

# Extended Expression

User Manual

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Programming Sidebar

Status	Input Source	Trigger	Output Source	Action	Notes	Colour
●	Launchpad Mini	E8 Ch 0	Windows Functions	Create New Virtul Desktop		Yellow
●	Launchpad Mini	F8 Ch 0	Windows Functions	Close Current Virtual Desktop		Blue
●	OSC	/message	Media Control	Volume Up		Red
●	XBox 1	A	Key Command	SHIFT+CTRL+ S		Orange
●	Logitech Extrem	Button 1	Text	hello		Green
●	Mouse Gesture	Right	Macro	test		Purple

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*Other available views:*

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Status Bar

# Core Concepts



**Input Source:** An input device is the device used to signal the start of a mapping. Physical buttons on an input device are described by actuators.

*Eg. An Xbox Controller*

**Trigger:** A Trigger is the part of an input source that signals the start of an event.

*Eg. The A button on an Xbox Controller*

**Output Source:** An output source is the source that is the intended destination of a mapping. An output source contains things that can be triggered by EE.

*Eg. Key Command, Lix*

**Action:** An action is something that occurs as a result of a mapping.

*Eg. Output the combinations of keys Ctrl+Shift+F, turn on a specific light bulb or collection of lights*

**Mapping:** A mapping is what connects a trigger to an action for when a particular application is in focus

**IoT:** Stands for Internet of Things and is a common way to refer to smart home devices such as Wifi controlled lights and plugs

**OSC:** OSC stands for Open Sound Control and is a network communication protocol

**Application:** An application installed on your machine for which mappings can be set for when the application is in focus

**Global Mappings:** These mappings are active no matter what application is in focus. Application specific mappings for a particular actuator will override the behaviour of that actuator when that application is in focus.

# Application Sidebar



The application sidebar is visible in all views but only active for the momentary and context menu mapping views. Select the application which you would like new mappings to apply to. Right clicking an application or applications allows you to hide the application(s) from the sidebar or disable global mappings for this application. You can also import a preset for a particular application by right clicking and application icon. If there is a preset available for this application click the import preset button to import a list of usable keyboard shortcuts. Shift click or control click to select multiple applications.

Global application icon, use this for mappings that you would like to be active regardless of which application is in focus



Selected application indicator, these mappings are only active when this application is in focus



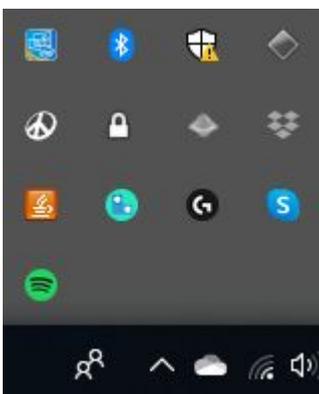
Focused application indicator, this is the application that is in focus



# System Tray Icon

Closing the main window of the application will not fully shutdown the application. Instead the application will run in the background making sure that all of your mappings will still be active. To shutdown the application use the quit function from the file menu. The application window can be opened again by double clicking on the EE icon in the system tray pictured below.

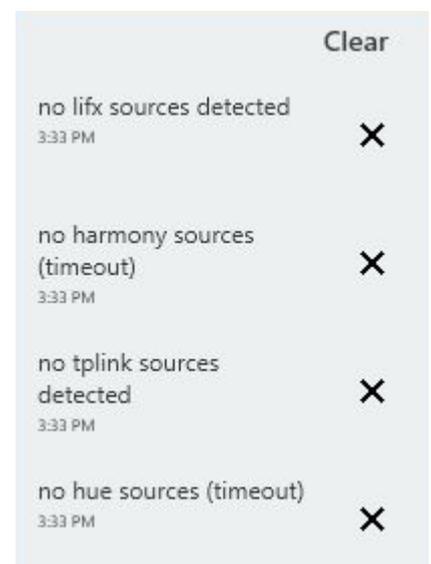
The system tray is located in the bottom right hand corner of your primary screen. If you don't see the EE icon click the up arrow to view more system tray applications.



Open the notification list by clicking once on the system tray icon here you can clear all or individual notifications.



When there is a new notification the EE system tray icon will turn red.



