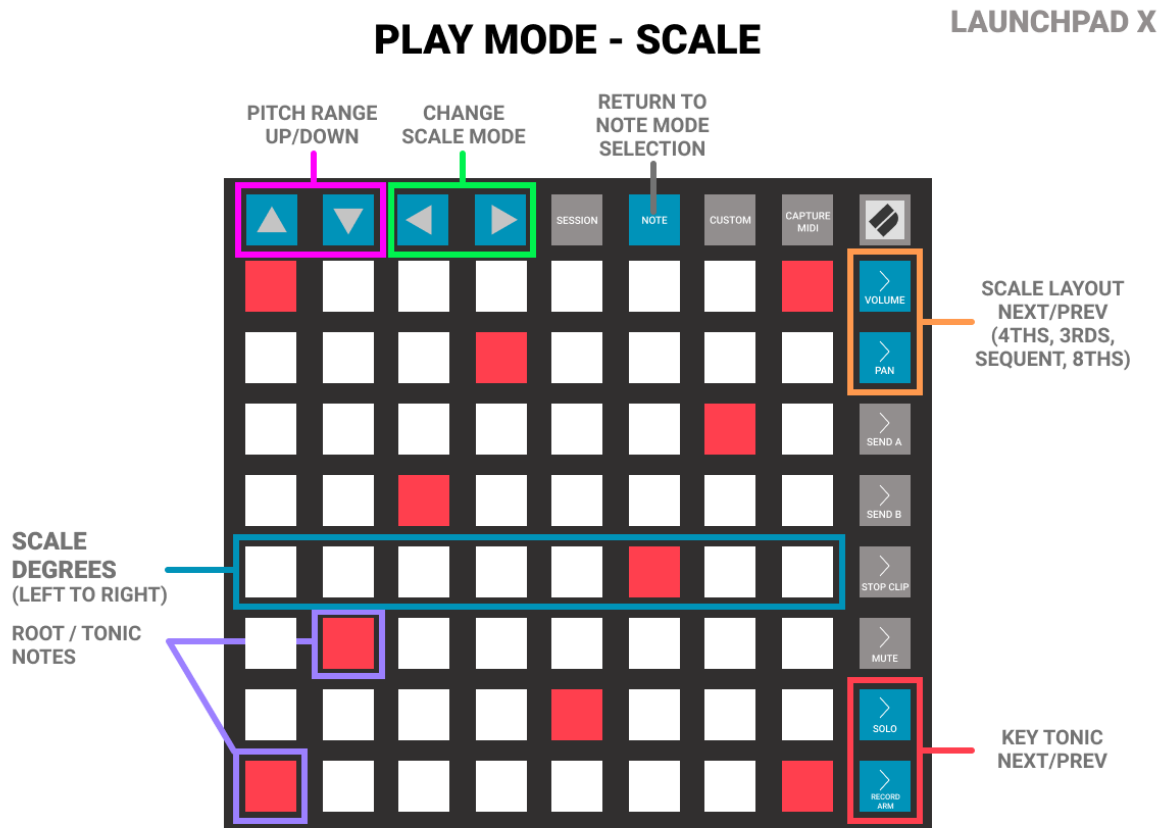


Figure 4: Play Mode - Scale

17.9.2 Piano Mode

Press “Note” twice to enter.

- Arranges the pads like a classic piano keyboard.
- The white lit pads are the white keys.
- The gray lit pads are the black keys.
- You get 4 octaves to play with

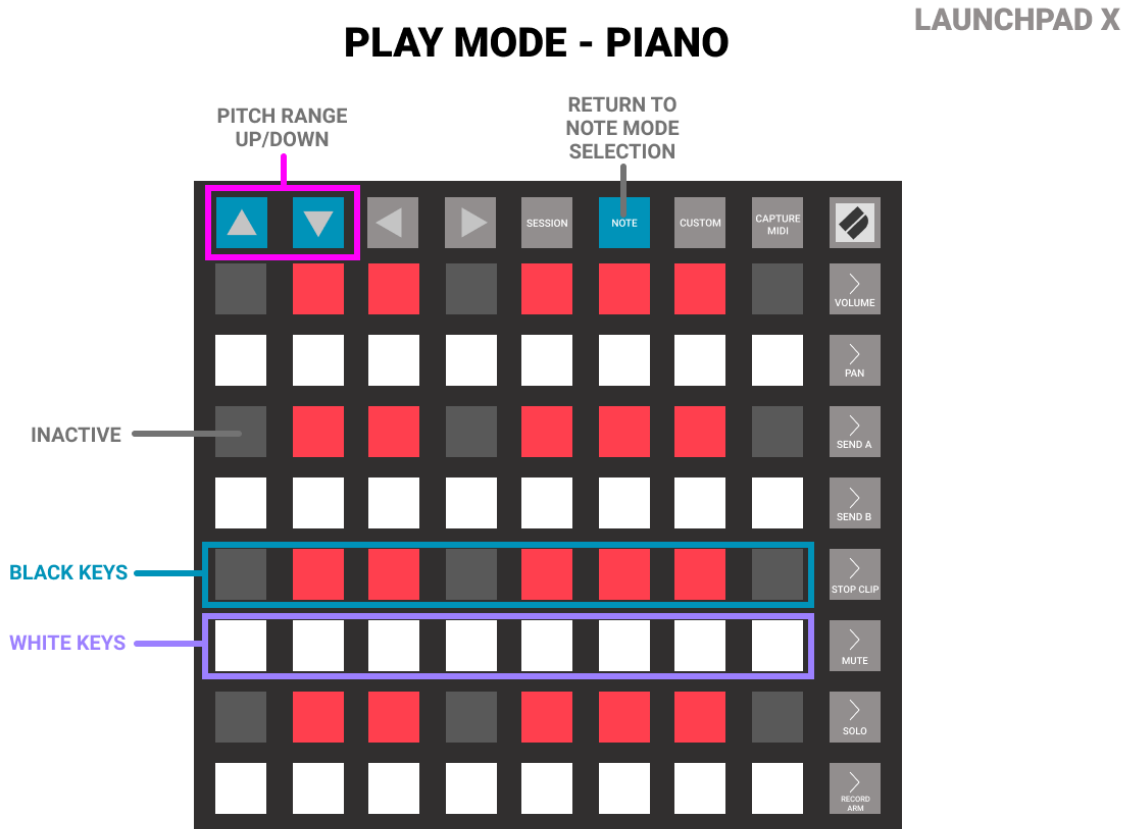


Figure 5: Play Mode - Piano

17.9.3 Drum 64 play mode

Press “Note” multiple times to select *Drum 64*.

This mode gives you 64 pads for playing a drum device. The 16 pads in the left lower area are the same as in the drum sequencer mode.

17.10 Sequencers

17.10.1 Sequencer Functions common to all sequencers (except Raindrop)

- Use the arrow keys to navigate in the grid.
- Note that you can scroll past the end of the clip (to the right).

PLAY MODE - DRUM64

LAUNCHPAD X

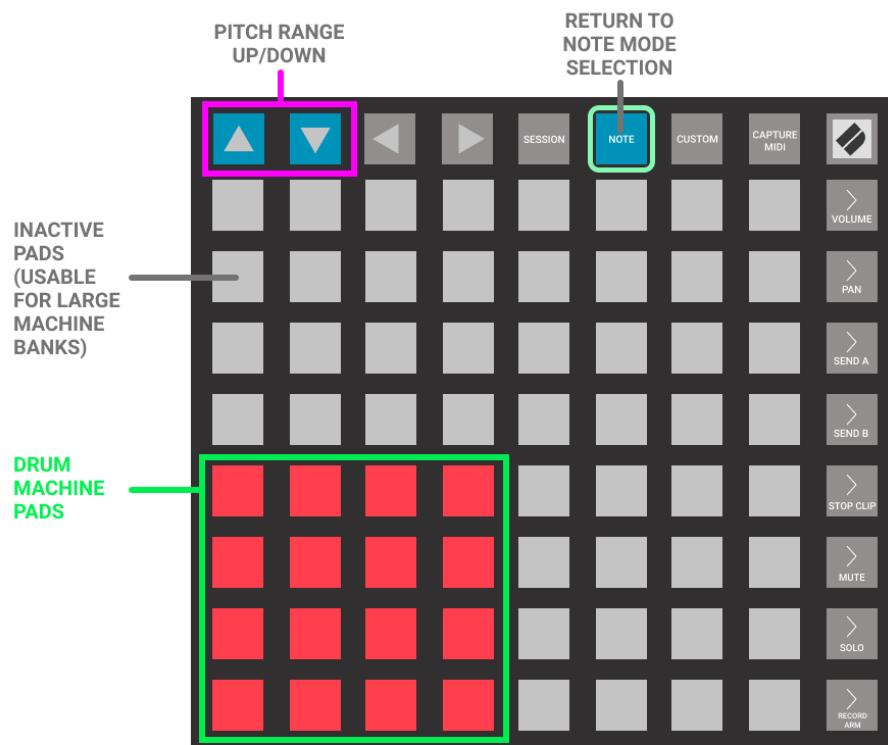


Figure 6: Play Mode - Drum64

- Press pads to enter/delete notes. The velocity of the pressed key is set as well.
- Change the note length or create long notes by pressing a note pad and then a pad right of it.
- To duplicate notes keep the Duplicate button pressed, select the source note, press empty destination pad(s). The note will be copied with all settings.
- Note starts and lengths are lit in different colors.
- Use the Scene buttons to change the grids resolution.

17.10.2 Sequencer Mode

Press “Note” and select the first orange pad to enter the **Sequencer** mode:

- The pads display an 8x8 view of the selected clips note grid.
- The rows represent the notes of the selected scale.

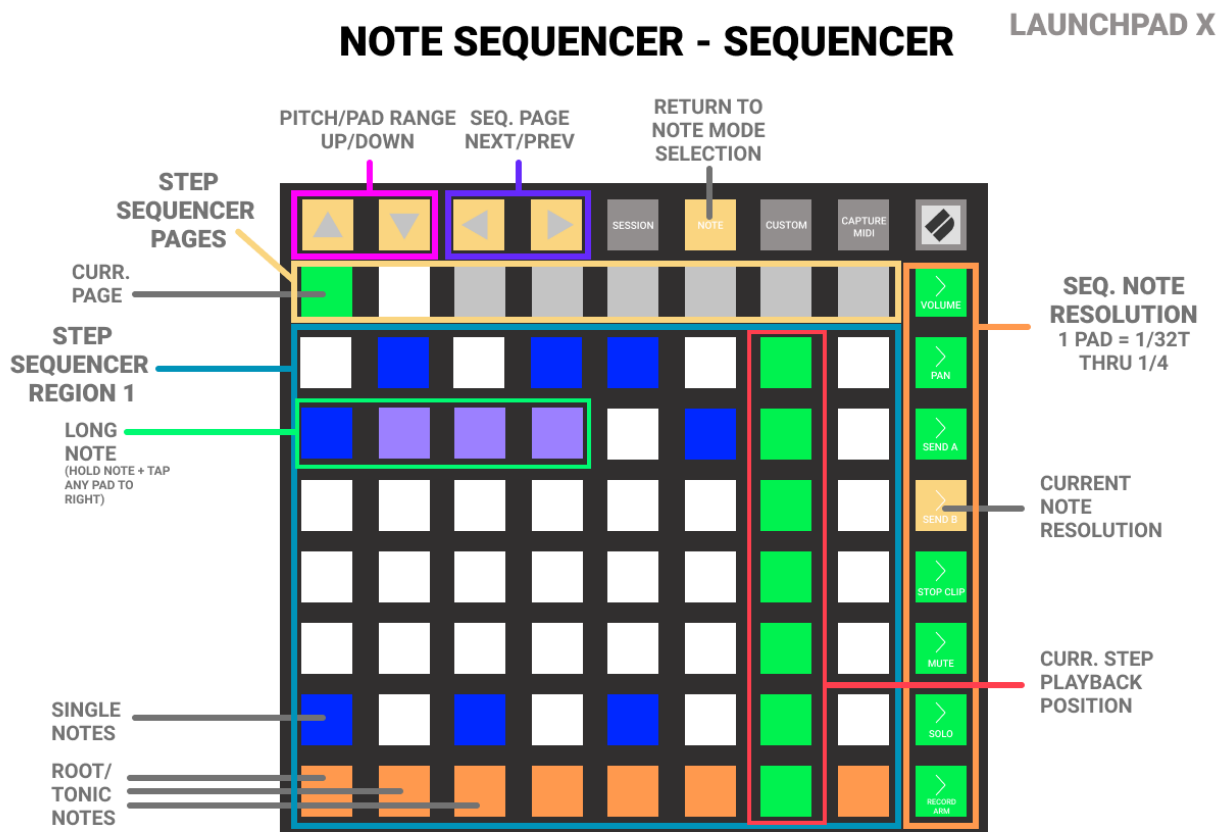


Figure 7: Sequencer Mode - Sequencer

17.10.3 Poly Sequencer

Press “Note” and select the second orange pad to change to the **Poly Sequencer**:

- The lower half displays the playable notes like in the Note Mode
- Play one or more notes in that area

- Create a step in the upper part by pressing a pad. The step will contain the last notes you played in the lower part.
- Arrow keys change the octaves and step pages

