

SK2

SMART KNOBS 2

MANUAL



Legal Stuff

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Help Support SK2

Smart Knobs 2 came into existence in 2018 and since then there has been a small team of people working on it. With this release it is finally available to everyone and we're very excited about that and showing exactly what Smart Knobs 2 can do. While a lot of work has been put in by many people, there is one who's work and effort has been the foundation of SK2 and his name is **Leon Bradley**.

Leon has worked tirelessly on this since the fall of 2018 until now and while those of us on Team SK2 have tried to donate as much as we can to support his work and efforts, it still falls terribly short of someone who has committed so much to this software.

We would like to encourage each and every one of you who use SK2 on a regular basis to help us in supporting Leon and donate what you can. This software is really the culmination of everything I've wanted as a media composer my entire career and having it available to use with the features I've always wanted has been life changing. Leon Bradley has been the reason for that and we sincerely hope you can help Leon and us continue the journey forward.

Help support SK2 here:

[Help Support SK2 Now](#)

TJ Lindgren

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Welcome To SK2

So what exactly is Smart Knobs 2? The idea for SK2 started with the fact that most controllers don't do what you want. Especially as a media composer, no controller out there does all the things we need and even hacking incredibly expensive controllers doesn't get you there. For the longest time, we've all been using midi controllers with fixed CC assignments on fixed faders to write CC data. Which becomes incredibly complex when you have different instruments and sample libraries that all have different assignments. For example, with an instrument like Omnisphere it uses CC11 for volume instead of CC7. In the old way of working, this meant assigning one fader for CC7 and another to CC11 and switching faders when you need to send a different CC.

But what if you had a system where CC assignments and mappings could change per instrument or track? So that on a track with Omnisphere you could map CC11 to fader 1 and then switch to another track and map CC7 to fader 1. This is the main idea behind SK2 – dynamic mappings. So you can customize each instrument and track and map them exactly how you want. Also, gone are the days of marking CC assignments in tape on your controller to remember what they are. Scribble strips follow all of your assignments so you always know clearly what a fader or encoder is currently assigned to. Like the mappings, all of the scribble strips are dynamic, meaning when the assignment changes, so does the scribble strip.

We have designed SK2 to work primarily with the Behringer X-Touch and X-Touch Extender. While you may attempt to use any controller with SK2, we highly recommend the X-Touch and are taking advantage of things like colored scribble strips that you won't find on other controllers. MCU controllers will be able to use all the features of SK2 except the colored scribble strips. With other midi controllers there will be features that are not available. We encourage you to watch some of the SK2 videos to see how it looks working with the X-Touch and feel very confident if you are using one you will be very pleased with the workflow.

MIDI Hardware Controller Requirements

Using an XTouch with SK2

Smart Knobs 2 was designed primarily for use with an **XTouch** and/or **XTouch Extender** controller. SK2 is supplied with a pre-built control map for each, and thus makes getting started with SK2 very straightforward.

XTouch

To use the supplied XTouch control map - the XTouch should be put into **XCTL** mode before setting up with SK2. This is the only mode on the controller that allows colored scribble strips to be utilized.

Please note: the XTouch must be connected via its standard MIDI DIN ports due to restrictions with using XCTL mode. I.e. you have to use an old fashioned MIDI cables.

If you wish to connect the XTouch via USB, then you cannot use the provided XCTL control map (you will need to create your own using the Control Map Creator script), and will lose the ability to use colored scribble strips (they will be white).

Xtouch Extender

To use the supplied XTouch Extender control map - the Extender should be put into **CTRL+REL** mode.

The extender can be connected via USB or standard MIDI DIN ports.

Using different controllers with SK2

For a controller to be compatible with Smart Knobs 2 it should meet some basic requirements.

- Ideally the controller should be **MCU** compatible. By this - we mean that the controls on the controller should communicate via standard **MIDI Note, CC and Pitch** messages.
- If your controller has scribble strips - then in order to have these working with SK2 - they should follow MCU standards and be updateable via **SYSX** messages. The format of these messages can be set up in the **Control Map Creator** script supplied with SK2.
- The controller should provide any combination of **motorized faders, standard encoders, and toggle buttons**. Static pots and non-motorized faders are not suitable for use with SK2.
- **Buttons** on the controller must be able to be set up so that they send both an 'on' message when pressed and an 'off' message when released. Many controllers will allow you to configure the buttons to work like this - but they may not be set up like this as default.
- SK2 provides 3 relative modes for encoders:
 - **Relative 1:** Encoder sends a value of 65 or more for positive increment (65 being a single positive step), and a value of 63 or less for a negative increment (63 being a single negative step).
 - **Relative 2:** Encoder sends values of 65-127 for positive steps, and 0-64 for negative steps.
 - **Relative 3:** Encoder sends values of 0-64 for positive steps, and 65-127 for negative steps.
- If none of the relative modes work with your controller's encoders - then you may be able to set the encoder to work in **absolute** mode - so you should use the absolute setting when creating the control map for your controller.

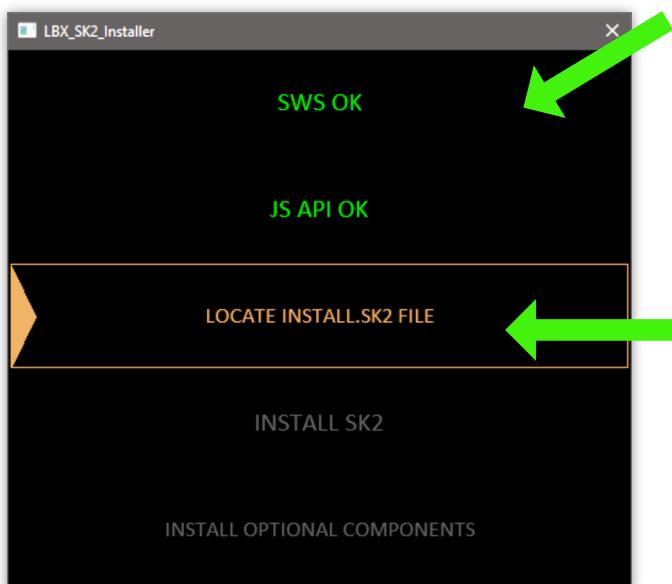
You will need to use the **Control Map Creator (CMC) script** to generate an SK2 control map for your device. Click the button to watch a video tutorial on how to use the CMC script.



SK2 Installation Instructions

Download and unzip [the SK2_Installer.zip file](#).

Open Reaper and load the **LBX_SK2_Installer.lua** script file from the unzipped folder into Reaper's action list and run it.

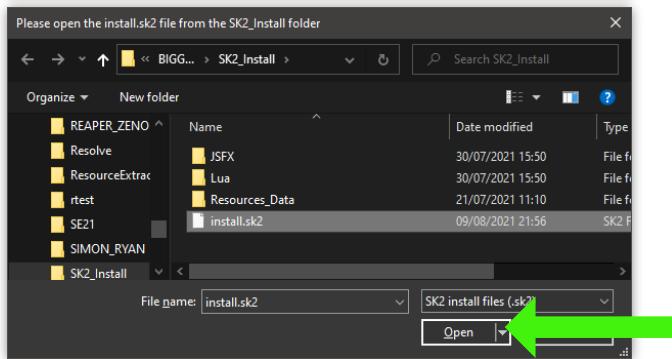


1. Check both SWS and JS API are installed and OK. If either of the top 2 boxes are RED - click on them to go to their respective pages to get them installed.

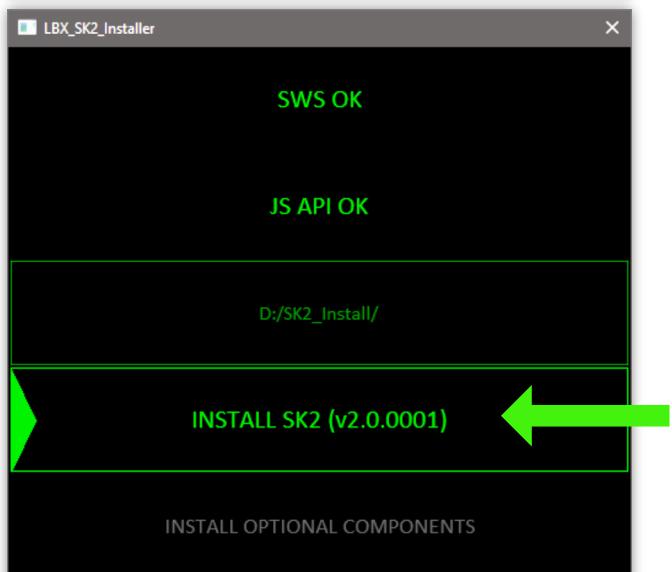
Restart the installer script once both extensions are installed and working.