# Menu Bar



## Search

- Use the search field to filter mappings in the Momentary and Context Menu Mapping Views
- Press enter to search and ESC to clear the search or use the provided buttons

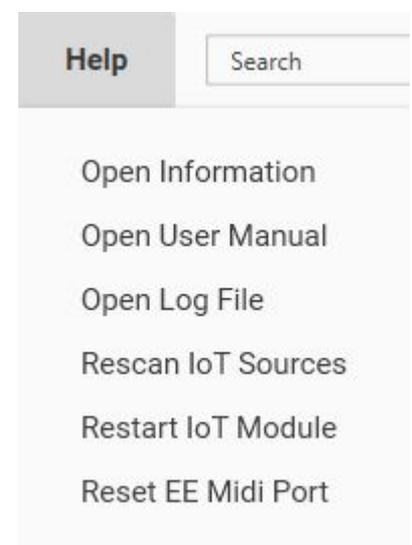
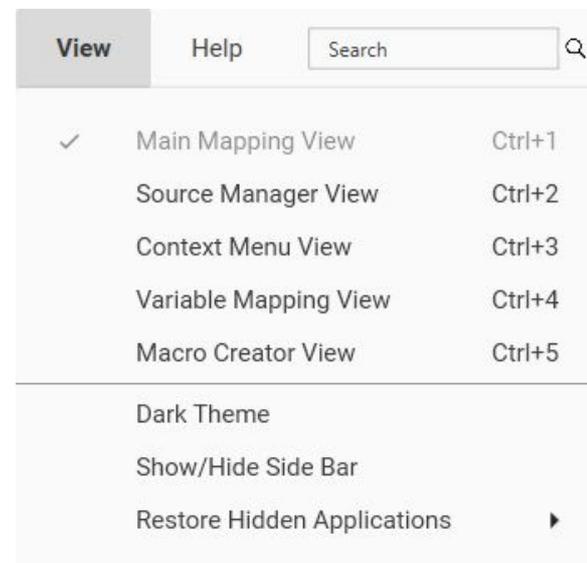
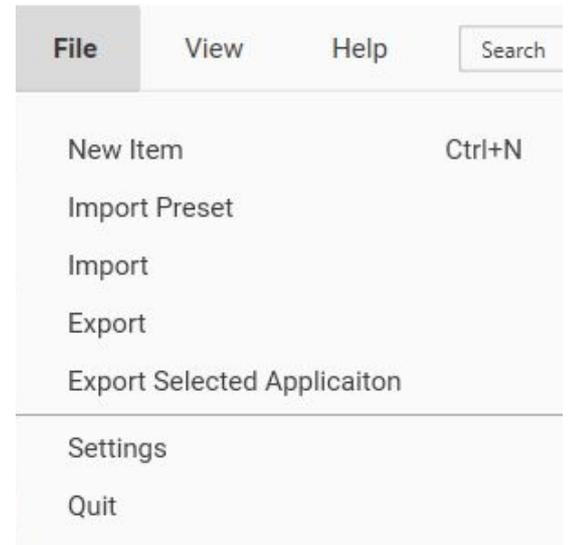
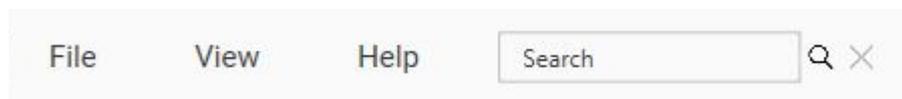
## File

- **New Mapping:** Create a new mapping for the currently selected mapping view (note this button will not be active in the mouse control and device settings views)
- **Import:** You can import mappings from your own exports or from other people provided they have created an export file for you to import
- **Export:** This item allows you to save your currently active mappings to a file
- **Export Selected Application:** Similarly to the previous item however it will only save the mappings that are valid for the currently selected item
- **Rescan IoT Devices:** If an IoT (Smart home) device is not behaving as expected this is the first button you should click in order to potentially solve the issue
- **Settings:** See this page for advanced user settings. You must click save in order for changes to take effect. Many of these settings can also be accessed from the device settings view. See settings section for details