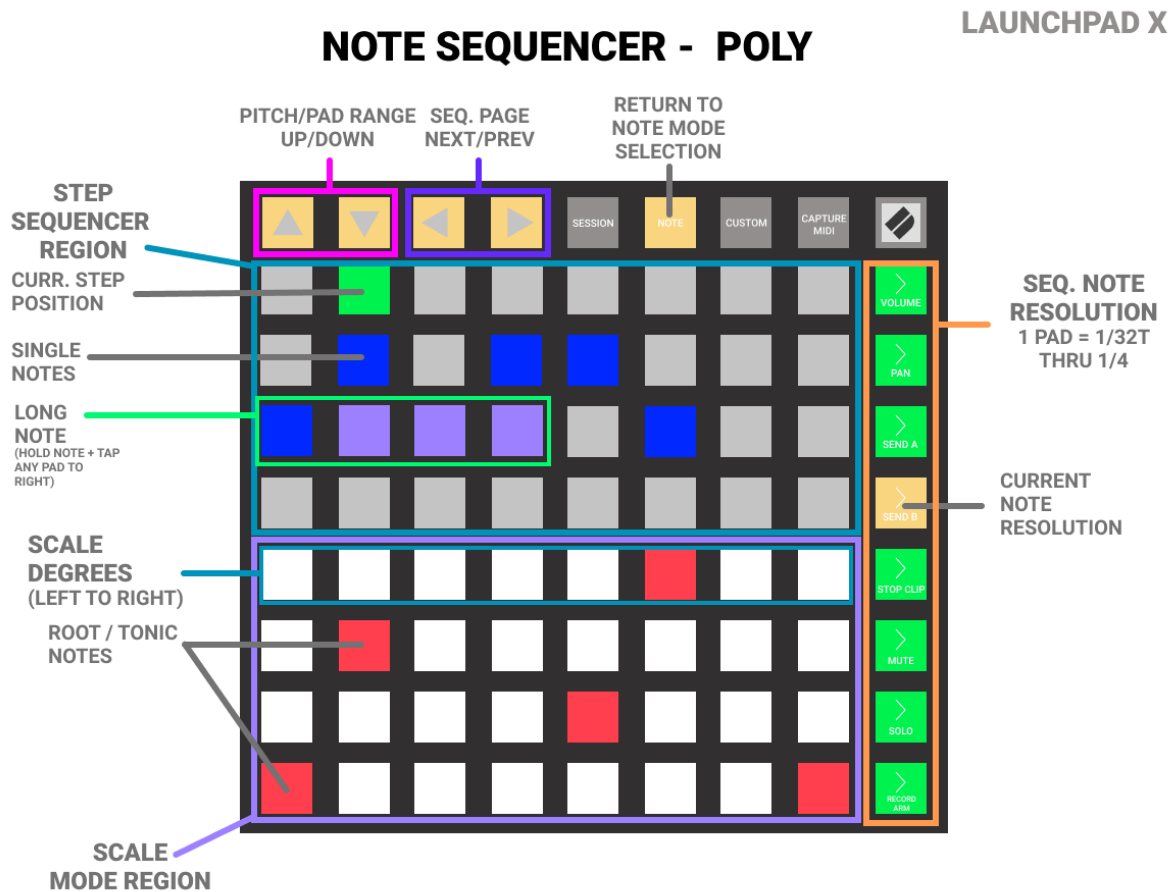


Figure 8: Sequencer Mode - Poly

17.10.4 Raindrop sequencer

Press “Note” and select the third orange pad to change to the **Raindrop Sequencer**:

- The lowest row displays the playable notes
- The row above a note starts a raindrop
- If the raindrop reaches the note it sounds

17.10.5 Drum Sequencer Mode

Press “Note” and select the first blue pad to change to the **Drum Sequencer**.

- The drum sequencer works as described in the Ableton Push manual.
- Hold *Delete* + Drumpad to delete the midi notes of the current clip on that ‘pad’.
- To make the display of mute/solo/exists states work, the primary device needs to be the drum machine (which is normally the case).
- The Drumpads use the colors set in the drum machine for each pad.

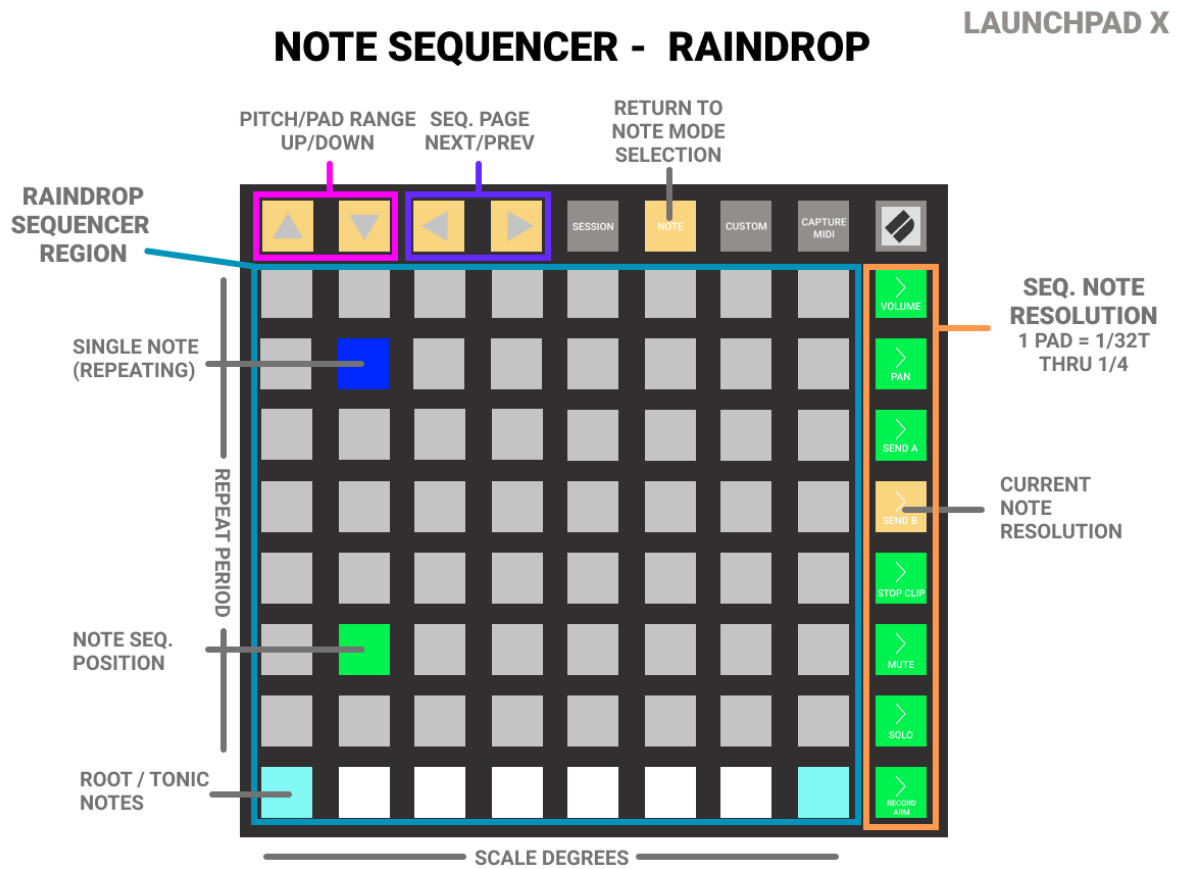


Figure 9: Sequencer Mode - Raindrop

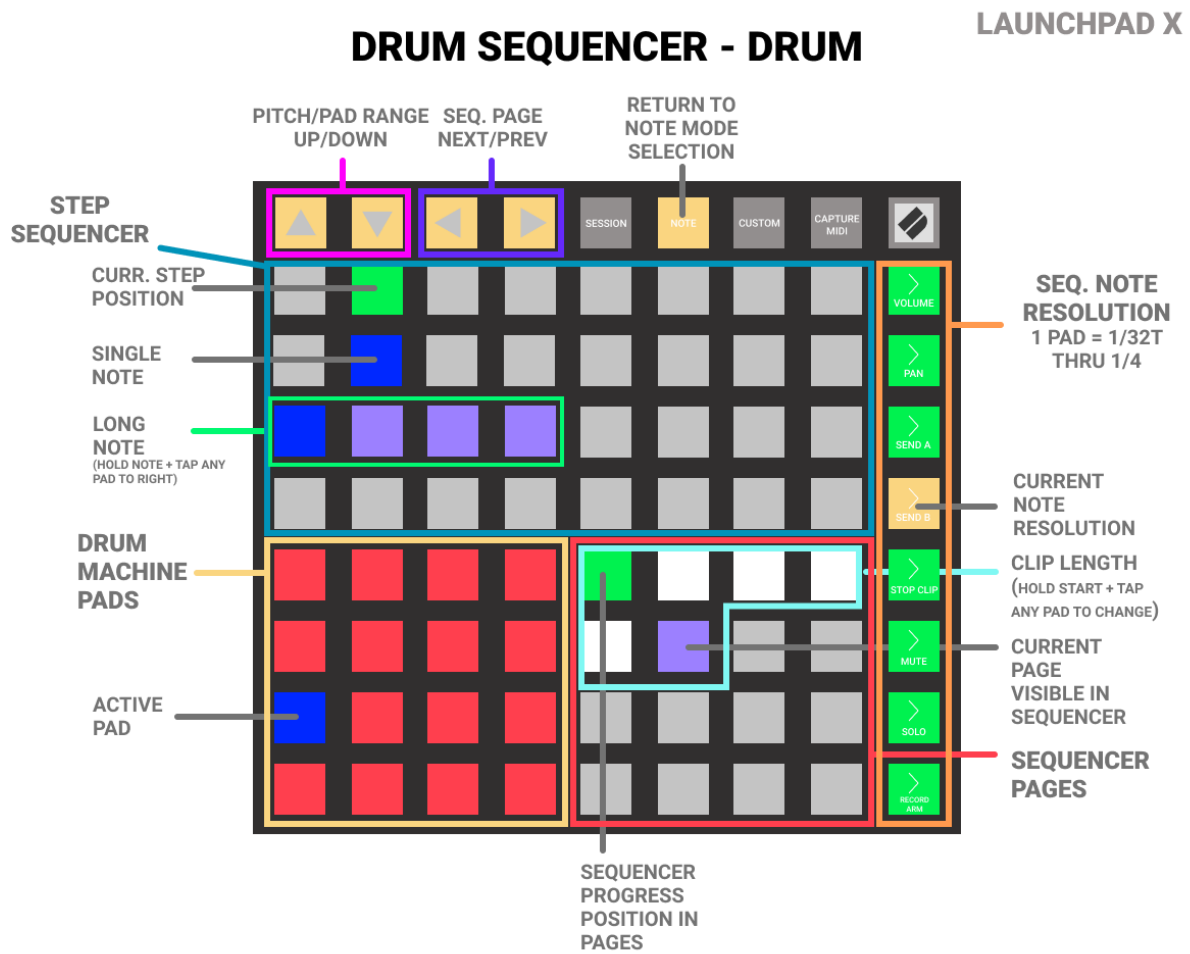
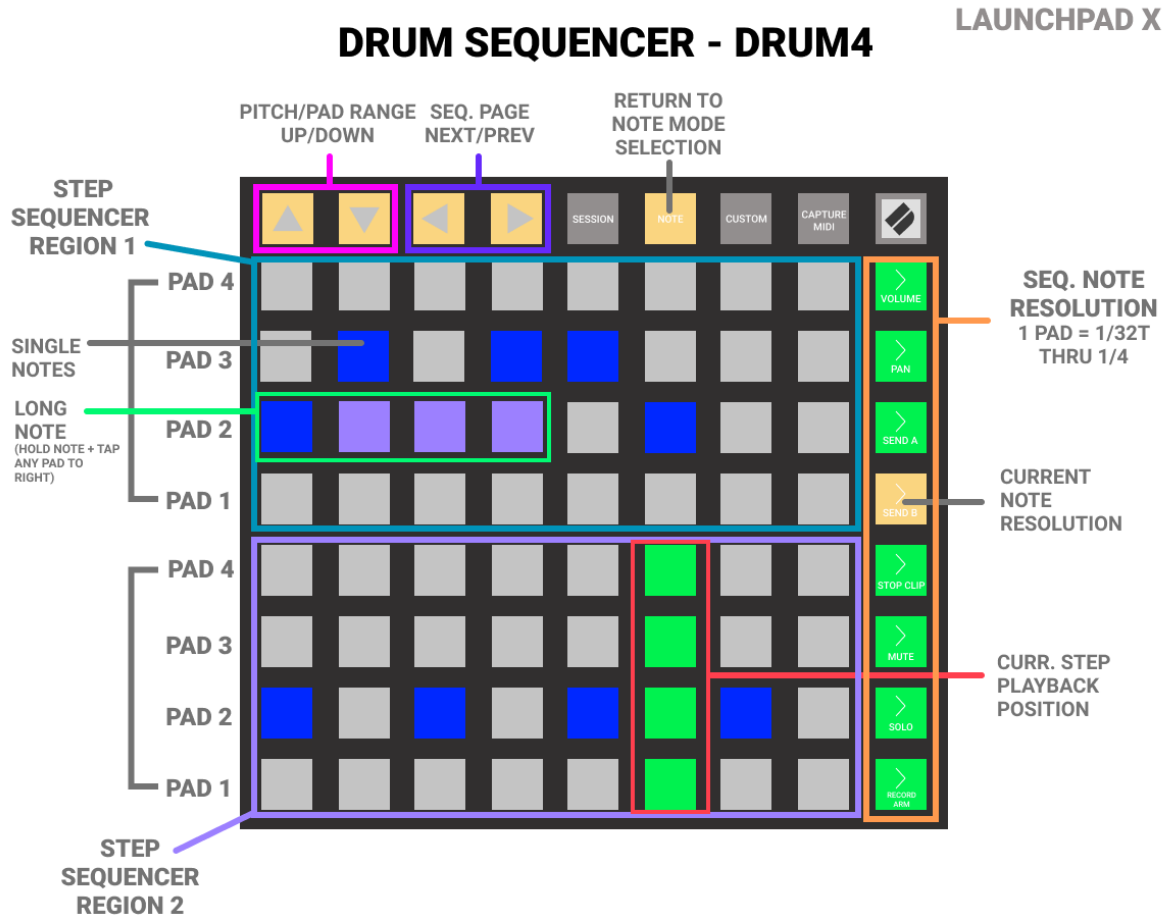


Figure 10: Drum Sequencer Mode - Drum

17.10.6 Drum 4 and Drum 8 sequencer

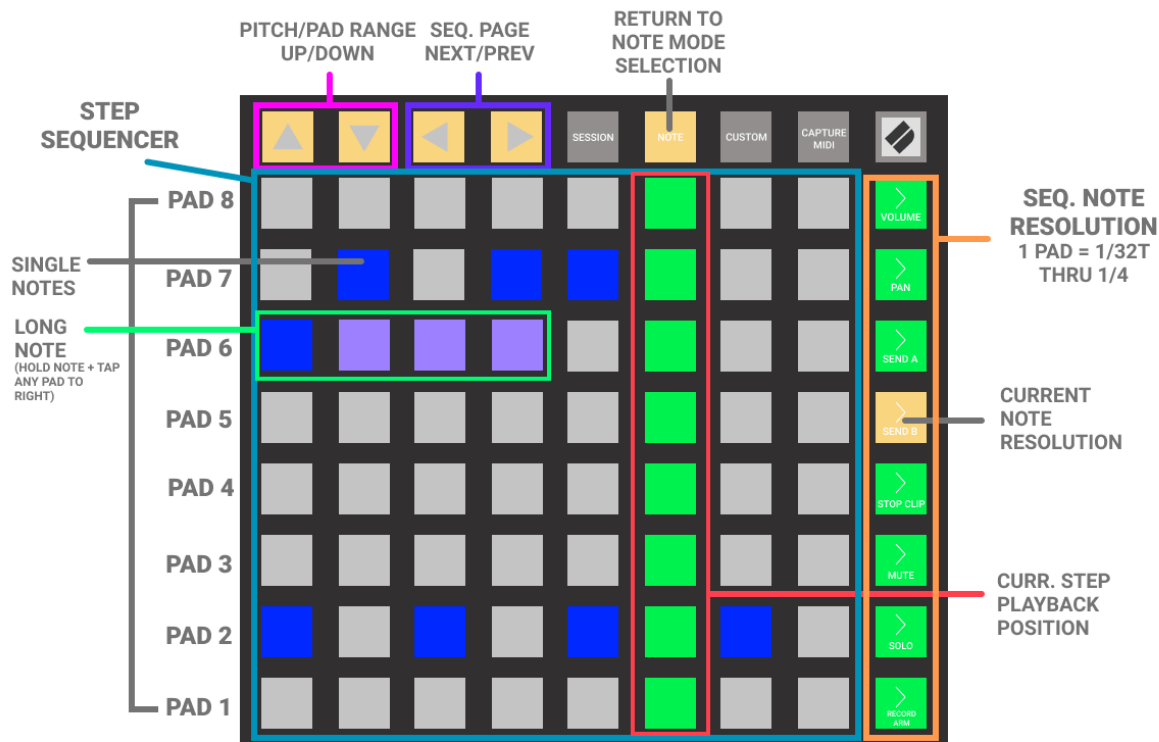
Press “Note” and select the second or third blue pad to change to *Drum 4* or *Drum 8*.