When both the top boxes are GREEN:

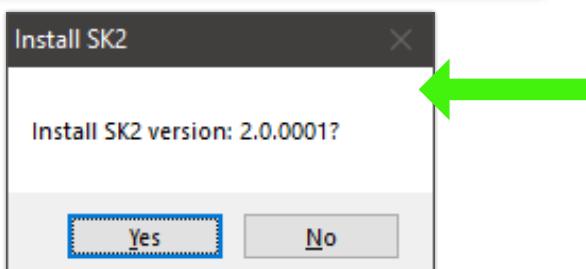
2. Click on the LOCATE INSTALL.SK2 FILE button.



3. Use the file browser to locate and load the Install.sk2 file within the downloaded SK2_Install folder.



4. Click on the INSTALL SK2 (vX.X.XXXX) button.



5. Click Yes to install SK2.

Follow any on screen prompts to complete the installation.

Setting Up SK2 With Your Controller

Once you have installed SK2 with the LBX_SK2_Installer.lua script, please watch the video below to get a good rundown on how to setup your hardware with SK2.

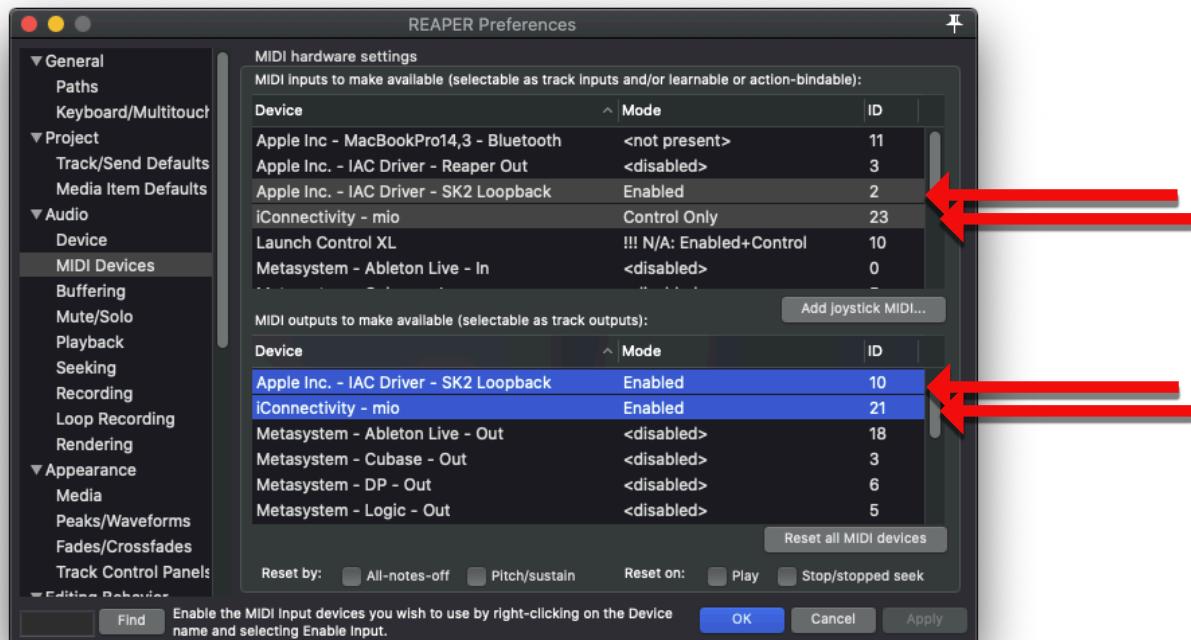
Watch the SK2 Setup Tutorial

How to initially set up SK2:

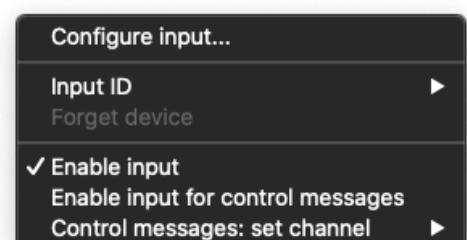


MIDI Settings in Reaper

Setting up the MIDI devices in Reaper is crucial. In the example below, we have an IAC Driver “SK2 Loopback” set up in the Mac (red arrows). On a PC you should use [LoopMIDI](#) or similar. With regards to the X-touch, you’ll need a hardware MIDI cable I/O (**not USB**). Below we used the [iConnect - mio](#). Make sure you have “enabled” and “Control Only” to match your setup as seen below:



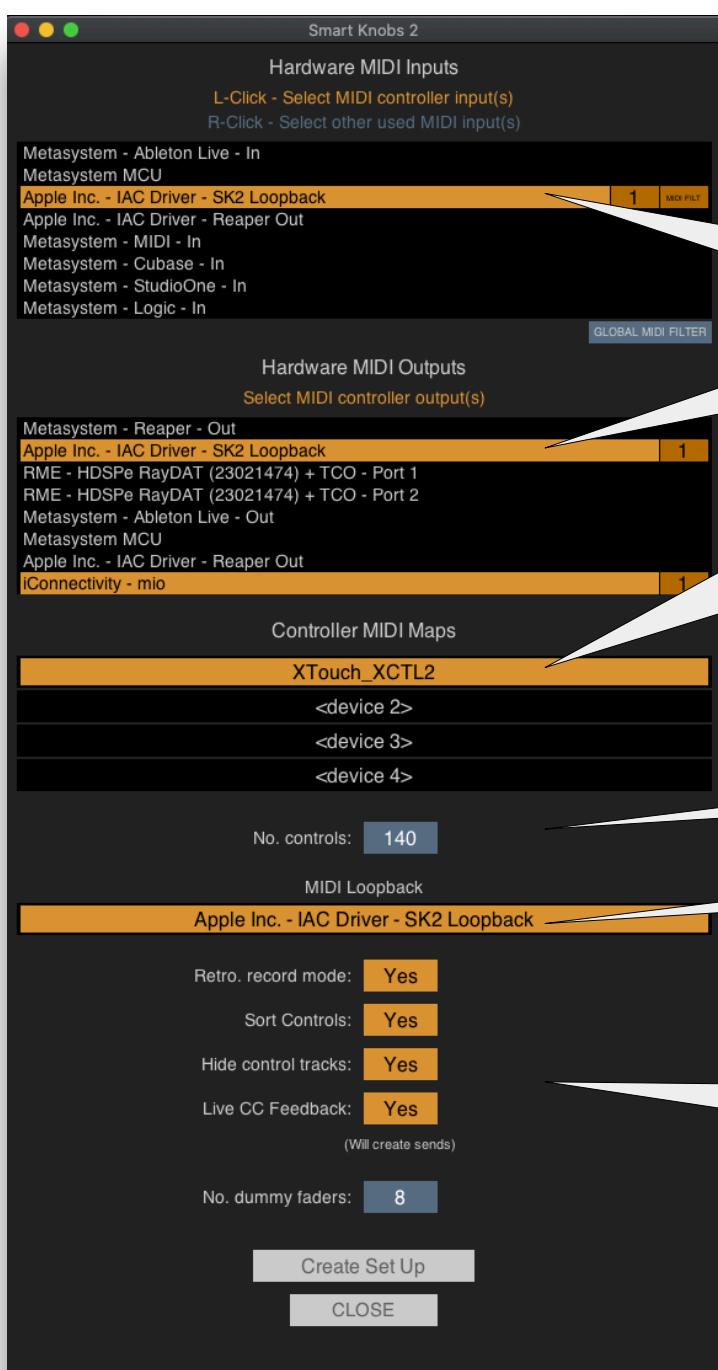
When you **Right-Click** on your device, choose the appropriate (as seen above) option in the dialog:



Hardware MIDI Inputs Page

When you start SK2 you want to go to this page. In certain cases SK2 will default to this page (if it senses it needs setup). Otherwise, simply **Left-Click on the Settings button** and you will get something as seen below. When we mention “iConnectivity - mio”, you can replace that with whatever hardware MIDI

interface you are using with your controller hardware.



Select your SK2 MIDI Input assignments and (in this case SK2 Loopback and iConnectivity - mio (off screen)).

Select your SK2 MIDI Output assignments and (in this case SK2 Loopback and iConnectivity - mio).

Make sure your Controller MIDI map is the supported hardware. In this example it is the X-Touch. You can have multiple devices selected. For example, if you have the X-Touch Extender.

Shows the sum of all the controls set up in the selected Control Maps.

Below that you will see your Loopback MIDI.

A good place to start is to replicate these settings (to the left). If you don't want your fader to move on every CC during playback, then select NO for Live CC Feedback.

NOTE: It is a good idea to make sure your Loopback MIDI port (eg. IAC on Mac or LoopMIDI on PC) is named as “SK2 Loopback” or similar to avoid confusion.

NOTE: If you find that the hardware is not communicating to SK2, the first thing you should try is:

**Right-Click settings > Refresh All Device Handshakes
> Reset Devices**

If this does not help - go into the Settings screen again - check the settings are correct and click the Create Set Up button again.

Video Tutorials

SK2 Setup Tutorial

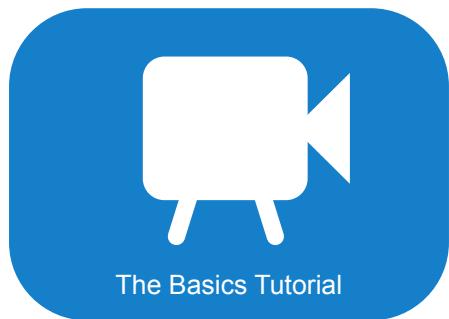
How to initially set up SK2:



More to come later...

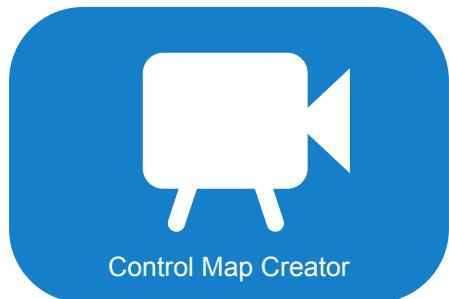
SK2 The Basics Tutorial

This tutorial goes through basic principles of how to use SK2. I.E. Layers and assignments:



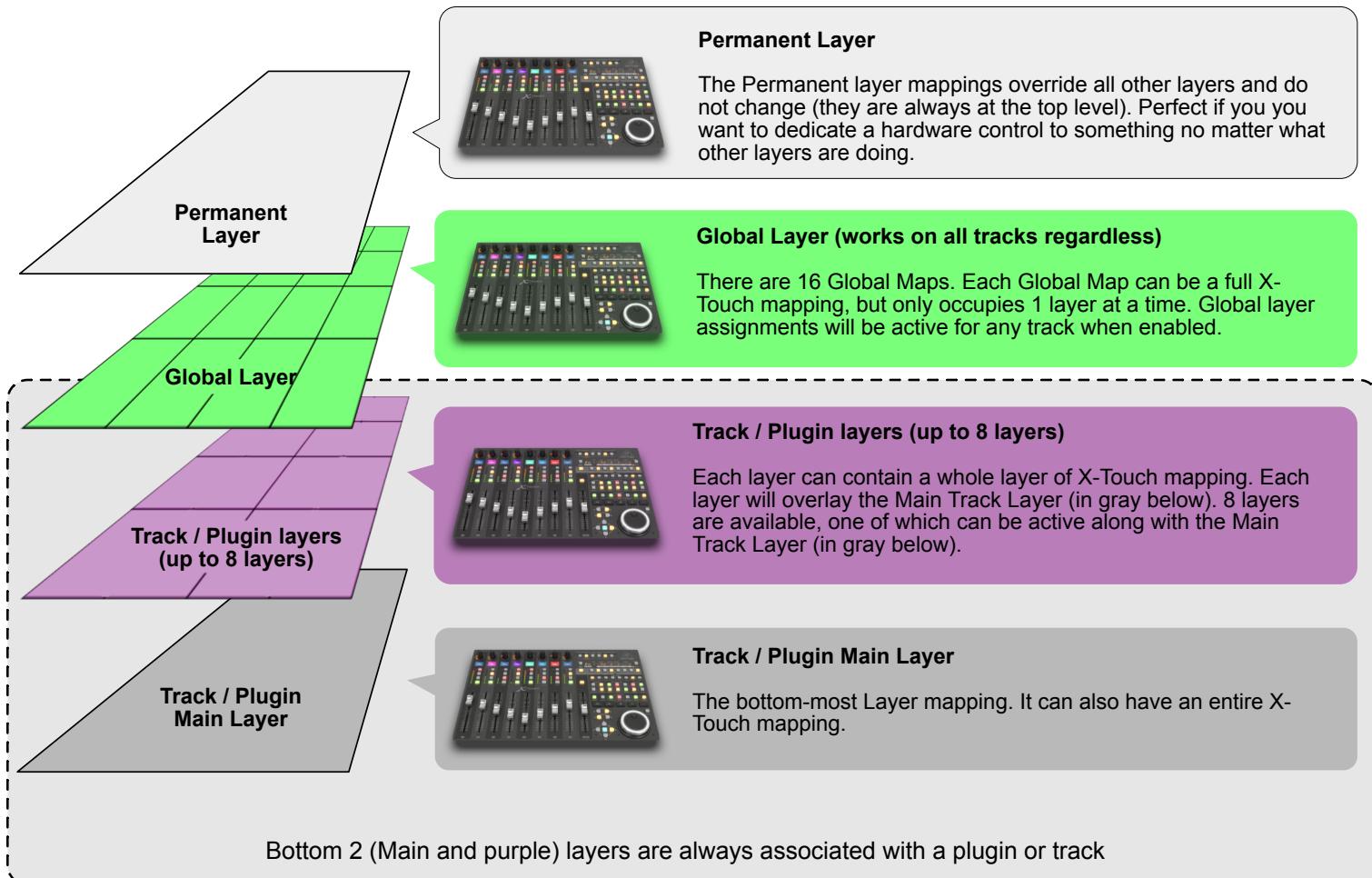
SK2 Control Map Creator Tutorial

How to create a control map to enable a controller to work with SK2:



Layers Overview

SK2 allows you to have multiple “Layers” comprised of a mapping or multiple mappings. A “map” is simply how you mapped functionality to your hardware via SK2. The diagram below illustrates the different layers and their names that will be used through the manual.



NOTE:

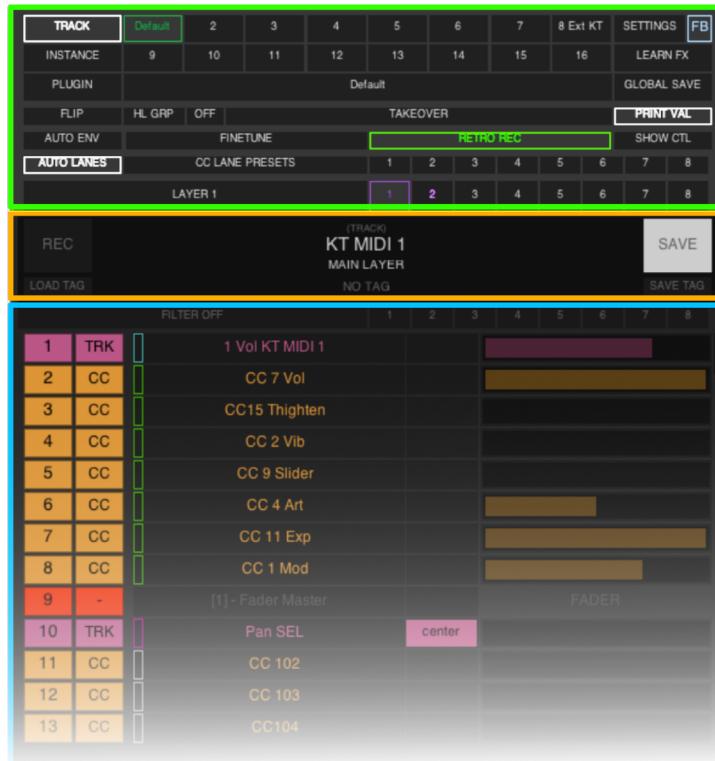
Each layer assignment that has been mapped to a specific control will override the same control beneath it!

Basically - the bottom layer and purple layer - think of them as one big map - they are ALWAYS saved together. If you make a change to any purple layer - when you hit save - it saves the main layer and all purple layers. So the purple layers are just an extension of the main layer - always. And when you create a default map - it includes both the current main layer AND purple layers.

A 'default map' is always a main layer and it's associated purple layers – all 8 (or 12 really - but 8 accessible via the GUI). So any track that is using the default map will always have the main layer and purple layers that were saved using the menu Save As Default Map option. You cannot save a purple layer separately to a main layer and vice-versa.

Smart Control Window

The Smart Knobs 2 window is your home base when using SK2. From here you can set up all your mappings (with the use of the Properties editor). In essence, you could think of the Smart Knobs 2 Window as being split into 3 main sections:



Layer Control and Functions Section:

This area allows you to control the various active layers and their behavior. They are synced to your hardware device so you always know what your current state is.

There are also buttons to activate and configure various SK2 functions such as AUTO ENV, AUTO LANES, FINETUNE, PRINT VAL.

Current Focused Map:

This shows you what track or plugin is focused in SK2, the name of the active layer, what type of layer, whether tags are being used.

Includes also the SAVE button to save track/plugin maps, access to the TAG system, and the REC button.

The Map Assignments List:

This is where you will find all the hardware interface controls in a list form. You can use the filter system at the top of this section to display which controls are displayed in list form.

Click on the slot number box to select the slot.

Right-Click on the assignment type box to clear the assignment.