These drum sequencers show 4 or 8 drum sounds for sequencing. Use the cursor buttons to move in the clip.



DRUM SEQUENCER - DRUM8

LAUNCHPAD X



17.11 Device Mode

Press “*Device*” to enter the **Device** mode:

- Each column of the grid controls a parameter of the currently selected device.
- These virtual faders use the same colors as the Bitwig highlight colors.
- Hit buttons harder for faster fader change.
- Cursor up/down to the next / previous device
- Cursor left/right to the next / previous parameter bank

17.12 Browser Mode

Press “*Device*” twice to enter the browser mode for preset selection. It will only enter the mode if a device is currently selected. Press “*Shift+Device*” to open the device browser to add a device after the currently selected one.

- The first 6 columns of the grid relate to the first 6 columns of the preset browser.
- The 8th column (yellow) relates to the result (preset or device) column of the browser.
- The 1st row moves the selection up by 1.
- The 2nd row moves the selection up by 8.
- The 3rd row moves the selection down by 8.
- The 4th row moves the selection down by 1.
- The red button dismisses the new preset or device selection and closes the browser.

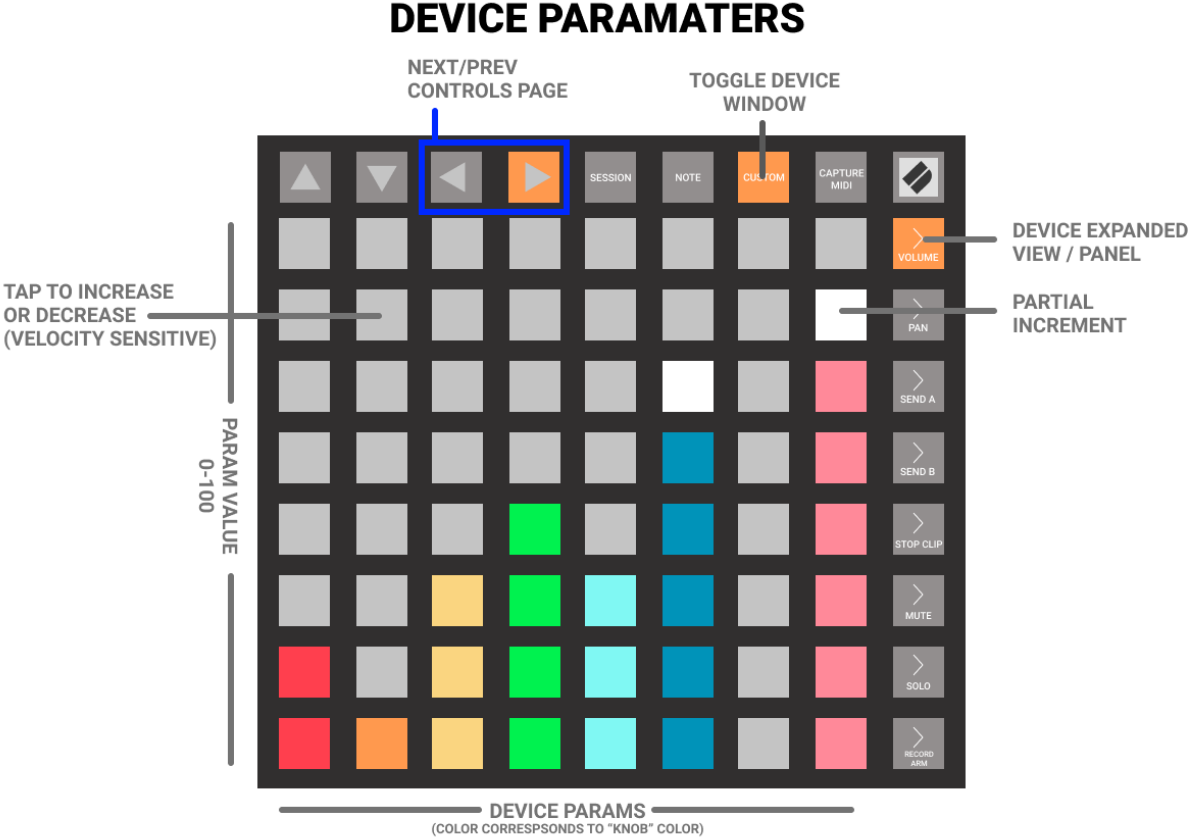


Figure 11: Device Mode

- The green button confirms the new preset or device selection and closes the browser.
- The purple buttons are for previewing presets of instrument devices.
- Left/Right buttons switch to the next / previous browser tab.
- Up/Down buttons switch from replacing the current device to inserting a new device before or after it.

LAUNCHPAD X

BROWSER

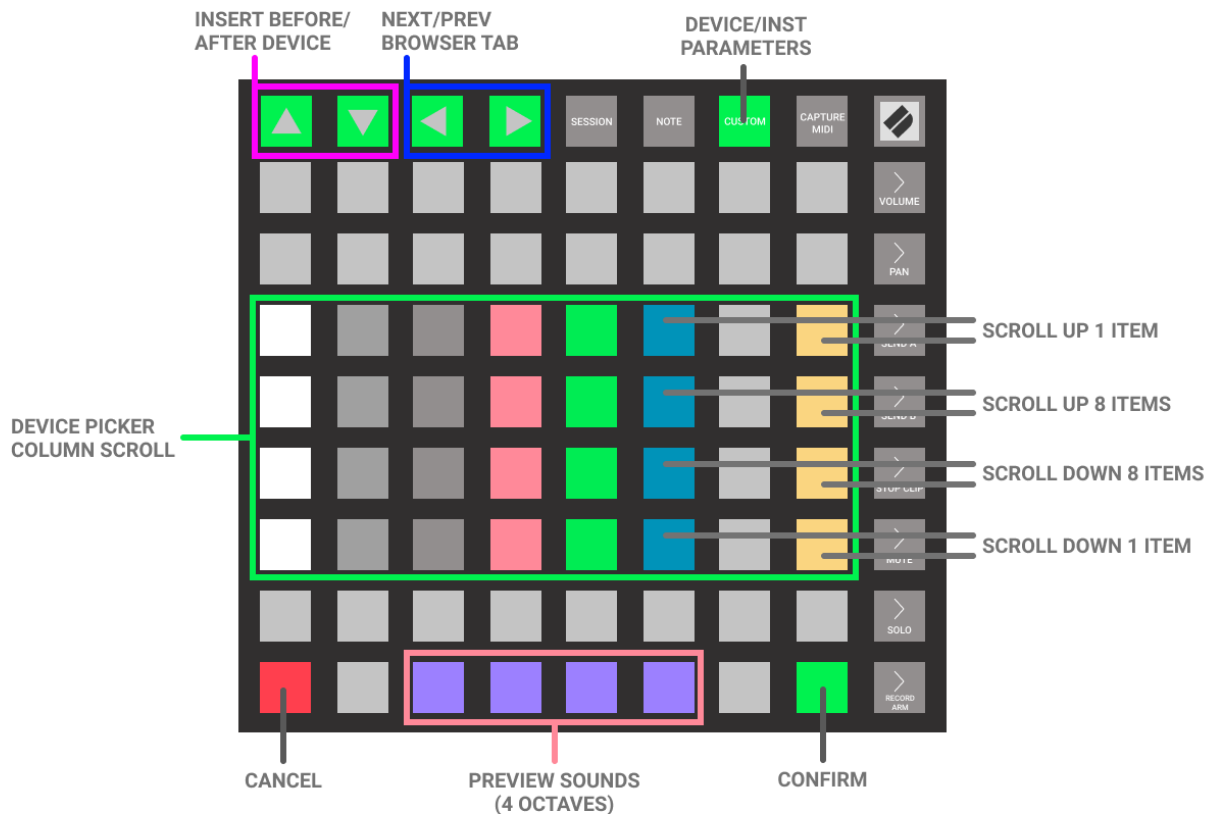


Figure 12: Browser Mode

17.13 Preferences Dialog

You can set several preferences in the Preferences dialog of the script, which are stored when you exit the DAW. Note that some of them are not available via the Launchpad Pro controller.

18 Novation Remote SL MkI & MkII

Support script for Novations' Remote MkII controller. You can control track parameters, devices, transport, play the pads, start scenes and a step sequencer.

18.1 Installation

- If you added the controller manually, choose the 2nd MIDI port of the device as in-/output. Select the first port as the 2nd input.

18.2 Introduction

The Transport button acts as a kind of Shift key. If you press it (no need to keep pressed) the behaviour of the Transport buttons changes slightly and you can switch between Control and Play mode. To switch mode use the first row buttons. Use the P1 buttons to access several menus of a specific row.

Notes for the **ZeRO SL MkII**:

- The script also supports this model
- The P1 up/down buttons are the Page left/right buttons on the ZeRO
- The P2 up/down buttons are the Page left/right buttons with keeping the Preview button pressed at the same time on the ZeRO
- To switch the display to a specific row keep the Preview button pressed and press a button on the row.
- The Crossfader is the same as the X-axis of the Touchpad and therefore can be configured with the Touchpad settings.

18.3 Control Mode

1. 1st button row - Various functions

- **Undo** - Undoes the last operation.
- **Redo** - Redoes the last operation.
- **Delete** - Like pressing the delete key.
- **Double** - Duplicates the selected item(s), notes, etc.
- **New** - It creates a new clip on the selected track and slot, starts play and enables overdub.
- **Window** - Open/close the VST window.
- **Metronome** - Toggle the metronome.
- **Tap Tempo** - Tap Tempo.
- Press row selection button twice (or use the P1 buttons) to edit the length of the clip which is created when you execute the **New** function.

2. 1st knob row - Edit device parameters

- Use the up/down P1 buttons to select the next/previous 8 device parameters.
- 8 edit knobs: Change 8 parameters of the selected device (FX).

3. 2nd button row - Toggle parameters of selected track and device

- **Mute** - (Un-)mutes the selected track.
- **Solo** - (Un-)solos the selected track.
- **Rec Arm** - Arm/disarm the selected track.
- **Write** - Toggle Automation Write of selected track.
- **Browse** - Press Browse to enter patch selection mode for the currently selected device. Press one of the buttons to select changing of a filter or patch. Then use the first 2 buttons for navigation. Confirm with the 8th button or discard with all others.
- **Device** - Dis-/Enable the currently selected device.
- **«Device** - Select the previous device in the chain.
- **Device»** - Select the next device in the chain.
- Press row selection button twice (or use the P1 buttons) to switch perspectives and dis-/enable panels.

4. 2nd knob row - Edit parameters of selected track.

- **Volume** - Change the volume of the selected track.
- **Pan** - Change the panning of the selected track.
- **Crossfader** - Change the crossfader A or B setting of the selected track.
- **Send 1** - Change the volume of 1st send of the selected track.
- **Send 2** - Change the volume of 2nd send of the selected track.
- **Send 3** - Change the volume of 3rd send of the selected track.

- **Send 4** - Change the volume of 4th send of the selected track.
 - **Send 5** - Change the volume of 5th send of the selected track.
 - Press row selection button multiple times (or use the P1 buttons) to toggle between the editing of normal tracks, effect tracks and the master track.
5. Drum Pads - Plays the Midi notes 36 to 43
 6. Sliders - Change volume of selected 8 tracks
 - Select row to see the track names and volumes
 - Use the up/down P2 buttons to select the next/previous 8 tracks (track bank)
 7. 3rd button row - Track selection
 - Press one of the buttons to select one of the 8 tracks of the current track bank.
 8. 4th button row - Transport Off
 - « (**Rewind**) - Rewinds play cursor position until released.
 - « (**Forward**) - Forwards play cursor position until released.
 - □ (**Stop**) - Stop playback. Press twice to move play cursor to start of song.
 - > (**Play**) - Start/Stop playback. Double click to move play cursor to start of song.
 - **Loop** - Toggle repeat
 - **Record** - Toggle Arranger recording
 - **7th button** - Decreases tempo until released.
 - **8th button** - Increases tempo until released.
 9. 4th button row - Transport On Same as above but
 - **Record** - Toggle launcher overdub
 - 7th and 8th button do not work

18.4 Play Mode

The functionality of this mode is twofold: You can start scenes and sequence. The step sequencer is mainly intended for drums but works also with notes. The sequencer uses the buttons below the faders which form 16 steps. They have two modes which are toggled with the 8th button of the 2nd button row. The first mode is for playing the notes, the last played note selects it for the step sequencer. The second mode allows to dis/enable each step.

1. 1st button row - Launch Scenes
 - Launch the 8 scenes of the current scene bank
 - Use the P1 buttons to move the page bank. **Note:** The names are always Scene 1 to Scene 8 on each page (API limitation). To prevent confusion give names to your scenes.
2. 1st knob row - Same as in Control mode
3. 2nd button row - Toggle parameters of selected track and device
 - Octave down
 - Octave up
 - Resolution down
 - Resolution up
 - Scroll grid left
 - Scroll grid right
 - No function
 - Toggle Play / Sequence
4. 2nd knob row - Same as in Control mode
5. Drum Pads - Same as in Control mode

6. Sliders - Same as in Control mode
7. 3rd + 4th button row - Play notes / sequence
 - Toggle step or play/select notes

18.5 Preference dialog

You can configure the functionality of the touchpad.