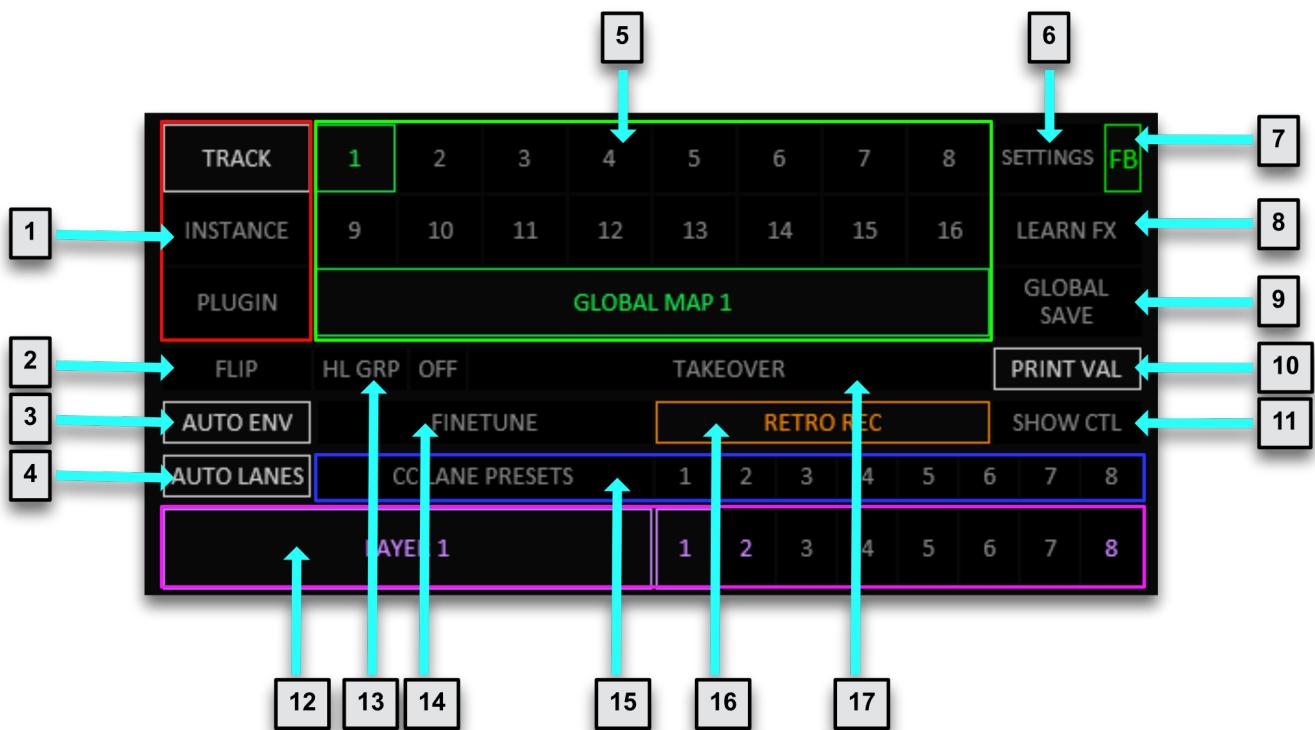
Click on the control/assignment name to open up the Assignment Properties window - where you can create and edit assignments.

Note: If you close this window you will in essence turn off the SK2 script and your X-Touch or other controller will no longer communicate with SK2 and Reaper.

Make sure to watch the Control Map Creator video. That will guide you how to assign your Hardware controller buttons, knobs and sliders to SK2.



Layer Control and Functions Section



1. FOCUS MODE SELECT buttons:

TRACK MODE: Map is loaded depending on the name of the focused track in Reaper.
INSTANCE MODE: Map is loaded depending on the focused Plugin name.
PLUGIN MODE: Map is loaded depending on the focused Plugin type (module name).

2. FLIP button: Swaps fader and encoder assignments.

3. AUTO ENV button:

Left-Click - Activate/deactivate automatic envelope mode.
Right-Click - open context menu to access automatic envelope settings.

When enabled - automatic envelope mode will display only tracks and envelopes that are currently assigned within SK2 (depending on the currently selected automatic envelope mode). Tracks and envelopes will change visibility in conjunction with activating the REC button. When REC is disabled - tracks and envelopes will return to the state they were in before activating the REC button.

Default mode: Current view and assigned lanes. All currently visible tracks in addition to SK2 assigned tracks will be visible. Only SK2 assigned envelope lanes will show.

Mode 1: Assigned lanes only. Only tracks with SK2 assigned envelope lanes will show - along with those assigned lanes.

Mode 2: Assigned lanes and all used lanes. As mode 1 - but also tracks with used envelope lanes and those used lanes will show.

Mode 3: Current view and touched lanes. All currently visible tracks and envelopes in addition to SK2 assigned tracks will be visible. Only touched envelope lanes will show.

4. AUTO LANES button:

Left-Click - Activate/deactivate automatic CC lanes mode.

Right-Click - open context menu to access automatic lanes settings.

When enabled (in the MIDI editor) the visible CC lanes in the editor will be determined by the Auto Lanes settings.

You can set fixed lanes to have specific lanes always visible.

You can set the number of visible dynamic lanes - these are lanes that will show SK2 assigned CC's that are not included in the fixed lanes.

There are internal assignments that can be used to cycle through pages of dynamic lanes.

5. GLOBAL LAYER controls.

The numeric buttons are used to activate/deactivate the 16 different global maps. You can **Right-Click** these buttons to copy/paste each global map. The large button underneath the numeric buttons shows the currently selected global map. **Left-Clicking** will activate/deactivate the current global map. **Right-Clicking** will bring up a menu where you can rename the current global map - as well as setting a couple of other options:

Solo global map when active: When enabled - this option disables the underlying track/plugin layer assignments when the global map is active.

Set global map mode: This option sets the mode that the global map uses (TRACK/INSTANCE/PLUGIN)

6. SETTINGS button: Opens the settings screen for setting up SK2 hardware ports and other settings. For a full list of the Settings menu, [go here](#).

7. FB (Feedback) button: Indicates the current feedback mode.

Left-Click toggles the mode between blue and orange/green (depending on Live CC Feedback settings).

Green = Full feedback enabled - CC's and envelopes will feedback to the controller - even during playback.

Orange = Partial feedback enabled - only envelopes will feedback during playback (not CC's).

Blue = Feedback only when transport is stopped.

Right-Click opens the context menu.

8. LEARN FX button: When activated - you can learn plugin parameters by moving a plugin parameter in the plugin GUI, then Ctrl+click on the slot control name in the assignments list.

The assignment will be made to the highest active layer from the Main/Additional(purple) and Global layers.

The scope of the learned parameter depends on the layer it is assigned to.

Learn FX only currently works in TRACK mode.

9. GLOBAL SAVE button: When clicked - all assigned global layer slots will be saved to the currently selected/active global map. The button will highlight green when a global map slot has been changed and requires saving.

If you do not save the global map before changing to a different global maps - all changes will be lost.

10. PRINT VAL button: When enabled - when you record a MIDI item, any active default values for SK2 assigned CC's will be written to the start of the item. Right-Clicking will insert a 1 measure MIDI item on the selected track at the edit cursor - containing any active default values for assigned CC's.

11. SHOW CTL button: Toggles between displaying the assignment or control name in the assignments list.

12. ADDITIONAL LAYERS controls.

The numeric buttons select/activate the associated additional layer for the currently loaded track/plugin map.

The Right-Click context menu for these buttons provides copy/paste layer and clear options.

The larger button on the left displays the currently selected additional layer name and toggles the active layer between the main layer and the selected additional layer. The Right-Click context menu allows you to clear all additional layers, rename the selected additional layer, and provides copy/paste all layer options.

13. Highlight Group button: When active - this highlights (flashes) the buttons in each button group (for control maps that have the groups set up). Using the right-hand button (or internal assignments) - you can cycle between the different groups. When active - assignments for the highlighted group will be displayed in the scribble strips (for controllers that have scribble strips).

14. FINETUNE button: Toggles SK2 fine-tune mode on/off. When enabled - faders will be centered - and moving the faders will make smaller adjustments to parameters (determined by the fine-tune range - which can be changed via the fine-tune button Right-Click menu, or internal assignments).

15. CC LANE PRESET controls: These buttons provide a preset system for the AUTO LANES functionality.

16. RETRO REC button: Provides settings for the retrospective record functionality. Retro record must have been activated in the Settings screen when creating the SK2 setup. The Right-Click context menu provides the following options:

Merge with existing item: If the captured midi overlaps with an existing item - the MIDI data will be merged into that item.

Extend captured/merged item: The captured/merged into MIDI item will be extended back to start on a measure and an additional measure will be added to the end of the item if room.

Overdub notes: When merging with an existing item - existing MIDI notes will be retained when active. **When inactive** - existing MIDI notes will be deleted from the captured area.

Time selection mode: MIDI data will only be captured within the time selection area. Compensate track playback offset:

Send last CC value when fader released: This option can help to prevent ramps between the last captured CC value and any existing CC.

Auto quantize after capture: Quantize captured MIDI data.

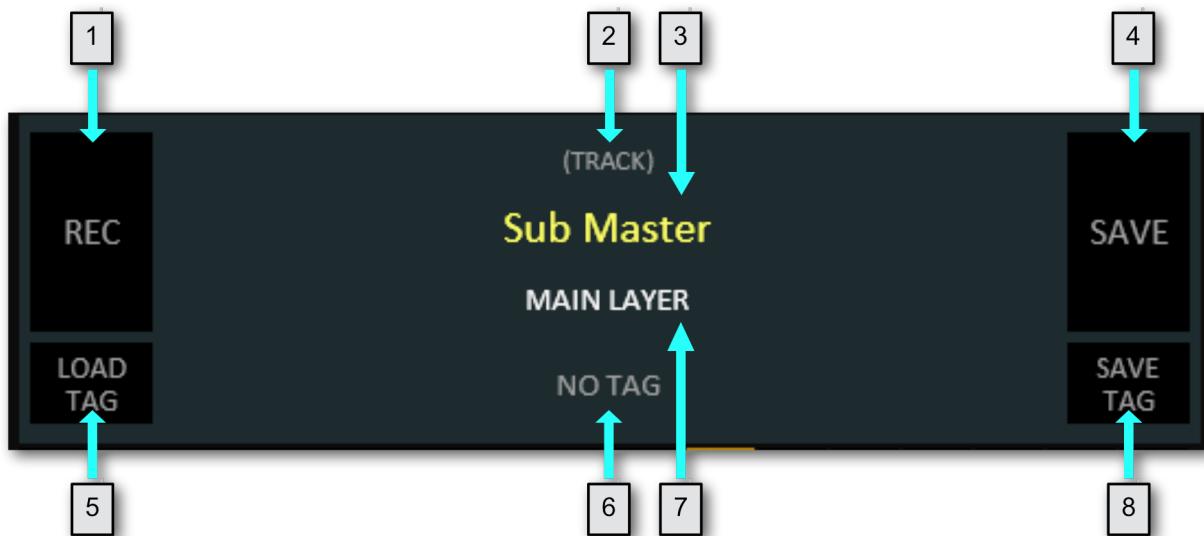
Quantize strength: Strength of quantize when auto quantize option is enabled.

Restore selected item/s after capture: When active - retains any selected items after capture. When inactive - the newly captured items will be selected.

Start transport on fader touch (track mode): When active - start playback as soon as you touch a fader on your controller.

17. TAKEOVER button: Allows you to set up quick 'takeover' track parameter assignments and assign them to specific fader/encoder channels on your controller. The Right-Click context menu is dependent on the active takeover slot. When takeover is disabled - the menu is not available.

Current Focused Map Section



1. REC button: The REC button triggers SK2 RECORD mode. Activating record mode will set the focused track's (and any other tracks referenced by current assignments) automation mode according to the setting in the REC button context menu (Right-click).

If the AUTO ENV button is enabled - then activating the REC button will also cause visible tracks and envelopes to change depending on current active SK2 assignments and the chosen automatic envelope setting.

Likewise, disabling the REC button will return automation mode to the non-record setting chosen in the REC context menu, and visible tracks and envelopes back to their previous visibility.

2. Focus Map Type Indicator: This indicates whether a track or plugin (shows track and plugin type) has focus. If TRACK mode is selected - and the **default map** is loaded - then it will indicate this.

3. Track/Plugin Name Indicator: This shows the currently focused track or plugin name. Clicking on this will toggle the focused track (or plugin's track) between *Latch-Preview* and *Trim/Read* or *Read* automation modes. The track/plugin name will change to purple when *Latch-Preview* is selected.

4. SAVE button: This button saves any changes made to the track/plugin mappings (main layer+additional (purple) layers).

The Right-Click SAVE button context menu provides various Copy/Paste and Clear functions, as well as Load/Save map settings, and Default Map options.

5. Load Tag button: (TRACK mode only). This button opens the **track tag list** - where you can assign a **tag map** to the focused track.

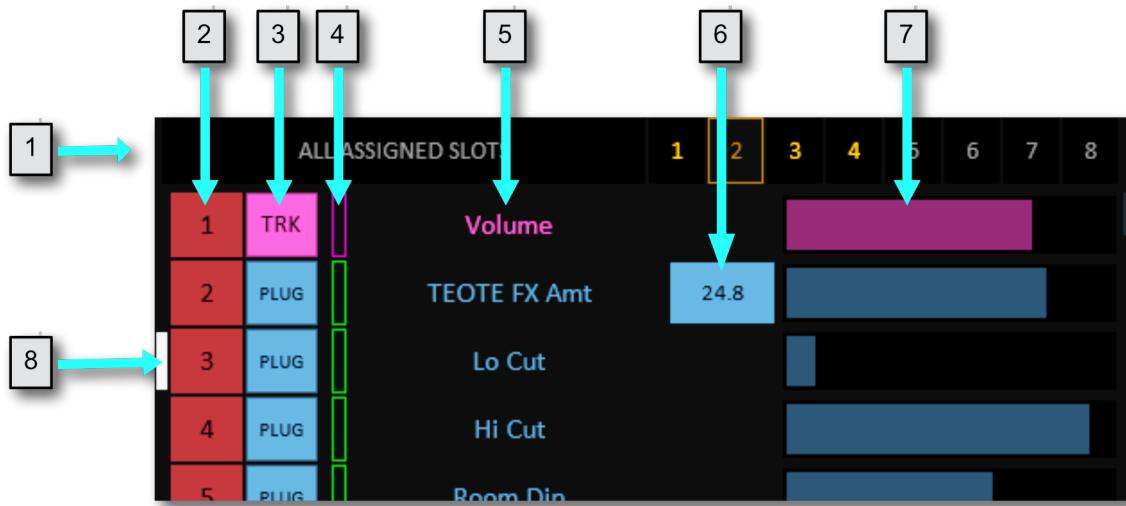
The Right-Click context menu provides show/clear/copy/paste/rename functions.

6. Current Tag Indicator: The current tag indicator shows the **tag map** assigned to the focused track (if any). Clicking on the indicator will open the **track tag list**.

7. Active Layer Indicator: This shows the current active layer - either the main layer or one of the additional purple layers.

8. Save Tag button: (TRACK mode only). This button saves current assignments from the main and additional (purple) layers to the active **tag map**.

Map Assignments List



1. Assignment List Filter section: Shows the current selected filter, whether it's active. Add additional filter options via the Right-Click context menu on the main left-most button.

Use the numeric filter select buttons Right-Click context menu to save presets.

2. Slot Number: Indicates the slot number. Click on this to select the slot. Right-Clicking provides access to remapping functions (a way to remap a control's assignments to another control - if you are unfortunate enough to suffer a control failure).

3. Assignment Type: Indicates the type of assignment in the slot. Right-Clicking will delete the assignment.

4. Scribble Strip Color Indicator: Shows the scribble strip color for the assignment. Clicking on this cycles through the available colors. Generally only applicable for XTouch or Extender controllers.

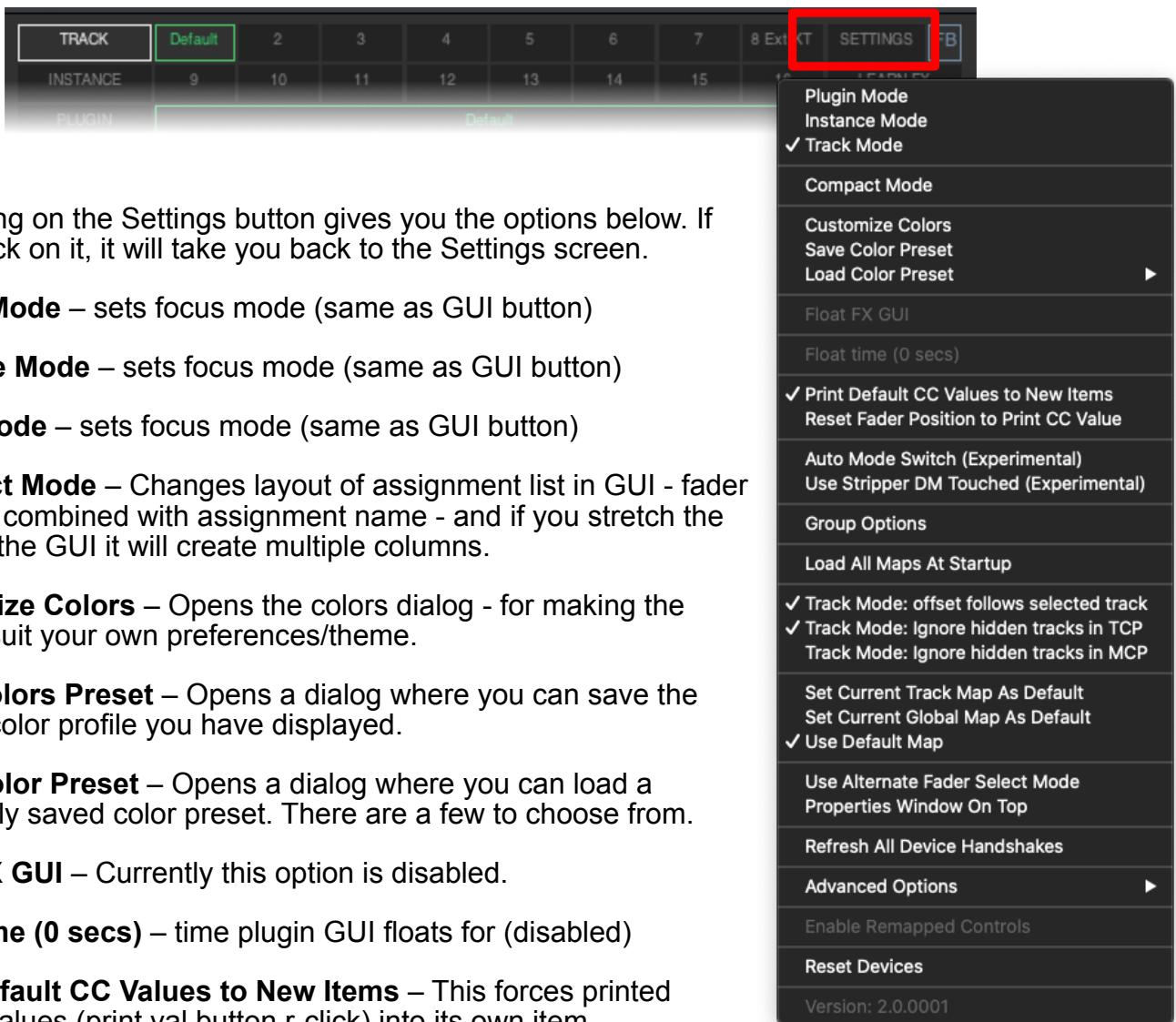
5. Assignment Name: Shows the name of the assignment in the slot. Clicking will open the Assignment Properties window - where you can edit the assignment.