19 Novation SL Mk III

Support for Novations' SL Mk III controller.

19.1 Installation

- If you added the controller manually, choose the 2nd MIDI port of the device as in-/output. Select the first port as the 2nd input.

19.2 Global Features

- « - Move the playcursor to the left in the arranger
- » - Move the playcursor to the right in the arranger
- **Stop** - Stop playback. Press again to move play cursor to start of song.
- **Play** - Start/Stop playback. Double click to move play cursor to start of song. You can configure the behavior on stop in the preferences.
- **Shift+Play** - Toggle repeat
- **Repeat** - Toggle repeat
- **Record** - Start/Stop recording
- **Shift+Record** - Toggle launcher overdub
- **Duplicate** - Duplicates the first selected clip on the current track. Combine with a pad in session mode (duplicate clip) or a track select button (duplicate track).
- **Clear** - Like pressing the delete key. Hold the button for additional functionality in combination with other buttons and knobs, see the mode and view explanations below.

19.3 Fader and button section

- The faders always control the volume of the 8 tracks currently in view.
- The LEDs above the faders show the color of the track. The higher the volume of the track, the brighter the LED.
- The buttons above the LEDs allow to control either Mute/Solo or Monitor/Arm states. Use the up/down buttons to the right to switch between the two options.

19.4 Modes

- Hold the Clear button and move an encoder to reset a value to its default value in all modes.
- Hold the Duplicate button and press one of the Select buttons below the display to duplicate an item.
- Hold the Clear button and press one of the Select buttons below the display to remove an item.
- Hold the Shift button when using the Encoders for fine increment value changes.

19.4.1 Options Mode

Press the “Options” button to activate.

- Knob 1 **Mstr Vol** - Changes the Master Volume
- Knob 2 **Mstr Pan** - Changes the Master Panorama
- Knob 5 **Tempo** - Changes the Tempo
- Knob 6 **Metronome** - Changes the Metronome Volume
- Button 1 **Undo** - Undoes the last action
- Button 2 **Redo** - Redoes the previously undone action
- Button 3 « **Project** - Switch to the previous opened project
- Button 4 **Project**» - Switch to the next opened project

- Button 5 **Tap** - Press multiple times to tap a new tempo
- Button 6 **Off/On** - De-/activate the Metronome
- Button 7 **Engine** - Dis-/Enable audio engine
- Button 8 **Quantize** - Quantizes the currently selected clip

19.4.2 Track Modes

Press the **Down button** left to the display to switch between the different modes. Alternatively, hold the Down button and select one of the modes with the select buttons below the display.

1. **Track** - The Down button LED is lit **Green**
 - 8 edit knobs: Change volume/pan/Send1-6 of selected track. Hold **Shift** for fine adjustments.
 - 8 buttons: Press to select a track
 - Track Left/Right buttons: Select next/previous track
 - Shift+Left/right arrows: Select next/previous track bank
2. **Volume** - The Down button LED is lit **Blue**
 - 8 edit knobs: Change volume of selected 8 tracks. Hold **Shift** for fine adjustments.
 - Buttons behave as above.
3. **Pan** - The Down button LED is lit **Amber**
 - 8 edit knobs: Change pan of selected 8 tracks. Hold **Shift** for fine adjustments.
 - Buttons behave as above.
4. **Send 1-8** - The Down button LED is lit **Yellow**
 - 8 edit knobs: Change volume of Send 1-8 selected 8 tracks. Hold **Shift** for fine adjustments.
 - Buttons behave as above.

In all track modes hold **Shift** for additional functions: * Button 1 **On/Off**: De-/Activate track * Button 2 **Pin**: Pin the track (does no longer follow the selection in Bitwig) * Button 3 **Color**: Select a new color for the track. After pressing the button press one of the pads to select a color. You can access more colors by using the Scene up/down buttons. * Button 6 **Add Instr**: Adds a new instrument track * Button 7 **Add Audio**: Adds a new audio track * Button 8 **Add FX**: Adds a new effect track

19.4.3 Device Modes

Press the **Up button** left to the display to switch to Device mode and toggle between the display of devices and parameter pages. Alternatively, hold the **Up button** and select one of the modes with the select buttons below the display. This menu also contains the **User Mode** (press 8th button).

1. **Device - Devices** - The Up button LED is lit **Mint**
 - 8 edit knobs: Change 8 parameters of the selected device (FX). Hold **Shift** for fine adjustments. Hold the Clear key and turn the encoder to reset its value.
 - Buttons select a device of the selected track.
2. **Device - Parameter Pages** - The Up button LED is lit **Purple**
 - 8 edit knobs: As above.
 - Buttons select a parameter page of the selected device.
3. **User Mode** - The Up button LED is lit **White**
 - 8 edit knobs: Change the value of the mapped user parameters.
 - Buttons select a user parameter page (8x8). The pages can be named in the settings.

In the device and parameters modes hold **Shift** for additional functions:

- Button 1 **On/Off**: De-/Activate the selected device
- Button 2 **Params**: Show/hide the remote controls section of the currently selected device
- Button 3 **Expanded**: Show the currently selected device in narrow or wide form
- Button 4 **Window**: Show/hide the device window (if any)
- Button 5 **Pin**: Pin the device (does no longer follow the device selection in Bitwig)
- Button 6 « **Insert**: Open the browser to add a device before the currently selected one

- Button 7 **Replace**: Open the browser to replace the currently selected device or select a different preset
- Button 8 **Insert »**: Open the browser to add a device after the currently selected one

Buttons 6-8 open the browser mode, which works as follows:

- Columns 1/2 buttons/knobs: Select the browser tab
- Columns 3/4 buttons/knobs: Select the filter column
- Columns 5/6 buttons/knobs: Select the filter columns value
- Columns 7/8 buttons/knobs: Select the result value

19.5 Grid Modes

1. **Session** - The Grid button LED is lit **Green**

Press the Grid button till the LED is lit Green to enter **Session** mode.

- The buttons on the grid start/record the clips.
- The 2 scene buttons start scenes.
- The arrow keys left of the grid scroll the grid. Hold **Shift** to scroll in blocks of 8.
- Press **Clear** + Pad In Session Mode to delete the clip.

2. **Sequencer** - The Grid button LED is lit **Blue**

Press the Grid button till the LED is lit Blue to enter **Sequencer** mode.

The Sequencer is mainly intended for Drum Sequencing but can also be used for instruments. A clip needs to be selected. Press one of the pads to play and select a note. Switch to step view with the Scene 1 button. In step view dis-/enable the steps by pressing the pads. If a Drum Instrument is selected the steps are drawn in the color of the selected drum pad.

- **Scene 1** - Toggle between note and step view
- **Scene 2** - Open the resolution selection mode. Press one of the buttons below the display to select a resolution.
- **Scene up/down** - Change the range of selected notes.
- **Shift+Scene up/down** - Navigate the pages of a clip.

19.6 Preferences Dialog

You can set several preferences which are stored when you exit the DAW.

20 Changes - Bitwig Studio

8.97

- Launchkey Mini Mk3
 - New: Display user pages when switching in user mode
 - Fixed: User mode mapping mapped to CC instead of user parameters.
- MCU
 - New: **IMPORTANT**: The device MIDI ports are now ordered left to right, which means if your main device is to the right, it needs to be the last!
 - New: You can configure for each of your MCU devices if it should act like the main device (e.g. enable transport controls; you can have multiple) and has now the option to support the specific Mackie extender protocol.
- OSC
 - New: The bank page size can be configured from 1-200.
- Push 1/2
 - New: In Marker mode it can now choose to either Launch or only Select the marker when pressed.
 - New: Color settings are used in MIDI clip mode. Furthermore, always at least 4 rows are displayed.

8.96

- All devices
 - New: Included PDF manual
 - Fixed: Fixed several issues with user modes
- APC40 MkII
 - New: Added user mode
- Launchkey Mini Mk III
 - New: Option to remove the master and group-master tracks from the track bank (requires restart of extension).
- Launchpad
 - Fixed: Do not switch to play mode when changing tracks in Volume, Pan and Send modes.
- MCU
 - New: **Option+Tempo/Ticks** toggles between displaying the time or beats. **Tempo/Ticks** toggles the display of ticks/milliseconds or the current tempo for the last 3 digits. Both are also available in the settings.
 - Fixed: Fixed some issues with fader touch
- Novation SLMkIII
 - New: Added user mode. Long press the UP button and then 8th row button below the display. Page names are configurable in the settings.
- OSC
 - Fixed: /time/str now really sends the time (did send measures before)
- Push 1/2
 - New: Cancel notification message when changing modes
 - Fixed: Position now really shows the time (did display measures before)

8.95

- APC / APCmini
 - Fixed: Fixed a crash in Raindrop sequencer
- Generic Flexi
 - New: Added option to send the LED value even when command is received from the device.
- Launchpad
 - New: Poly Sequencer: Currently played sequencer notes are also lit on the play area
 - Fixed: Fixed a crash in Raindrop sequencer
- Komplete Kontrol Mk 1
 - Fixed: Modulation wheel did trigger button press of the main encoder
- Mackie HUI:

- Fixed: New command could not be triggered from footswitch
- Fixed: Faders and knobs in simulator view did not work
- Push 1/2
 - New: Poly Sequencer: Currently played sequencer notes are also lit on the play area
 - Fixed: Fixed a crash in Raindrop sequencer

8.94

- Generic Flexi
 - New: The MIDI channel for the keyboard (or pads if it is a pad controller) can be explicitly set (previously it was fixed to channel 1). It can also be turned off or set to all. If a MIDI note is mapped to a function on this MIDI channel, the note is blocked from being played. Note: If you have selected All for the channel the note is blocked on all channels!
 - New: Modulation Wheel (CC 01), Sustain Pedal (CC 64) and Pitchbend were previously automatically routed to Bitwig. You can now turn them off individually if you want to map them to something else.
- Launchpad
 - New: Option to remove the master and group-master tracks from the track bank (requires restart of extension).
 - New: Pro: Disabled Delete button if used without button combination to prevent accidental deletions.
- OSC
 - Fixed: Changing output server/port did still not work.

8.92

- Requires Bitwig 3.1.3+ (which fixes the issues with 8.80)
- Launchpad
 - Fixed: Note selection mode could not be activated on Launchpad Pro since it was mixed up with the user mode.
 - Fixed: Note selection was activated when coming from a non-note mode but should not.

8.91

- Requires Bitwig 3.1+.
- All devices
 - Same known issues as with 8.80 still apply
- Generic Flexi
 - New: If you have multiple banks configured the selected patch of a bank is only reset if the new bank has the same MIDI channel. This allows to configure additional banks for multitimbral synthesizers (= can play different sounds on different MIDI channels).
- Launchpad
 - New: Easier selection of note modes. Pressing the note button brings up a menu where you can directly select the note/sequencer mode. First row (from top) selects play modes, 3rd row drum modes and 5th row sequencer modes.
 - New: Changing note length does now also work in Poly Sequencer
 - Fixed: Displaying longer notes did not work in Poly Sequencer
- Maschine Mikro 3
 - Fixed: Removed restriction that drum octave could only be changed if a clip was active.
- MCU
 - New: Group/Write Automation changed to trigger Latch automation
- Push 1/2
 - New: Changing note length does now also work in Poly Sequencer
 - Fixed: Displaying longer notes did not work in Poly Sequencer

8.90

- Requires Bitwig 3.1+.

- All devices
 - Same known issues as with 8.80 still apply
- Generic Flexi
 - New: Improved handling of Program Change as source. For trigger commands also a *button up* is executed; for continuous commands the value of the PC is sent (and not always replaced with 127). This allows e.g. to map different PC buttons to an Instrument selector device.
 - New: Patch Bank Selection, see Generic Flexi documentation for more info.
- Launchpad
 - New: Inverted back the clip/scene scroll direction (was also not conform with the LED lighting)
- Push 1/2
 - New: Last selected Layer mix mode is remembered
 - New: Inverted back the clip/scene scroll direction

8.80

- Requires Bitwig 3.1+.
- All devices
 - Known Issue: If the audio engine is off also the controller does not work anymore. Because the MIDI processing is now running in the audio process, which means if there is no audio process, there is also no midi. Will be fixed in an upcoming Bitwig Studio version.
- Akai APCmini
 - New: Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
- Akai APC40 / APC40mkII
 - New: Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
 - New: Improved scrolling of browser columns
 - Fixed: Browser crashed when activated
- Generic Flexi
 - New: Added new function: **Clip: Quantize**
 - New: Added functions for note repeat
 - New: Added functions for transposing the keyboard
 - Fixed: Configured knob speed settings were not set on startup
- Komplete Kontrol A-Series / M32
 - Fixed: Configured knob speed settings were not set on startup
- Launchpad
 - New: Virtual faders support 4 velocity steps (on all models)
 - New: Activates hardware play mode again when extension is stopped
 - New: Change note length or create long notes in the Sequencers (Note, Drum, Drum 4, Drum 8) by pressing a note pad and then a pad right of it.
 - New: Launchpad Pro: Duplicate notes in Drum 4 and Drum 8 sequencers
 - Fixed: Color of front LED was wrong when mode was changed
 - Fixed: Cursor left was not lit correctly in Drum 4 and Drum 8 mode
- OSC
 - Known Issue: Receive port is not set correctly on startup (1024). Therefore, the extension crashes and is currently not usable! Should be fixed in the next Bitwig update.
 - New: Check for lower port bound (1024)
 - New: Check that send and receive ports are different
- Push 1/2
 - New: Change note length or create long notes in the Sequencers (Note, Drum, Drum 4, Drum 8) by pressing a note pad and then a pad right of it.
 - Fixed: Master mode only showed up shortly when Master volume knob was touched
 - Fixed: Configured knob speed settings were not set on startup

8.70

- Requires Bitwig 3.1+.
- All devices
 - Known Issue: If the audio engine is off also the controller does not work anymore. Because the MIDI processing is now running in the audio process, which means if there is no audio process, there is also no midi. Will be fixed in an upcoming Bitwig Studio version. Should be fixed in the next Bitwig update.
 - Fixed: Browsing presets (or replacing) the selected device, always brought up the browser on the first device of the track
 - Fixed: Adding a device always added it relative to the first instrument device
 - Fixed: Devices could not be added to the master track if there was no other device yet
- Beatstep
 - New: Easier switching between note selection and step editing in sequencers. Turning knob left selects play/note select, turning it right selects step editing.
 - Fixed: Value change on some knobs were flipped (e.g. scrolling browser).
 - Fixed: The Note Sequencer used the drum mapping and octave shifting.
 - Fixed: Pads sometimes lit with wrong color after pad was pressed
 - Fixed: Pads sometimes lit with wrong color after leaving Shift mode
 - Fixed: Browser mode was canceled when Shift was released
- OSC
 - New: The address and port of the OSC client (“send to”) can be configured again but requires restarting the extension (turn off/on).
- Launchpad
 - Known Issue: User mode crashes. Should be fixed in the next Bitwig update.
 - New: **Duplicate+Scene** duplicates the scene.
 - New: Up/Down buttons in browser mode switch from replacing the current device to inserting a new device before or after it.
 - New: Non-Pro models: Pressing the Delete and Duplicate pads in shift mode activates the related mode. Leaving the shift mode and entering session mode allows then to delete/duplicate clips, scenes and tracks. After deleting/duplicating an item the delete/duplicate mode is turned off.
 - New: Turn off panorama lights for non-existing tracks, instead of showing them centered
 - Fixed: Fader scaling was wrong (except Launchpad Pro)
- Komplete Kontrol A-Series / S-Series Mk2 / M32
 - Fixed: Some buttons did not work (Quantize, Metro, Undo)
- MCU
 - Fixed: Crash in Track mode when toggling between fx and noirmal tracks
 - Fixed: Record button was not always lit correctly
- Push 1/2
 - New: Added duplicating notes in Note, Drum, Drum 4 and Drum 8 sequencers. Keep Dulicate button pressed, select the source note, press empty destination pad(s). The note will be copied with all settings.
 - New: Tempo and Position knobs only show their value as a popup notification. The metronome settings can now be accessed by long-pressing the **Metronome** button.
 - New: Push 2: Only the selected page in user mode is colored white, all others are grey.
 - New: **Duplicate+Scene** duplicates the scene now also in Play, Piano and Drum 64 modes.
 - Fixed: User mode works again
 - Fixed: Modified display colors were not applied after restart
 - Fixed: Layout of Touchstrip mode was not updated to new features on Push 1
 - Fixed: Push 1: Frame mode showed an empty display
- SL MkIII
 - Fixed: Crash when selecting track again to enter device mode

8.60

- Requires Bitwig 3.1+.

- Known Issues
 - User banks are broken since 3.1 (they do not work with the new hardware API).
- AutoColor
 - Fixed: Crashed on startup
- Launchpad
 - New: Drum 4 and Drum 8 Sequencers: draw longer notes in darker color
- Mackie MCU
 - New: Added an explicit setting for devices with only 1 channel (“Has only 1 fader”), e.g. the Behringer X-Touch One. For devices with the normal 8 channels the select button now works again in marker and device mode.
 - New: Send button states for function keys (F1-F5) which turns on the LED if the device has one and supports it (e.g. Behringer X-Touch One).
 - New: Knob LEDs in device mode show only one dot
 - Fixed: Knob speed was too slow
 - Fixed: Knob LEDs were off when panorama was fully left
- Maschine Mikro Mk3
 - Include Bitwig template as Template (Bitwig.ncmm3) again, not the full Memory dump (Bitwig.ncc).
 - You need to load this new template into the Maschine (Bitwig.ncmm3) first (due to changes to the Touchstrip settings).
 - New: Change note repeat period and length via ribbon (MOD: CC1, CC11; PERFORM: Master Volume; NOTES: Note Repeat Period / Length)
 - New: The touchstrip LEDs are updated matching the selected mode.
 - New: Pitchbend modes of touchstrip return to zero setting when finger is released.
 - New: Flipped direction of Pitchbend Down Mode of touchstrip to match the LEDs.
 - New: Added setting “Action for pressing rec armed empty clip”
 - New: Erase+pad deletes scene, clip, track (depending on the selected mode)
 - New: Duplicate+pad duplicates scene, clip, track (depending on the selected mode)
 - New: Browser+pad in Clip Mode opens the browser to load a clip
 - New: Stop+pad in Clip Mode stops the clip. Clips queued to be stopped are now lit in dark green
- Native Instruments Kontrol 1
 - Fixed: Did crash when there was not track in the project
- Push 1/2
 - New: Long press notes in Drum, Drum 4 and Drum 8 Sequencers to edit it.
 - New: Drum 4 and Drum 8 Sequencers: draw longer notes in darker color
 - New: Slow down value changes in note repeat mode
 - New: Change note repeat period and length via ribbon

8.51

- Requires Bitwig 3.1+.
- Launchkey Mini Mk3
 - New: Display info if the Metronome was toggled on/off and the drum sequencer page was changed
 - Fixed: The pad rows of the drum configuration mode were flipped
- Maschine Mikro Mk3
 - Fixed: Displayed Parameter names of row 3 and 4 were flipped

8.50

- Requires Bitwig 3.1+.
- All devices use the new Hardware API
- Removed support for Arturia Beatstep Pro due to too much limitations (use Generic Flexi instead).
- AutoColor
 - Fixed: Auto coloring did not work on added tracks which had the same name as the track which was before at that position.
- APC40
 - New: Changed direction of session-clip/scene scrolling

- Mackie HUI
 - New: Added support for icon Master fader extension
 - New: Insert buttons select track
 - New: Added (HUI QUICK PUNCH) - Toggle Punch In
 - New: Added (HUI IN) - Toggle Punch In
 - New: Added (HUI OUT) - Toggle Punch Out
 - New: Added (HUI ON LINE) - Toggle Audio Engine on/off for current project
 - New: Added (HUI RETURN TO ZERO) - Return the play cursor to the start of the arranger
 - New: Improved unmute/unsolo all tracks
- Native Instruments Kontrol 1
 - New: Improved speed of knobs
 - New: Changed direction of session-clip/scene scrolling
- Launchpad
 - New: Added Poly Sequencer
 - New: Delete + Scene button in Session view deletes the scene
 - New: Shift mode: Enable note repeat and set the note repeat period and length with the pads in the middle
 - New: Sends mode: Display name of sends when selected
 - New: Light buttons brighter when pressed
 - New: Flipped Up/Down button in Device mode
 - New: Changed direction of session-clip/scene scrolling
 - New: Added notification messages to Shift view
 - New: Used several colors in Shift view for easier function identification
 - Fixed: Duplicate did not work on non-pro models
- Maschine Mikro Mk3
 - You need to load the new template into the Maschine (Bitwig.ncc) first
 - New: Use multiple colors on pads
 - New: Added note repeat (long press note view to change settings)
 - New: Pressing the encoder button always toggles between slow/fast value change, except tempo (tap tempo) and browser mode (confirm selection)
- OSC
 - New: The port of the OSC server (“receive on”) can be configured again.
 - New: Added commands for note repeat (/vkb_midi/noterepeat/...)
 - New: Added /track/hasParent {0,1}
- Push 1/2
 - New: Added note repeat, long press Repeat button for configuration settings
 - New: Added cue volume and cue mix to Master mode
 - New: Delete + Track button: Delete the track
 - New: Delete + Scene button (in Play, Piano, Drum 64, Session view): Delete the scene
 - New: Delete + pad in scene play mode: Delete the scene
 - New: Added “Clear Mute/Solo” to drum channel details
 - New: The quantize mode now contains the record quantization configuration as well
 - New: More parameters for note editing
 - New: The note insert/edit MIDI channel can be selected in the Track Details mode and in the document settings
 - New: Buttons are lit brighter when pressed
 - New: Automate button is lit orange (instead of red) when Clip automation is displayed
 - New: Improved unmute/unsolo all tracks
 - New: Changed direction of session-clip/scene scrolling
 - New: Scrolling scenes in scene play view scrolls whole 64 scenes
 - New: User page names can be edited in the document settings
 - Fixed: Push 1: Header text in Master mode was missing
 - Fixed: Push 2: Scenes in scene mode were not immediately updated and not in sync Session Scene view.

- SL MkIII
 - New: Changed direction of session-clip/scene scrolling

7.60

- Requires Bitwig 2.4+.
- Support for Novation Launchpad X
- Support for Novation Launchpad Mini Mk3

7.50

- Requires Bitwig 2.4+.
- Support for Novation Launchkey Mini Mk3
- Launchpad MkII
 - Fixed: The Play and New functions in Shift mode were switched.
- MCU
 - Fixed: Do not set pan mode on fader touch release when volume mode was active before.
- OSC
 - Fixed: OSC did crash on startup
 - Fixed: Calls to /track/x/clip did not work

7.40

- Requires Bitwig 2.4+.
- New: Improved auto-detect of some devices
- Ableton Push
 - New: Prevent to enter a layer which has no devices, previously the container device was selected instead which could be confusing
 - New: Added info to the browser mode about if insert or replace is happening and selected track.
 - New: Add device to layer instead of track if a layer mode is active (but there are still some Bitwig weirdnesses in that area)
 - New: Access to slot chains of devices
 - New: Added aftertouch processing to Drum and Drum 64 mode.
 - Fixed: Blinking on queued clips did not work
- Launchpad Pro/MkII
 - New: All tracks are displayed (incl. fx and master track)
 - New: Shift-mode can now also be accessed from the Session mode. To access the Bird-Eye view of the Session mode long press the Session button.
 - New: Optimized Shift-mode, Scene buttons select (again) the Mix-mode of MkII, they have no function on the Pro. First row of buttons select the length of new clips on both models.
 - New: Pro: Added aftertouch processing to Drum and Drum 64 mode.
 - Fixed: Blinking on queued clips did not work
 - Fixed: Page Left LED indication in Note and Raindrops Sequencer was not correct.
 - Fixed: Play in Shift mode of MkII did not work (triggered toggle loop instead).
 - Fixed: Mixer-LED on MkII was not lit.
 - Fixed: Play-Layout was not set when first time switching between Session and Play.
 - Fixed: Stop-Clip mode could not be activated on MkII
- Maschine Mikro MkIII
 - New: Show info text when Duplicate is enabled
 - New: Added template with required settings to the resources folder.
 - New: Added flip arranger and clip recording option
- MCU
 - New: Added preset for Behringer X-Touch One
 - New: If device or marker mode is active, do not change track with MCU_SELECT (necessary for 1 channel controllers like Behringer X-Touch One)
- Native Instruments Komplete S-MkII, A-series/M32
 - New: You can now set the speed of the knobs in the settings.

7.32

- Requires Bitwig 2.4+.
- Added a help page for the extension. Help button appears now with each instance.
- MCU
 - New: Added new function key option “Toggle use faders like editing knobs”.

7.31

- Requires Bitwig 2.4+.
- Added new scales
- Beatstep Pro
 - Fixed: Some knobs did not toggle their value
- Mackie HUI
 - Fixed: Crash on startup and shutdown if Display was active

7.30

- Requires Bitwig 2.4+.
- APCmini
 - Fixed: Sometimes the pad grid was not drawn after startup, since the APCmini is slow to be ready for receiving commands.
- APC40mkI/mkII, APCmini, Launchpad MkII/Pro, Novation SL, Push
 - Fixed: Deactivate all sequencers if no clip is selected. This caused weird effects if the grid resolution of the sequencer was changed with no clip selected and then a clip was selected.
- Native Instruments Komplete S-MkII, A-series/M32
 - New: The extension is now split up into two. One for the S-series and one for the A-series/M32. You need to add your Kontrol device again.
- Novation SLMkIII
 - New: Notification messages are also displayed on the SL display
 - New: Firmware version is displayed on startup
- Push
 - Fixed: Display a message if no clip is selected in clip mode
 - Fixed: Octave buttons were not updated in sequencer modes.

7.21

- Requires Bitwig 2.4+.
- OSC
 - New: /playbutton - Toggles playback, you can configure the Stop behaviour in the configuration settings
 - Fixed: All /vkb_midi commands did crash

7.20

- Requires Bitwig 2.4+.
- Launchpad Pro
 - New: Added user mode. Press USER button to enter. Scene buttons switch between the 8 pages of 8 parameters.
- Novation Remote SL Mk III
 - New: Added setting to disable the faders (to prevent accidentally changing volume)
- Push
 - New: Session: The octave and page buttons navigate the pages of the session grid
 - New: Second row buttons (buttons above display on Push 2) allows now to toggle between min/max values in User mode.
 - Fixed: Push 2: Notification messages were not shown on the display
- OSC
 - New: Added user parameters

7.10

- Requires Bitwig 2.4+.
- Generic Flexi
 - New: Commands to edit fx tracks. See commands in new category FX Track
 - New: Commands to edit 64 user parameters. See commands in new category User
 - Fixed: *Track: Toggle trackbank* had no effect
- Komplete Kontrol A-Series / M32
 - Fixed: Track name was not displayed
- Push 1/2
 - New: Added User mode. Allows to map 64 parameters. Press USER button to enter. Setup on Push 1 is now Shift+USER.
 - New: Push 1: Show longer track/layer names in Details mode
 - New: Push 1: Indicate volume with one bar when VU is active
 - New: Push 2: Improved layout of transport mode
 - New: Push 2: Only redraw display image if something has changed
 - Fixed: Layer details page did not close automatically when Select-button was released.
 - Fixed: Do not close transport mode when accidentally tempo or position knob is touched.
 - Fixed: Push 1: Layout of panorama on max right
 - Fixed: Push 1: Send modes could not be accessed
 - Fixed: Push 1: NullPointerException if Track mode was active and an effect track was selected in Bitwig

7.05

- Requires Bitwig 2.4+.
- Generic Flexi:
 - New: Commands to set Solo, Mute, Rec Arm, Monitor and Auto Monitor (in addition to toggle).
- Komplete Kontrol MkII
 - New: Added control indication depending on selected mode (volume, pan, send, device parameters)
- Launchpad MkII
 - Fixed: Blinking of playing clips did not work
- MCU
 - Fixed: Volume indication was broken
- Push 1
 - Fixed: Do not send color palette request, which is only working for Push 2

7.04

- Requires Bitwig 2.4+.
- Ableton Push 2
 - Fixed: Improved stability writing the color palette
- Komplete Kontrol MkII
 - New: Added Send mode (CLEAR button to toggle). Edit all sends of the selected channel.
 - New: Add track number to mixer view channels
 - New: Added Recording Option: Toggle Rec Arm State of selected track
 - New: Now, first checks if the selected device on the selected channel is a Komplete Kontrol device, if not the first instrument device is checked. This way you can edit multiple Komplete Kontrol instances on a channel.

7.03

- Requires Bitwig 2.4+.
- All devices
 - New: Moved scale settings to document
- Ableton Push 2
 - New: Set a new color palette for the pad LEDs to be closer to the Bitwig colors.
 - Fixed: The default note view is set to Play again, was Drum View.