6. Print Value: Shows the print/default value for the assignment if one has been set up. CC print values can be disabled by clicking the box. If the box is faded - then the print value is not active - which can depend on whether the Print Val button is active or the assignments print value has been disabled.

7. Assignment Value: Shows as a fader type control indicating the value of the assignment if the control type is continuous. Shows as an on/off button for button type controls. You can change this value with the mouse for most assignment types.

8. Selected Slot Indicator: Indicates the selected slot.

Settings Menu



Right-Clicking on the Settings button gives you the options below. If you Left-Click on it, it will take you back to the Settings screen.

- **Plugin Mode** – sets focus mode (same as GUI button)
- **Instance Mode** – sets focus mode (same as GUI button)
- **Track Mode** – sets focus mode (same as GUI button)
- **Compact Mode** – Changes layout of assignment list in GUI - fader bars are combined with assignment name - and if you stretch the width of the GUI it will create multiple columns.
- **Customize Colors** – Opens the colors dialog - for making the display suit your own preferences/theme.
- **Save Colors Preset** – Opens a dialog where you can save the current color profile you have displayed.
- **Load Color Preset** – Opens a dialog where you can load a previously saved color preset. There are a few to choose from.
- **Float FX GUI** – Currently this option is disabled.
- **Float time (0 secs)** – time plugin GUI floats for (disabled)
- **Print Default CC Values to New Items** – This forces printed default values (print val button r-click) into its own item.
- **Reset Fader Position to Print CC Value** – When the edit cursor is over an item - sets fader to chased value, if not over an item or no chase value for the CC - fader is set to default print value.
- **Auto Mode Switch (Experimental)** – switches mode between plugin and track modes depending on focus (plugin focused goes into plugin mode, plugin loses focus - switches to track mode)
- **Use Stripper DM Touched (Experimental)** – Purely for Stripper's dynamic mode integration - keep it disabled if not using Stripper to edit plugin parameters.
- **Group Options** – This is related to how the highlighted group option (HL GRP) highlights the grouped buttons.
- **Load All Maps At Startup** – Loads all maps into memory - to reduce disk access when changing maps. Recommended to leave this option off because it hasn't been recently tested.
- **Track Mode: offset follows selected track** – when set - a MCU mixer style map will always start at the first selected track - when off - uses Internal track offset which can be banked up and down using associated internal commands.
- **Track Mode: Ignore hidden tracks in TCP** – when using a mixer style map - tracks hidden in TCP will be skipped and not shown.
- **Track Mode: Ignore hidden tracks in MCP** – same as TCP but for MCP hidden tracks.

- **Set Current Track Map As Default** – Sets whatever the current track map is to be used as the default map for tracks.
- **Set Current Global Map As Default** – Sets whatever the current Global map is to be used as the default map for tracks.
- **Use Default Map** – If a default map has been assigned - then enabling this option will load the default map for any track that doesn't have a specifically assigned map.
- **Use Alternate Fader Select Mode** – Changes how the edit layer is chosen when opening the Assignment Properties dialog.
- **Properties Window On Top** – Forces the Assignment Properties dialog to sit above all other windows.
- **Refresh All Device Handshakes** – Re-initializes any controller handshakes if a controller uses one.
- **Advanced Options >**
 - **Send Data To Stripper** – If you have replicated your controller within Stripper - this option is required to sync data between the SK2 and Stripper strips.
 - **Track Selection Delay** – Delay between selecting a track and SK2 loading the associated track map. Default is 0.4s.
 - **Delay affects fader feedback** –
 - **Stripper Data: Send Slots Per Defer Cycle:** – Number of assignment slots to sync with Stripper per defer cycle.
 - **Prevent duplicate CCs** – When enabled - prevents CC's being continuously sent if the fader is touched but not moved.
- **Reset Devices** – Resets Reaper's audio and MIDI hardware ports. Can help if SK2 inadvertently loses connection with any controllers.
- **Version** – This indicates what version of SK2 you are running.

GUI Resizing

All SK2 windows can be resized using the standard method of grabbing an edge or corner with the mouse pointer and dragging to the required size. The GUI elements will be re-positioned and sized accordingly.

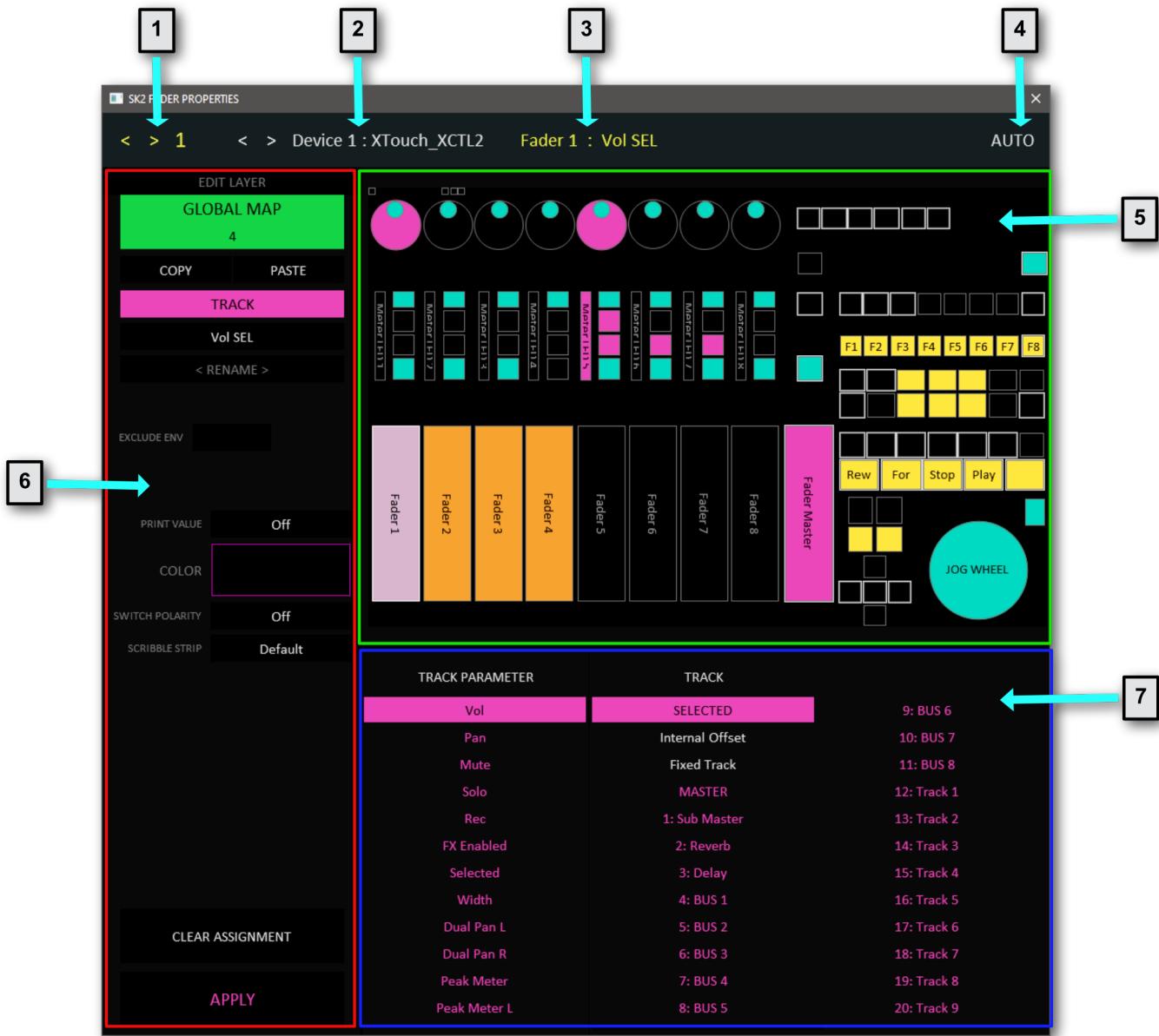
GUI elements can also be resized independently if the window size using **Ctrl+Mouse-wheel** (**CMD+Mouse-wheel on Mac**) while the window has focus and mouse is over the relevant section. The top and bottom sections of the main SK2 window can be resized independently. The Assignment Properties window elements can also be resized using the same method.