- APC40
 - Fixed: All views except Play View were drawn wrong.
- Komplete Kontrol MkII
 - New: Added a parameter/device mode (CLEAR button to toggle)!
- Maschine Mikro MkIII
 - Fixed: Display warning when no device is selected in parameter mode
 - Fixed: Indicate non-existing parameters as “None” in parameter mode
- MCU
 - Fixed: Jogwheel jumped back one step after movement ended
- Novation Remote SL Mk III
 - Fixed: Drawing of track and device modes were wrong when no track was selected (2nd try)
- OSC
 - Fixed: Open Stage Control template produced a crash if the master volume was changed.

7.02

- Requires Bitwig 2.4+.
- Novation Remote SL Mk II
 - Fixed: Drum pads did not work
 - Fixed: Crash displaying send and master track
- Novation Remote SL Mk III
 - New: The browser result name is now shown in two columns
 - Fixed: Drawing of track modes were wrong when no track was selected
 - Fixed: Track could not be added when no track was selected
 - Fixed: Browser mode could crash if a non-existing filter column was selected
 - Fixed: Button long press events caused unnecessary warnings in the log
- OSC
 - New: Added layer tab to Open Stage Control template.
 - New: Added sending of /device/layer/selected/{attributes}
 - Fixed: Some types used “selected” and some “select”. Both can be used now.
 - Fixed: Fixed location of master track in Open Stage Control template for 0.47.1.

7.01

- Requires Bitwig 2.4+.
- Arturia Beatstep
 - Fixed: Caught exception when pads are transposed. Now an error is printed to the console.
- Generic Flexi
 - Fixed: MMC commands with device IDs > 15 did not work.
- Novation SL Mk III
 - New: Route all 16 MIDI channels to Bitwig (not only channel 1)

7.0

- Requires Bitwig 2.4+.
- New: Added support for Novation SL Mk III
- Fixed: scrolling of parameter pages by page bank did not work (e.g. Shift + cursor left/right on Push)
- Ableton Push 2
 - New: Deactivated channels and layers are drawn in dark colors
- Komplete Kontrol Mk II / A-series / M32
 - New: Light record button as well on clip recording and clip overdub

6.4

- Requires Bitwig 2.4+.
- Generic Flexi
 - New: The speed (fast and slow) for relative knob changes can be configured

- New: A command can be assigned to be the Shift button (Global: Shift Button), which gives extra functionality if combined with another control (e.g. Play, Rewind, Forward and Knob Speeds).
- Komplete Kontrol
 - New: Mapping of first Komplete Kontrol parameter is no longer necessary
 - New: Improved automatic lookup

6.3

- Requires Bitwig 2.4+.
- Generic Flexi
 - New: Added setting to store the last selected mode
 - New: MIDI CC is now available as a function destination
- Komplete Kontrol
 - New: Added setting to flip the track/clip navigation of the encoder knob
 - New: Added setting to flip the clip and scene navigation of the encoder knob
 - New: Added setting to set the length of new clips
 - New: Added setting to set the behaviour on transport stop
 - New: Added M32 to the extension name

6.2

- Requires Bitwig 2.4+.
- APC40
 - New: Shift mode stays active until you release the Shift key.
 - Fixed: Clip indicator was not displayed.
- Launchpad Pro
 - Improved 2 colors.
- Komplete Kontrol
 - Fixed: Record option “Record clip” did not start recording when transport was stopped.
 - New: Adapted to protocol version 1.9
- Midi Monitor
 - New: Log system realtime events
 - New: Setting to filter system realtime events
- Push 1/2
 - New: You can now tweak the speed of the knobs in the settings (Workflow -> Knob Speed Normal / Knob Speed Slow)

6.1

- Requires Bitwig 2.4.
- Generic Flexi
 - Fixed: Exception when Send volume was mapped/changed and a FX or the Master track was selected.
- Komplete Kontrol
 - New: Added information about mute state due to soloed track(s)
 - New: Added more selected track information to confirm to updated protocol
 - New: Added scene navigation and play
 - New: Slowed down knob change rate on MkII
- OSC
 - New: You can now configure the value range. So far, this was 128. Now you can increase the range to 1024 or 16384. Note that you also need to configure the widgets in your OSC client accordingly.

6.0

- Requires Bitwig 2.4+.
- Generic Flexi
 - New: Use native dialog for selecting the configuration file.
 - Fixed: Fixed a typo (CC40 was named CC30).

- Komplete Kontrol
 - Switched to new MIDI protocol
 - Support for A-series and M32
- Mackie HUI
 - Support added
- Mackie MCU
 - Fixed: Knob LED was not turned off on non-existing tracks for panorama mode.
- OSC
 - Fixed: Reduced the size of a OSC bundles to stay below 64 Kb, which is the maximum for an UDP packet.
- Push
 - Automation could not be activated if an effect track or the master track was selected.

5.9

- Requires Bitwig 2.4.
- Beatstep
 - Fixed: Track and Device mode selection did not work.
- Maschine Mikro Mk3
 - Fixed: Pan and Send modes could not be switched.
- MCU
 - Display mode names for Track, Volume and Sends. Send modes also display the name of the send.
 - You can flip backwards through the send modes with Shift+Send.

5.8

- Requires Bitwig 2.4.
- Launchpad: Fixed: Switching of Note and Sequencer did not work (only if also Push 1/2 was running)

5.7

- Requires Bitwig 2.4.
- Launchpad
 - New: The Bootloader and Firmware version is now logged to the console
 - New: Pro: The user button acts now like the Shift button
- MCU
 - New: Option + one of the Mute buttons: Deactivate all mutes
 - New: Option + one of the Solo buttons: Deactivate all solos
- Push 1/2
 - New: Select + Mute: Deactivate all mutes
 - New: Select + Solo: Deactivate all solos

5.6

- Requires Bitwig 2.4.
- MCU
 - Fixed: Removed unnecessary clip indication.
- Midi Monitor
 - Fixed: System Exclusive formatting was wrong.
 - Fixed: Check for MMC was wrong.
- OSC
 - Fixed: Track selection did not work when using only “select” and/or did not set 1 as parameter.
 - Fixed: Decimal changes of tempo did not work.
 - Fixed: /device/layer/{1-8}/send/{1-8}/volume and /device/layer/{1-8}/send/{1-8}/volume/touched

5.5

- Requires Bitwig 2.4.

- New: There is now only one version number, the number of DrivenByMoss, and one changes file in the Wiki.
- New: Extension Midi Monitor added
- Fixed: Scene navigation with cursors was broken on most devices
- Push 1/2
 - Fixed: Clip indication was broken

21 Changes - Cockos Reaper

8.97

- All devices
 - New: Project/document specific settings (e.g. Scale or Note Repeat Settings) are now stored with the project.
 - New: There is now a dialog to edit project/document specific settings (click on the Project button or assign an Action key).
- Launchkey Mini Mk3
 - New: Display user pages when switching in user mode
- MCU
 - New: **IMPORTANT**: The device MIDI ports are now ordered left to right, which means if your main device is to the right, it needs to be the last!
 - New: You can configure for each of your MCU devices if it should act like the main device (e.g. enable transport controls; you can have multiple) and has now the option to support the specific Mackie extender protocol.
- OSC
 - New: The bank page size can be configured from 1-200.
- Push 1/2
 - New: Color settings are used in MIDI clip mode. Furthermore, always at least 4 rows are displayed.

8.96

- All devices
 - New: Included PDF manual
 - Fixed: Buttons in the Simulator UI which expect a specific CC value did not work
 - Fixed: Fader/knob touch states were not sent to Reaper
 - Fixed: Some texts were not displayed in the simulator
- APC40 MkII
 - New: Added user mode
- Launchpad
 - Fixed: Do not switch to play mode when changing tracks in Volume, Pan and Send modes.
- MCU
 - New: **Option+Tempo/Ticks** toggles between displaying the time or beats. **Tempo/Ticks** toggles the display of ticks/milliseconds or the current tempo for the last 3 digits. Both are also available in the settings.
 - Fixed: Fixed some issues with fader touch
- Novation SLMkIII
 - New: Added user mode. Long press the UP button and then 8th row button below the display. Page names are configurable in the settings.
- OSC
 - Fixed: /time/str now really sends the time (did send measures before)
- Push 1/2
 - New: Cancel notification message when changing modes
 - Fixed: Position now really shows the time (did display measures before)

8.95

- APC / APCmini
 - Fixed: Fixed a crash in Raindrop sequencer
- Generic Flexi
 - New: Added option to send the LED value even when command is received from the device.
- Komplete Kontrol Mk 1
 - Fixed: Modulation wheel did trigger button press of the main encoder
- Komplete Kontrol Mk 2
 - Fixed: Simulator view did not work

- Launchpad
 - New: Poly Sequencer: Currently played sequencer notes are also lit on the play area
 - Fixed: Note mode menu could not be called up from any drum mode
 - Fixed: Fixed a crash in Raindrop sequencer
- Mackie HUI:
 - Fixed: New command could not be triggered from footswitch
 - Fixed: Simulator GUI did not work
 - Fixed: DO not light LEDs for non-existing tracks
- Push 1/2
 - New: Poly Sequencer: Currently played sequencer notes are also lit on the play area
 - New: When Automation is turned off it is set to Trim/Read instead of Read.
 - Fixed: Shift+New did also activate Record but should not
 - Fixed: Fixed a crash in Raindrop sequencer
 - Fixed: Push 2: Clip Mode in midi grid layout did not show the notes

8.94

- All devices
 - Fixed: Creating sequencer notes was broken
- Generic Flexi
 - New: Commands to edit 64 user parameters (controls track fx parameters). See commands in new category User.
 - New: The MIDI channel for the keyboard (or pads if it is a pad controller) can be explicitly set (previously it was fixed to channel 1). It can also be turned off or set to all. If a MIDI note is mapped to a function on this MIDI channel, the note is blocked from being played. Note: If you have selected All for the channel the note is blocked on all channels!
 - New: Modulation Wheel (CC 01), Sustain Pedal (CC 64) and Pitchbend can now automatically be routed to Reaper. You can now turn them off individually if you want to map them to something else.
- Launchpad
 - New: Option to remove the master track from the track bank (requires restart of extension).
 - New: Pro: Disabled Delete button if used without button combination to prevent accidental deletions.
 - New: Pro: Added user mode (controls track fx parameters). Press USER button to enter. Scene buttons switch between the 8 pages of 8 parameters.
- OSC
 - New: Added user parameters (controls track fx parameters).
 - Fixed: Changing output server/port did still not work.
- Push 1/2
 - New: Added User mode (controls track fx parameters). Allows to map 64 parameters. Press USER button to enter. Setup on Push 1 is now Shift+USER.

8.93

- All devices
 - Fixed: Pressing OK button in configuration dialog removed the extension.

8.92

- All devices
 - New: Added version information to Windows DLL
 - Fixed: Temporary freezes of the Reaper UI with heavy CPU plugins with lots of parameters
 - Fixed: Shutdown was not fully completed after JVM was stopped.
- Launchpad
 - Fixed: Note selection was activated when coming from a non-note mode but should not.

8.91

- All devices
 - Fixed: Pitchbend and Modulation Wheels did not work.
- Generic Flexi
 - New: Improved handling of Program Change as source. For trigger commands also a *button up* is executed; for continuous commands the value of the PC is sent (and not always replaced with 127).
 - New: Patch Bank Selection, see Generic Flexi documentation for more info. But this is currently not that helpful with Reaper since all settings are global.
- Launchpad
 - New: Easier selection of note modes. Pressing the note button brings up a menu where you can directly select the note/sequencer mode. First row (from top) selects play modes, 3rd row drum modes and 5th row sequencer modes.
 - New: Changing note length does now also work in Poly Sequencer
 - New: Inverted back the clip/scene scroll direction (was also not conform with the LED lighting)
 - Fixed: Displaying longer notes did not work in Poly Sequencer
- Maschine Mikro 3
 - Fixed: Removed restriction that drum octave could only be changed if a clip was active.
- MCU
 - New: Group/Write Automation changed to trigger Latch automation
 - New: Support for Read/Trim automation mode
- Push 1/2
 - New: Support for *Read/Trim* and *Latch Preview* automation modes
 - New: Inverted back the clip/scene scroll direction
 - New: Changing note length does now also work in Poly Sequencer
 - Fixed: Displaying longer notes did not work in Poly Sequencer

8.80

- All devices
 - New: The project start time, which can be configured in the project settings, is now added to the displayed time.
 - Fixed: jna-platform.jar file was missing. E.g. caused the file dialog in the Generic Flexi to crash.
 - Fixed: Blinking pads in simulator UI did not work
 - Fixed: Mapping of CC commands to specific values was broken. Mainly affected Kontrol keyboards.
 - Fixed: Scene/clip scrolling LEDs not indicated correctly. Session birds eye view navigation did not work.
- Akai APCmini
 - New: Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
- Akai APC40 / APC40mkII
 - New: Change note length or create long notes in the Sequencers (Note, Drum) by pressing a note pad and then a pad right of it.
 - New: Improved scrolling of browser columns
 - Fixed: Browser crashed when activated
- Generic Flexi
 - New: Added new function: **Clip: Quantize**
 - New: Added functions for note repeat
 - New: Added functions for transposing the keyboard
 - Fixed: Configured knob speed settings were not set on startup
- Komplete Kontrol A-Series / M32
 - Fixed: Configured knob speed settings were not set on startup
 - Fixed: Crashes when scrolling clip page
- Launchpad
 - New: Virtual faders support 4 velocity steps (on all models)
 - New: Activates hardware play mode again when extension is stopped
 - New: Change note length or create long notes in the Sequencers (Note, Drum, Drum 4, Drum 8)

- by pressing a note pad and then a pad right of it.
- New: Launchpad Pro: Duplicate notes in Drum 4 and Drum 8 sequencers
- Fixed: Color of front LED was wrong when mode was changed
- Fixed: Cursor left was not lit correctly in Drum 4 and Drum 8 mode
- Push 1/2
 - New: Change note length or create long notes in the Sequencers (Note, Drum, Drum 4, Drum 8) by pressing a note pad and then a pad right of it.
 - Fixed: Master mode only showed up shortly when Master volume knob was touched
 - Fixed: Configured knob speed settings were not set on startup

8.70

- All devices
 - New: Stop (or toggle playback) also disables record
 - New: Improved autodetect: Do not add a device if one of the midi ins/outs is already in use. Refresh midi devices before executing the autodetect.
 - New: Configuration window is now a top level window
 - New: Added simulator window for each device
 - Fixed: Some LEDs did not update correctly
 - Fixed: Duplicating media items from the session view did always duplicate the selected media items.
- Beatstep
 - New: Easier switching between note selection and step editing in sequencers. Turning knob left selects play/note select, turning it right selects step editing.
 - Fixed: Value change on some knobs were flipped (e.g. scrolling browser).
 - Fixed: The Note Sequencer used the drum mapping and octave shifting.
 - Fixed: Pads sometimes lit with wrong color after pad was pressed
 - Fixed: Pads sometimes lit with wrong color after leaving Shift mode
 - Fixed: Browser mode was canceled when Shift was released
- Push 1/2
 - Fixed: Filter active sensing warnings from log console
 - Fixed: Push 1: Frame mode showed an empty display
- Launchpad:
 - New: Non-Pro models: Pressing the Delete and Duplicate pads in shift mode activates the related mode. Leaving the shift mode and entering session mode allows then to delete/duplicate clips and tracks. After deleting/duplicating an item the delete/duplicate mode is turned off.
 - New: Turn of panorama lights for non-existing tracks, instead of showing them centered
 - Fixed: Launchpad X was not correctly using the velocity faders
 - Fixed: Fader scaling was wrong (except Launchpad Pro)
- Komplete Kontrol A-Series / S-Series Mk2 / M32
 - Fixed: Some buttons did not work (Quantize, Metro, Undo)
- MCU
 - Fixed: Record button was not always lit correctly
- Push 2
 - New: Added duplicating notes in Note, Drum, Drum 4 and Drum 8 sequencers. Keep Duplicate button pressed, select the source note, press empty destination pad(s). The note will be copied with all settings.
 - New: Tempo and Position knobs only show their value as a popup notification. The metronome settings can now be accessed by long-pressing the **Metronome** button. Note: play position text is only updated when playback is active!
 - Fixed: Layout of Touchstrip mode was not updated to new features on Push 1
 - Fixed: Play view was not active on a newly added track
- SL MkIII
 - Fixed: Crash when selecting track again to enter device mode

8.60

- All devices
 - New: Color drum pads in the tracks color
- AutoColor
 - Fixed: Crashed on startup
- Launchpad
 - New: Drum 4 and Drum 8 Sequencers: draw longer notes in darker color
- Mackie MCU
 - New: Added an explicit setting for devices with only 1 channel (“Has only 1 fader”), e.g. the Behringer X-TOUCH One. For devices with the normal 8 channels the select button now works again in marker and device mode.
 - New: Send button states for function keys (F1-F5) which turns on the LED if the device has one and supports it (e.g. Behringer X-Touch One).
 - New: Knob LEDs in device mode show only one dot
 - Fixed: Knob speed was too slow
 - Fixed: Knob LEDs were off when panorama was fully left
- Maschine Mikro Mk3
 - Include Bitwig template as Template (Bitwig.ncmm3) again, not the full Memory dump (Bitwig.ncc).
 - You need to load this new template into the Maschine (Bitwig.ncmm3) first (due to changes to the Touchstrip settings).
 - New: Change note repeat period and length via ribbon (MOD: CC1, CC11; PERFORM: Master Volume; NOTES: Note Repeat Period / Length)
 - New: The touchstrip LEDs are updated matching the selected mode.
 - New: Pitchbend modes of touchstrip return to zero setting when finger is released.
 - New: Flipped direction of Pitchbend Down Mode of touchstrip to match the LEDs.
 - New: Added setting “Action for pressing rec armed empty clip”
 - New: Erase+pad deletes scene, clip, track (depending on the selected mode)
 - New: Duplicate+pad duplicates scene, clip, track (depending on the selected mode)
 - New: Browser+pad in Clip Mode opens the browser to load a clip
 - New: Stop+pad in Clip Mode stops the clip. Clips queued to be stopped are now lit in dark green
- Native Instruments Kontrol 1
 - Fixed: Did crash when there was not track in the project
- Push 1/2
 - New: Long press notes in Drum, Drum 4 and Drum 8 Sequencers to edit it.
 - New: Drum 4 and Drum 8 Sequencers: draw longer notes in darker color
 - New: Slow down value changes in note repeat mode
 - New: Change note repeat period and length via ribbon
 - Fixed: Fixed Length button was lit when volume mode was active

8.51

- All devices
 - Fixed: Log output was not visible on startup.
 - Removed support for Arturia Beatstep Pro due to too much limitations (use Generic Flexi instead).
- APC40
 - New: Changed direction of session-clip/scene scrolling
- Mackie HUI
 - New: Added support for icon Master fader extension
 - New: Insert buttons select track
 - New: Added (HUI QUICK PUNCH) - Toggle Punch In
 - New: Added (HUI IN) - Toggle Punch In
 - New: Added (HUI OUT) - Toggle Punch Out
 - New: Added (HUI ON LINE) - Toggle Audio Engine on/off for current project
 - New: Added (HUI RETURN TO ZERO) - Return the play cursor to the start of the arranger
 - New: Improved unmute/unsolo all tracks
- Native Instruments Kontrol 1

- New: Improved speed of knobs
- New: Changed direction of session-clip/scene scrolling
- Launchpad
 - New: Added Poly Sequencer
 - New: Delete + Scene button in Session view deletes the scene
 - New: Shift mode: Enable note repeat and set the note repeat period and length with the pads in the middle
 - New: Sends mode: Display name of sends when selected
 - New: Light buttons brighter when pressed
 - New: Flipped Up/Down button in Device mode
 - New: Changed direction of session-clip/scene scrolling
 - New: Added notification messages to Shift view
 - New: Used several colors in Shift view for easier function identification
 - Fixed: Duplicate did not work on non-pro models
- Maschine Mikro Mk3
 - You need to load the new template into the Maschine (Bitwig.ncc) first
 - New: Use multiple colors on pads
 - New: Added note repeat (long press note view to change settings)
 - New: Pressing the encoder button always toggles between slow/fast value change, except tempo (tap tempo) and browser mode (confirm selection)
- OSC
 - New: Added commands for note repeat (/vkb_midi/noterepeat/...)
 - New: Added /track/hasParent {0,1}
- Push 1/2
 - New: Delete + Scene button (in Play, Piano, Drum 64, Session view): Delete the scene
 - New: Delete + pad in scene play mode: Delete the scene
 - New: The quantize mode now contains the record quantization configuration as well
 - New: The note insert/edit MIDI channel can be selected in the Track Details mode and in the document settings
 - New: Buttons are lit brighter when pressed
 - New: Changed direction of session-clip/scene scrolling
 - New: Scrolling scenes in scene play view scrolls whole 64 scenes
 - Fixed: Push 1: Header text in Master mode was missing
- SL MkIII
 - New: Changed direction of session-clip/scene scrolling

8.40

- New: Do not display note feedback from muted media items
- New: Switched to “MIDI Arpeggiator” instead of “MIDI Note Repeater” for Note Repeat. This requires a fix on the MIDI Arpeggiator JS plugin to make the note length work: Increase the note length step resolution from 0.1 to 0.001 like this: slider2:1<0.01,1,0.001>Note Length
- New: Support for Novation Launchpad X
- New: Support for Novation Launchpad Mini Mk3
- Fixed: Controller instance was not stopped when deactivated
- Launchpad
 - New: Shift mode: Enable note repeat and set the note repeat period and length with the pads in the middle
- Maschine Mikro Mk3
 - New: Added note repeat settings
- OSC
 - New: Added commands for note repeat
- Push 1/2
 - New: Added note repeat, long press Repeat button for configuration settings
 - New: The note insert/edit MIDI channel can be selected in the Track Details mode and in the

8.30

- New: Speed up browsing filter columns
- Fixed: Last item in a browser filter column could not be selected.
- Support for Novation Launchkey Mini Mk3
- Launchpad MkII
 - Fixed: The Play and New functions in Shift mode were switched.
 - Fixed: Sequencers were not available
- MCU
 - Fixed: Do not set pan mode on fader touch release when volume mode was active before.
- OSC
 - Fixed: OSC did crash on startup
 - Fixed: Calls to `/track/x/clip` did not work

8.21

- Fixed: Endless recursion when accessing clips

8.20

- New: Improved auto-detect of some devices. Added CoreMidi4J prefix support on MacOS.
- Ableton Push
 - New: Added info to the browser mode about if insert or replace is happening and selected track.
 - New: Added aftertouch processing to Drum and Drum 64 mode.
 - Fixed: Blinking on queued clips did not work
- Launchpad Pro/MkII
 - New: All tracks are displayed (incl. fx and master track)
 - New: Shift-mode can now also be accessed from the Session mode. To access the Bird-Eye view of the Session mode long press the Session button.
 - New: Optimized Shift-mode, Scene buttons select (again) the Mix-mode of MkII, they have no function on the Pro. First row of buttons select the length of new clips on both models.
 - New: Sequencers are now available.
 - New: Pro: Added aftertouch processing to Drum and Drum 64 mode.
 - Fixed: Blinking on queued clips did not work
 - Fixed: Page Left LED indication in Note and Raindrops Sequencer was not correct.
 - Fixed: Play in Shift mode of MkII did not work (triggered toggle loop instead).
 - Fixed: Mixer-LED on MkII was not lit.
 - Fixed: Play-Layout was not set when first time switching between Session and Play.
 - Fixed: Stop-Clip mode could not be activated on MkII
- Maschine Mikro MkIII
 - New: Show info text when Duplicate is enabled
 - New: Added template with required settings to the resources folder.
 - New: Added flip arranger and clip recording option
- MCU
 - New: Added preset for Behringer X-Touch One
 - New: If device or marker mode is active, do not change track with `MCU_SELECT` (necessary for 1 channel controllers like Behringer X-Touch One)
- Native Instruments Komplete S-MkII, A-series/M32
 - New: You can now set the speed of the knobs in the settings.

8.11

- All devices
 - New: Detect button for auto-detecting connected devices.
 - New: Many performance improvements: Some updates were put on a slower thread, track chunk only is read and analysed if playback is stopped, GUI only gets created if dialog is opened, ...

- Fixed: Layout of Debug dialog
- MCU
 - New: Added new function key option “Toggle use faders like editing knobs”.
- Native Instruments Komplete S-MkII, A-series/M32
 - Fixed: Definition files were mixed up and therefore the devices did not work properly
- Push 2
 - Fixed: Display preview window did not update and window layout was wrong

8.10

- All devices
 - New: Added new scales
 - New: Added a Debug dialog where you can test to deactivate update routines
 - Fixed: Creating clips did not start recording.
 - Fixed: Send values were always sent for Send 1.
 - Fixed: Only use send envelopes when active
- APCmini
 - Fixed: Sometimes the pad grid was not drawn after startup, since the APCmini is slow to be ready for receiving commands.
- APC40mkI/mkII, APCmini, Launchpad MkII/Pro, Novation SL, Push
 - Fixed: Deactivate all sequencers if no clip is selected. This caused weird effects if the grid resolution of the sequencer was changed with no clip selected and then a clip was selected.
- Beatstep Pro
 - Fixed: Some knobs did not toggle its value
- Mackie HUI
 - Fixed: Crash on startup and shutdown if Display was active
- Native Instruments Komplete S-MkII, A-series/M32
 - New: The extension is now split up into two. One for the S-series and one for the A-series/M32. You need to add your Kontrol device again.
- Novation SLMkIII
 - New: Notification messages are also displayed on the SL display
 - New: Firmware version is displayed on startup
- OSC
 - New: /playbutton - Toggles playback, you can configure the Stop behaviour in the configuration settings
 - Fixed: All /vkb_midi commands did crash
- Push
 - Fixed: Display a message if no clip is selected in clip mode
 - Fixed: Octave buttons were not updated in sequencer modes.

8.00

- All devices
 - Fixed: Changing track selection did not correctly adjust the track bank page on the device (except Push)
- Komplete Kontrol A-Series / M32
 - Fixed: Track name was not displayed
- Novation Remote SL Mk III
 - New: Added setting to disable the faders (to prevent accidentally changing volume)
- Push 1/2
 - New: Changed layout of Repeat configuration settings (long press Repeat button)
 - New: Changed the layout of the quantize/groove mode
 - New: Implemented editing of note parameters: length and velocity
 - New: Session: The octave and page buttons navigate the pages of the session grid
 - New: Push 1: Show longer track/layer names in Details mode
 - New: Push 1: Indicate volume with one bar when VU is active

- New: Push 2: Improved layout of transport mode
- New: Push 2: Only redraw display image if something has changed
- Fixed: Stepping out of track folders did skip a level
- Fixed: Do not close transport mode when accidentally tempo or position knob is touched.
- Fixed: Push 1: Groove mode crashed
- Fixed: Push 1: Layout of panorama on max right
- Fixed: Push 1: Send modes could not be accessed
- Fixed: Push 2: Notification messages were not shown on the display

7.05

- Generic Flexi:
 - New: Commands to set Solo, Mute, Rec Arm, Monitor and Auto Monitor (in addition to toggle).
- Launchpad MkII
 - Fixed: Blinking of playing clips did not work
- Push 1
 - Fixed: Do not send color palette request, which is only working for Push 2

7.04

- All devices
 - New: Note feedback is implemented. Playing notes from MIDI clips are shown in play and drum views.
 - Fixed: Parameter updates are only slowed down if automation writing is enabled
 - Fixed: Setting automation mode sometimes addressed the wrong track
- Ableton Push 2
 - Fixed: Improved stability writing the color palette
- Komplete Kontrol MkII
 - New: Added Send mode (CLEAR button to toggle). Edit all sends of the selected channel.
 - New: Add track number to mixer view channels
 - New: Added Recording Option: Toggle Rec Arm State of selected track
 - New: Now, first checks if the selected device on the selected channel is a Komplete Kontrol device, if not the first instrument device is checked. This way you can edit multiple Komplete Kontrol instances on a channel.

7.03

- All devices
 - New: Reflect automation changes on device (Volume, Pan, Mute, Send Volume)
 - New: Support for displaying and setting the color of the master track.
 - New: Support for Automation modes on master track.
 - Fixed: Writing Automation did not always work
- Ableton Push 2
 - New: Set a new color palette for the pad LEDs and improved the algorithm to calculate the closest available color.
 - Fixed: The default note view is set to Play again, was Drum View.
- APC40
 - Fixed: All views except Play View were drawn wrong.
- Komplete Kontrol MkII
 - New: Added a parameter/device mode (CLEAR button to toggle)!
- Maschine Mikro MkIII
 - Fixed: Display warning when no device is selected in parameter mode
 - Fixed: Indicate non-existing parameters as “None” in parameter mode
- MCU
 - Fixed: Jogwheel jumped back one step after movement ended
- Novation Remote SL Mk III

- Fixed: Drawing of track and device modes were wrong when no track was selected (2nd try).
- Fixed: Another crash in the browser.
- OSC
 - Fixed: Open Stage Control template produced a crash if the master volume was changed.