Fonts can be resized also - using **Alt+Mouse-wheel**.

Some OS's (Mac) may vertically align the text in the GUI button elements incorrectly. The vertical alignment of the text can be altered using **Ctrl+Alt+Mouse-wheel** (**CMD+Alt+Mouse-wheel on Mac**) to fix this issue.

All changes to the size of GUI elements, fonts and text alignment will be saved automatically and remembered each time the script is run.

Properties Assignment Dialog Window

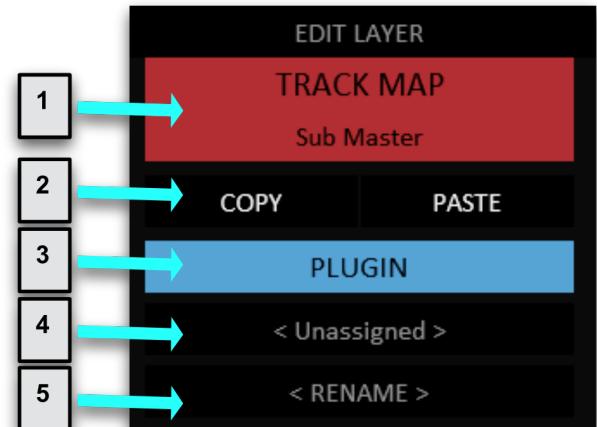


- 1. Current Slot:** Shows the current selected slot. The arrows cycle through the available slots..
- 2. Device:** Shows the device the current slot is associated with. Clicking on the arrows (and device name) cycle through the available devices.
- 3. Control + Assignment:** Shows the control associated with the selected slot, as well as any current assignment stored in the slot (for the active layer).
- 4. AUTO button:** When active - on applying a new assignment, or editing an assignment - the next slot will be automatically selected.
- 5. Controller Device Layout:** This area shows the controller layout as defined in the control map for the selected device. Clicking on a control will select the appropriate slot. The colors indicate the type of assignment stored for the active layer.
- 6. Control/Slot configuration area:** This area shows the configuration options for the selected control/ slot. The available configuration options will change depending on the type of control (button/fader/ encoder). This area also shows the active **edit layer** (main/additional(purple)/global/permanent), as well as the **assignment type selector** (PLUGIN/CC/TRACK/ACTION/INTERNAL).
- 7. Assignment select area:** This area is where you can make the assignment selection. The available options are dependent on what has been selected in the **assignment type selector**.

Control/Slot Configuration Area

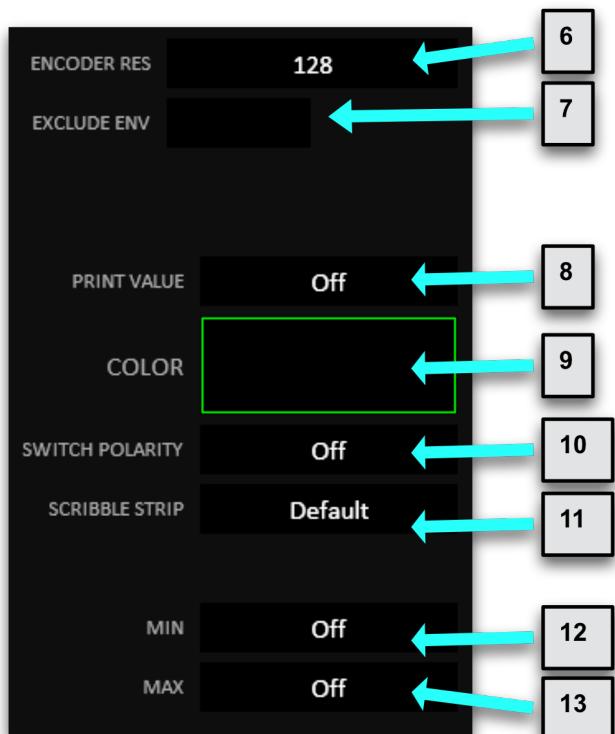
- 1. Active Edit Layer:** This indicates the edit layer being edited. Changes will only be made to assignments on this layer.
- 2. Copy/Paste buttons:** Copy or Paste the assignment properties.
- 3. Assignment Type Selector:** Indicates the type of assignment. The different types are:

PLUGIN:	Plugin (host) parameters
CC:	MIDI CC's
TRACK:	Track parameters
ACTION:	Reaper actions
INTERNAL:	SK2 internal assignments - these are assignments specific to SK2. For example: to change SK2 focus mode, to trigger the flip function, to select a specific global map etc.



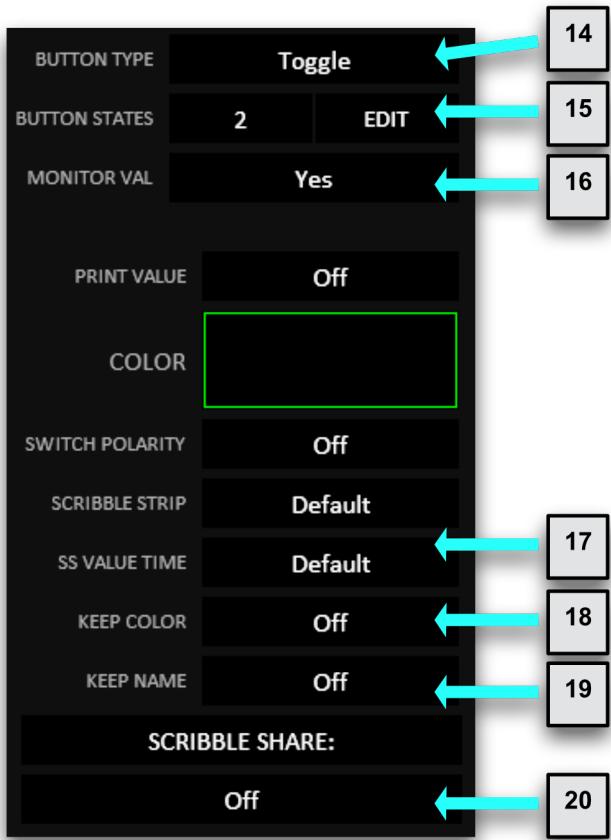
- 4. Current Assignment:** This indicates any current assignment for the selected slot and layer.
- 5. Rename button:** This allows you to rename the assignment. If an assignment has been renamed - then it will be shown on the button.

Fader/Encoder Settings



- 6. Encoder Res button:** (Encoders only) Sets the encoder resolution.
- 7. Exclude Env (or Lanes) button:** Excludes the assignment from Auto Env or Auto Lanes processing.
- 8. Print Value:** Set a print/default value for the assignment. The value can be cleared using the Right-Click menu.
- 9. Color:** Generally only applicable to XTouch and XTouch extender controllers. Sets the scribble strip color for the assignment.
- 10. Switch Polarity:** Reverses the action of the fader/encoder.
- 11. Scribble Strip:** Only applicable for controllers with scribble strips. Determine which scribble strip the assignment is displayed on.
- 12, 13:** Sets minimum and maximum values for the assigned parameter.

Button Settings



14. Button type: Sets the trigger action for the button.

Toggle: Button will have 2 or more states. Each button press cycles to the next state.

Hold/Sustain: Button has 2 states - the 'on' state is triggered when the button is pressed and the 'off' state is sent when the button is released.

Single: Button has a single state triggered when the button is pressed.

Hold/Repeat: Button repeatedly sends its value while pressed (only applicable for ACTION assignments).

15. Button States: The first button is the number of states. The second button opens the button states edit dialog where each state can be configured.

16. Monitor Val: Determines whether SK2 automatically monitors the assigned parameter's value, and feeds this value back to the control. This is mainly applicable to ACTION assignments.