7.02

- Novation Remote SL Mk II
 - Fixed: Drum pads did not work
 - Fixed: Crash displaying send and master track
- Novation Remote SL Mk III
 - New: The browser result name is now shown in two columns
 - Fixed: Drawing of track modes were wrong when no track was selected
 - Fixed: Track could not be added when no track was selected
 - Fixed: Browser mode could crash if a non-existing filter column was selected
 - Fixed: Button long press events caused unnecessary warnings in the log
 - Fixed: Keyboard did not work
 - Fixed: Implemented a workaround for button LEDs being lit when knob or fader values were changed on Windows (bug with MIDI Sysex in JDK).
- OSC
 - New: Added layer tab to Open Stage Control template.
 - New: Added sending of /device/layer/selected/{attributes}
 - Fixed: Some types used “selected” and some “select”. Both can be used now.
 - Fixed: Fixed location of master track in Open Stage Control template for 0.47.1.
- New: Updated to OpenJdk 11.0.3+7
- New: Faster calculation of browser results
- Fixed: Navigating parameter pages with cursor keys did not work
- Fixed: flush was still called when a device was set to be deactivated

7.01

- Fixed: Reaper INI was not read on Linux.
- Arturia Beatstep
 - Fixed: Caught exception when pads are transposed. Now an error is printed to the console.
- Generic Flexi
 - Fixed: MMC commands with device IDs > 15 did not work.
- Novation SL Mk III
 - New: Route all 16 MIDI channels to Reaper (not only channel 1)

7.0

- New: Added support for Novation SL Mk III
- Fixed: scrolling of parameter pages by page bank did not work (e.g. Shift + cursor left/right on Push)
- Ableton Push 2
 - New: Deactivated channels and layers are drawn in dark colors
- Komplete Kontrol Mk II / A-series / M32
 - New: Light record button as well on clip recording and clip overdub

6.4

- Generic Flexi
 - New: The speed (fast and slow) for relative knob changes can be configured
 - New: A command can be assigned to be the Shift button (Global: Shift Button), which gives extra functionality if combined with another control (e.g. Play, Rewind, Forward and Knob Speeds).
- Komplete Kontrol
 - New: Mapping of first Komplete Kontrol parameter is no longer necessary
 - New: Improved automatic lookup
- Changed storing of Reaper settings to prevent corruption of ini file.

6.3

- Generic Flexi
 - New: Added setting to store the last selected mode
 - New: MIDI CC is now available as a function destination
- Komplete Kontrol
 - New: Added setting to flip the track/clip navigation of the encoder knob
 - New: Added setting to flip the clip and scene navigation of the encoder knob
 - New: Added setting to set the length of new clips
 - New: Added setting to set the behaviour on transport stop
 - New: Added M32 to the extension name
- Fixed: Navigation from and to master track was reversed.

6.2

- APC40
 - New: Shift mode stays active until you release the Shift key.
 - Fixed: Clip indicator was not displayed.
- Launchpad Pro
 - Improved 2 colors.
- Komplete Kontrol
 - Fixed: Record option “Record clip” did not start recording when transport was stopped.
- Midi Monitor
 - New: Log system realtime events
 - New: Setting to filter system realtime events
- Push 1/2
 - New: You can now tweak the speed of the knobs in the settings (Workflow -> Knob Speed Normal / Knob Speed Slow)
- Fixed: Did crash Reaper on startup if UserPlugins folder was located in a path with non-ASCII characters.

6.1

- Generic Flexi
 - Fixed: Exception when Send volume was mapped/changed and a FX or the Master track was selected.
- Komplete Kontrol
 - New: Added information about mute state due to soloed track(s)
 - New: Added more selected track information to confirm to updated protocol
 - New: Added scene navigation and play
 - New: Slowed down knob change rate on MkII
- OSC
 - New: You can now configure the value range. So far, this was 128. Now you can increase the range to 1024 or 16384. Note that you also need to configure the widgets in your OSC client accordingly.
- Fixed: NullPointerException on hierarchical track navigation
- Fixed: A Jar file was missing in the 6.0 release.
- Fixed: Toggling Note Repeat did not work

6.0

- Generic Flexi
 - New: Use native dialog for selecting the configuration file.
 - Fixed: Fixed a typo (CC40 was named CC30).
- Komplete Kontrol
 - Switched to new MIDI protocol
 - Support for A-series and M32
- Mackie HUI
 - Support added

- Mackie MCU
 - Fixed: Knob LED was not turned off on non-existing tracks for panorama mode.
- OSC
 - Fixed: Reduced the size of a OSC bundles to stay below 64 Kb, which is the maximum for an UDP packet.
- Push
 - Automation could not be activated if an effect track or the master track was selected.

5.91

- OSC
 - Fixed: Reduced the size of a OSC bundles to stay below 64 Kb, which is the maximum for an UDP packet.

5.90

- Beatstep
 - Fixed: Track and Device mode selection did not work.
- Maschine Mikro Mk3
 - Fixed: Pan and Send modes could not be switched.
- MCU
 - Display mode names for Track, Volume and Sends. Send modes also display the name of the send.
 - You can flip backwards through the send modes with Shift+Send.

5.80

- Launchpad
 - Fixed: Switching of Note and Sequencer did not work (only if also Push 1/2 was running)

5.70

- Launchpad
 - New: The Bootloader and Firmware version is now logged to the console
 - New: Pro: The user button acts now like the Shift button
- MCU
 - New: Option + one of the Mute buttons: Deactivate all mutes
 - New: Option + one of the Solo buttons: Deactivate all solos
- Push 1/2
 - New: Select + Mute: Deactivate all mutes
 - New: Select + Solo: Deactivate all solos

5.60

- MCU
 - Fixed: Removed unnecessary clip indication.
- Midi Monitor
 - Fixed: System Exclusive formatting was wrong.
 - Fixed: Check for MMC was wrong.
- OSC
 - Fixed: Track selection did not work when using only “select” and/or did not set 1 as parameter.
 - Fixed: Decimal changes of tempo did not work.
 - Fixed: /device/layer/{1-8}/send/{1-8}/volume and /device/layer/{1-8}/send/{1-8}/volume/touched

5.50

- New: Integrated DrivenByMoss 5.5
 - New: There is now only one version number, the number of DrivenByMoss, and one changes file in the Wiki.
 - New: Extension Midi Monitor added
 - Fixed: Scene navigation with cursors was broken on most devices

- Ableton Push / Push 2 11.04
 - * Fixed: Clip indication was broken

5.30

- New: Integrated DrivenByMoss 5.30
 - Added new Midi Monitor extension.
 - Renamed Utilities extension to Auto Color
- Fixed: Removed stretching of dialog configuration widgets when only a view elements are present.

5.20

- New: Integrated DrivenByMoss 5.20
 - Ableton Push / Push 2 11.04
 - * New: Use Shift+Octave Up/Down in Drum Sequencer modes to move the pads by 4.
 - * Fixed: Marker mode was broken.
 - Akai APC40 / APC40mkII 5.20
 - * New: Changed Nudge- to Undo and Nudge+ to Redo.
 - * New: Flipped functionality of “Detail View” (is now “Toggle plugin window”) and Shift+“Details View” (is now “Step through the layout perspectives”).
 - * New: Drum sequencer: The highlighted grid in the drum machine now only show the 12 pads. The scene buttons 1/2 move the pad view by 4. The scene buttons 4/5 move the pad view by 12 (previously 16).
 - * Fixed: “Step through the layout perspectives” did not work on some display profiles.
 - Generic Flexi 2.2
 - * New: Added commands to control Browser filter columns 7 and 8.
 - * New: Added Browser mode.
 - * New: Added absolute mode for toggle buttons.
 - * New: Added support for MMC.
 - * New: Added “Transport: Rewind” and “Transport: Fast Forward”
 - * New: Select buttons in Parametermode select parameter pages instead of devices.
 - * Fixed: Removed duplicated function “Transport: Set Crossfader”, use “Master: Crossfader” instead.
 - * Fixed: Mode knobs did always use relative mode 1, even if 2 or 3 was selected.
 - * Fixed: Values of Track-, Volume- and Parametermode were not reflected correctly back to the device.
 - * Fixed: Prevent console warnings when values go out of bounds in relative modes.
- New: Added an action to open the DrivenByMoss extension window (search for “DrivenByMoss” in the action list).
- New: The DrivenByMoss extension and configuration windows can now be closed with the Escape key.

5.10

- New: Integrated DrivenByMoss 5.10
 - Native Instruments Komplete Kontrol 1 S25, S49, S61, S88 1.1
 - * New: Improved displayed scale colors. Only the root note is now displayed in the track color. All other notes are colored in white. Played note are in green or red if recording. Furthermore, sequenced notes are also displayed in green.
 - * New: If a track with a drum device is selected the keyboard LEDs display the according slot colors.
 - * New: Keyboard range is displayed on screen and display if changed.
 - * New: SHIFT+BACK - Toggles monitor on the selected track.
 - * New: SHIFT+ENTER - Toggles rec arm on the selected track.
 - Generic Flexi 2.1
 - * New: Added command: “Device: Parameters”
 - Generic Utilities 1.0 added (AutoColor)
- New: Controllers can be deactivated so they do not use any resources when they are not connected.

- New: Speed up of Java/C++ communication; fixes lag of controller playing
- New: Menu for adding controllers is now hierarchical
- New: Improved folder navigation
- New: Implemented sending of Escape and Enter key to Reaper (used by MCU protocol, only Windows & macOS)
- New: Implemented transport restart function (used by Generic Flexi and OSC)
- Fixed: Toggling of plugin window did not work
- Fixed: MIDI editor is no longer closing when executing quantize from a controller, if it was already open.

5.021

- Fixed: Widgets in configuration dialog did not always update their values correctly.
- Fixed: The integrated Java VM did not contain the accessibility module. Therefore, DrivenByMoss crashed on system with enabled accessibility support.

5.01

- Fixed: “error -99” on MacOS with Push 2.
- Fixed: NullPointerException in Color Picker, if Cancel is selected.

5.00

- Integrated DrivenByMoss 5.0
 - Open Sound Control (OSC) protocol - 6.12
 - * Fixed: Potential synchronisation issue when sending OSC messages.
 - Generic Flexi - 2.0
 - * New: Completely new settings user interface
 - * New: Support for modes: Track, Volume, Panorama, Send 1-8, Parameters
 - * New: Support for using Pitchbend as a controller
 - * New: Added command: “Master: Crossfader”
 - * Fixed: Blocking notes which are mapped to a command did only work after restart.
 - * Fixed: “Send value to device” did always send on midi channel 1.
- Bundled Java Virtual Machine for easier installation

4.03

- Integrated DrivenByMoss 4.03
 - Ableton Push / Push 2 - 11.03
 - * Fixed: Fixed resetting of Push 2 display colors.
 - Novation Launchpad Pro & MkII - 3.45
 - * Fixed: Transposing the piano view was broken
- Fixed: New tracks with no name did sometimes not turn up until given a name

4.02

- Integrated DrivenByMoss 4.02
 - Ableton Push / Push 2 11.02
 - * New: Mute and Solo work now in all modes (not only in track modes).
 - * Fixed: Fixed a crash in the Browser.
- Fixed: The track for setting the automation mode was off by 1.
- Fixed: Komplete Kontrol 2 plugin browsing and selection works now.

4.01

- Integrated DrivenByMoss 4.01
 - Ableton Push / Push 2 11.01
 - * New: Push 2: You can now use Delete+Touch knob in the Setup mode to reset the values to its default.
 - Open Sound Control (OSC) protocol 6.11

- * Fixed: Changed midi channel range for /vkb_midi to 1-16 to be consistent to all other numberings, which start with 1. Furthermore, fixed the documentation which indicated 0-16.
- Novation Launchpad Pro & MkII 3.44
 - * Fixed: Flipped session view triggered the wrong clips
 - * Fixed: Temporary modes Rec Arm, Track Select, Mute, Solo and Stop Clip did not return to previous views.
- Fixed: Setting sequencer “loops” was broken.
- Fixed: Push 2: Changing values in Setup mode was buggy.

4.00

- Integrated DrivenByMoss 4.00
 - Mackie MCU - Changes 2.63
 - * Fixed: Crash if Marker mode was selected and Assignment display was enabled.
 - Native Instruments Komplete Kontrol 2 S49, S61 * Changes 1.20
 - * Fixed: Mute and Solo did not work on Hybrid tracks
 - Maschine Mikro Mk3
 - * Initial release

3.31

- New: Clip Loop parameter turns on/off the media items “Loop item source” parameter.
- Fixed: Recording Track Automation did not work.

3.30

- New: Integrated DrivenByMoss 3.30.
- Fixed: Push 2: Clip piano roll: Note texts could not be seen when notes were black.
- Fixed: Scrolling of clips did not work.

3.20

- New: Integrated DrivenByMoss 3.20.
- New: Repeat can be enabled (this uses an Arp in the channel insert). Long press Repeat button to set the speed.
- New: Using ‘New’ to create a clip does not start recording anymore for easier use with sequencers.
- Fixed: Creating a new clip did not set the selection state correctly.

3.02

- Fixed: Scrolling tracks on Push 1/2 was broken when folders are in the project.

3.01

- Fixed: Tracks without a name did not show up.
- Fixed: New clip did sometimes not work.
- Fixed: Notes in Sequencer were not updated when clip was deselected and selected again.

3.00

- New: Replaced the Reaper EEL backend with a C++ implementation.
- New: Support for clips
- New: Support for scenes
- New: Support for markers
- New: Support for sequencers

2.10

- New: If supported by the Java/OS platform the application is run as a tray icon. Closing the app minimizes it to the tray. Double click the tray icon to show it again. Right click on the tray icon to show the context menu with the options to show the application or to exit it. If Auto-run is enabled, the app is automatically minimized on startup.

- New: The console window is no longer shown on startup.
- New: 64 drum pad view for Ableton Push and Novation Launchpad Pro / MkII.
- New: Bank page is now automatically adjusted on controller if changed in Reaper.
- Fixed: Midi In-/Output were not correctly restarted when Configuration dialog was closed.
- Fixed: Push 2 preview display window was still drawn when hidden.
- Fixed: Push 2 preview display window produced OutOfMemoryExceptions after a while.

2.03

- Fixed: The Reaper start path was not stored.

2.02

- Fixed: Could not start Reaper when spaces are included in the path.

2.01

- New: Added more logging information for loading Reaper INI files

2.00

- New: Initial release after switching to Java