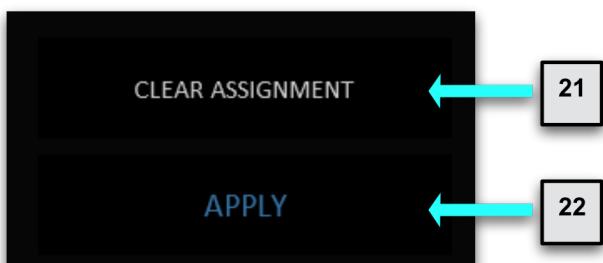
17. SS Value Time: The time changed values are displayed on scribble strips.

18. Keep Color: If the current button state is not the first state, enabling this option will force the button state color to remain on the scribble strip, even when the value has timed out. So this setting can be useful for showing mute or solo states on a mixer style channel strip.

19. Keep Name: Similar to Keep Color, but the assignment name will remain on the scribble strip when the button state is not the first state.

20. Scribble Share: Enables 2 different controls to display their assignments simultaneously on the same scribble strip.

Other Controls



21. Clear Assignment: Clears the current assignment slot for the selected edit layer.

22. Apply button: Saves current assignment settings to the current assignment slot for the selected edit layer.

Button States Edit Dialog

1. Button State Number: Indicates button state position. Left click cycles the scribble strip color. A triangle in the top-left corner indicates that the state color will match the assignments scribble strip color set in the control slot configuration area).

2. Button State Value: This is the value that will be transmitted when the button state is selected (Between 0 and 1 for host parameters, 0 and 127 or 16383 for CC's. Some internal values will have different ranges).

BUTTON STATES	VALUE TEXT
0.0	Off
0.33333	Low
0.66667	Mid
1.0	High

Double-clicking the BUTTON STATES label at the top of the dialog will automatically generate evenly spaced values between the minimum and maximum value for the assignment type.

3. Value Text: This is the text that will be displayed on a scribble strip when the button state is selected.

Notes On Making Plugin Assignments

The scope of a plugin assignment depends on which layer you are adding the assignment to, as well as what focus mode SK2 is in.

Plugin assignments to the main or additional (purple) layers

When making parameter assignments in Plugin/Instance Mode - and assigning to the main or additional (purple) layer - these will be saved to a plugin map. A plugin map will always link the parameter assignments to the focused plugin of the same type/name. You cannot have assignments from different plugins accessible at the same time.

When making parameter assignments in Track Mode - and assigning to the main or additional layer - these will always map to the equivalent plugins on the focused track. You can make assignments mapped to multiple plugins from a track - and are not limited to a single plugin type.

Plugin assignments to the a global map layer

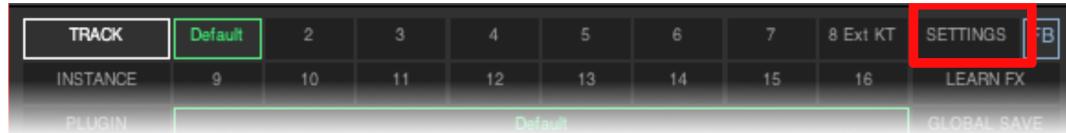
When making parameter assignments to a Global map layer (including the Permanent layer), each assignment will always be hard wired to a particular plugin (the plugin can be on any track). Note: The easiest way to map assignments to plugins on a track that is not the focused track is to use the Learn FX button on the main GUI (not via the Assignments Properties window).

You should only map plugin parameters to global map layers if those plugins exist in all your projects - for example - within a master track chain, as part of your standard project template, or are in the monitoring FX chain. If you load a project that does not contain a particular globally mapped plugin - then the mapped assignment will not be available for that project.

Troubleshooting

Resetting Devices

You must get very familiar with Right-Clicking on the Settings menu (seen here in red):



NOTE: If you find that the hardware is not communicating to SK2, the first thing you should try is:

**Right-Click settings > Refresh All Device Handshakes
> Reset Devices**

If this does not help - go into the Settings screen again - check the settings are correct and click the Create Set Up button again.

Resistant Faders on XTouch

If you find that your motorized faders are sticky/fighting you, no matter how you touch the fader cap, there may be a grounding issue somewhere in your studio. Make sure to rule out any high powered LED lights in your studio. Try turning them OFF to see if the resistant faders stop fighting you. Some LED's or LED circuitry are known to interfere with touch sensitive motorized faders. If this is not the issue - try plugging the XTouch into a different plug board.

It is important not to repeatedly force a fader if it does not want to move - as this will damage the motor and you may eventually end up with a dead fader. A fader should be easily moved without resistance when your finger is touching the fader cap.

This known issue is not related to using SK2. SK2 does not have any control over the touch motor release mechanism inside the XTouch, but this is an issue that was experienced by one of our testers - and in this case it turned out to be the high-powered LEDs lighting his studio. He now works in the dark!

Control Track Routing Diagram

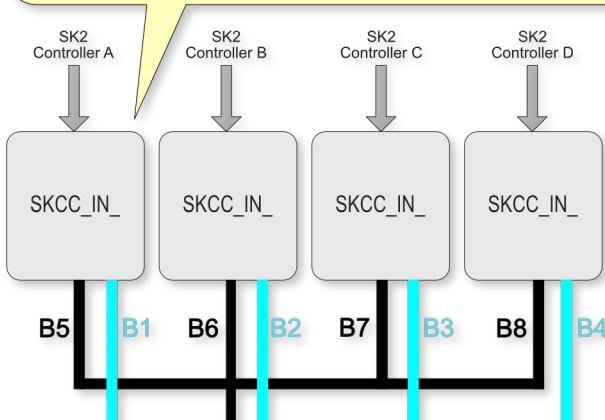
SKCC_IN_tracks:

These tracks receive MIDI input from the SK2 controllers. The MIDI is filtered for unwanted SYSX messages and the MIDI data is then fed to the SKCTL and SKCC tracks via various midi busses for further processing.

SK_IN_tracks:

These tracks receive MIDI input from the ports that any other controller is connected to.

These tracks are only required if you want to apply any MIDI filtering to the incoming MIDI from your non-SK2 controllers.



SKCC track:

The SKCC JSFX takes the input from the controller input tracks and converts the MIDI depending on active SK2 assignments.

The converted MIDI is then routed to the selected track (record armed tracks), and The RetroRec track.



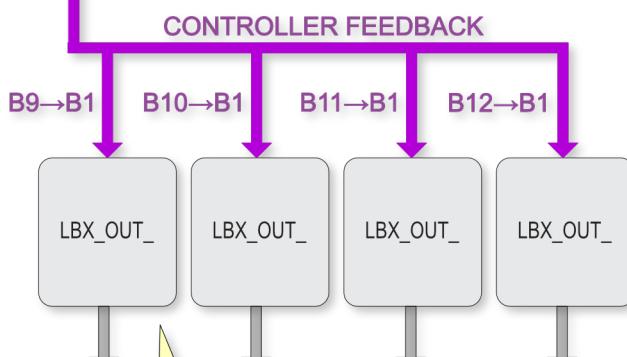
SKCTL Track:

The SKCTL track is responsible for all feedback to the SK2 controllers.

LOOPBACK

SELECTED TRACK

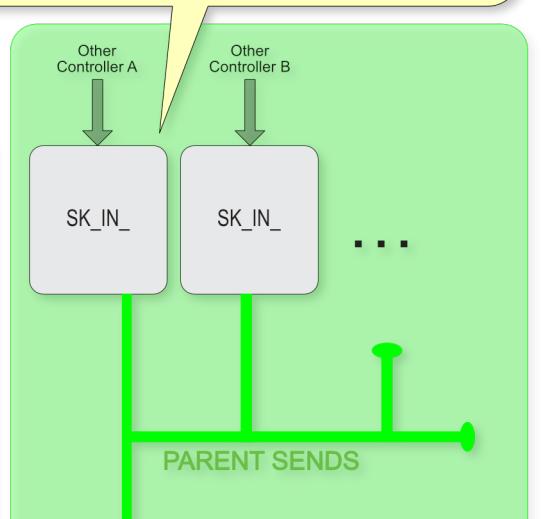
LOOPBACK



OUT tracks:

These tracks route all the feedback MIDI generated by SK2 back to the relevant SK2 controllers.

B_n = Midi Buss n



SKIN track:

This track receives all filtered input MIDI from non-SK2 controllers and routes directly to the selected track (record armed tracks), and the RetroRec track.

Acknowledgements

Leon Bradley - the SK2 code developer - would like to thank:

Firstly - this project would not have been possible at all without the unwavering support of my wife **Nina** and two kids - **Edwin** and **Isaac** - who have allowed me to sacrifice hundreds of hours (and more!) with them in order to work on and develop Smart Knobs 2 (and of course all my other projects)! I love you all!

The design team:

TJ Lindgren is the big brain behind the main functionality requirements of SK2. It was his vision to transform the original Smart Knobs script into something bigger and better, to cater for more of the needs of Reaper composers.

Stephan Römer came on board a little later in the development cycle - to offer his ideas, to listen and provide a valuable and alternative perspective on things.

Andrew Keresztes came in late in the day, but has been hugely supportive, has provided much needed additional testing, and provided a very useful knowledge of documentation writing.

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Or Oren

John Swihart

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