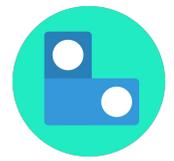
## View

- **Select View:** Choose the current display of the application
  - [Momentary mapping view](#)
  - [Source settings view](#)
  - [Context menu mapping view](#)
  - [Variable mapping view](#)
  - [Macro Creator view](#)
- **Dark Theme:** Changes background color to black and text color to white
- **Show/Hide Sidebar:** Toggles visibility of programming side bar
- **Restore Hidden Applications:** Any application that was previously hidden from the application sidebar will show up here. Click on the name of the application that you would like to restore to the application view

For Help menu items please refer to help section [here](#)



# Momentary Mapping View



In the momentary mapping view you can edit mappings for a selected application. A momentary button is one that has an on state when the button is down and an off state when the button is up. To create a new mapping either double click, right click and select new mapping or select new mapping from the file menu.

You can either drag and drop to reorder items or sort by column header. Right clicking a mapping or set of selected mappings allows you to delete, cut, copy, or paste mappings. You can also set the colour of the selected mappings through this right click menu.

Status	Input Source	Trigger	Output Source	Action	Notes	Colour
●	Launchpad Mini	E8 Ch 0	Windows Functions	Create New Virtul Desktop		□
●	Launchpad Mini	F8 Ch 0	Windows Functions	Close Current Virtual Desktop		■
●	OSC	/message	Media Control	Volume Up		■

Green check mark indicates that the trigger or action is selected for this mapping

Select a trigger from the drop down menu

OR

Select a trigger by pressing the trigger on the source and clicking use

Same as above applies for output sources and actions

## Creating New Mapping

**Input Source**

XBox 1

A

Press Button...

**Output Source**

Key Command

SHIFT+CTRL+ Tab

SHIFT+L WINDOWS+ S

Click the repeat options header header to expand or compress this section

### Repeat Options

Action Repeating:

Hold Delay (ms):

0

Time Interval (ms):

0

*(0 indicates no repetition)*

Hold delay is the number of milliseconds that the trigger should be held down before the repeating action starts.

Time interval is the number of milliseconds between each subsequent action to be performed

# Source Settings View



The Source Settings View is where you can customize how you interact with different input and output sources. The sources are broken down into three categories: System, Input and Output. System sources are generated by EE or are from the computer's operating system, input sources are external devices that are connect to the comput, and output sources are things that EE can send commands to. Each group is expandable and collapsible by clicking on the header.

Name	Source Type	I/O	Connected	Enabled
<b>System Sources</b>				▼
<b>Input Sources</b>				▼
<b>Output Sources</b>				▼

Each row represents its own source and will provide information about its connected state and any error messages associated with that source. You can also disable any source which will prevent it from showing up in any mapping views and will cause any associated mappings to not trigger. Click on a source to see source specific settings in the programming sidebar.

Name	Source Type	I/O	Connected	Enabled
<b>Input Sources</b>				
XBox 1	Xbox	In	● Xbox Controller is not connected	<input type="checkbox"/>
Logitech Extreme 3D	Gamepad	In	● Controller is not connected	<input type="checkbox"/>
Mouse	Gamepad	In	●	<input checked="" type="checkbox"/>
EE MIDI Port	MIDI	In	●	<input checked="" type="checkbox"/>
Input Volume Contro	MIDI	In	●	<input checked="" type="checkbox"/>
Launchpad Mini	MIDI	In	●	<input checked="" type="checkbox"/>
TouchOSC Bridge	MIDI	In	●	<input checked="" type="checkbox"/>
OSC	OSC	In	●	<input checked="" type="checkbox"/>

# Source Settings View



The source settings view gives you control of how each of your source function. Some sources will allow you to rename triggers (Xbox and Gamepad controllers), some will give you control over where to send information (OSC) and others will give you options for how to trigger this source (mouse gestures and context menu and speech). Smart home devices may need configuration and can be setup in the device settings view.

## Context Menu Settings View

Select the trigger that will open and close the context menu

Change the font size of the context menu items

Choose between white and black background

Select where the context menu should appear

Trigger action only when toggle is released means that the action associated with a mouse gesture direction only activates after the toggle is released. Use this when using a key command as the toggle trigger otherwise the toggle trigger will interfere with any output action that is also a key command.

Here you can create a new mouse gesture source with a different toggle trigger or delete the currently selected mouse gesture source

## Mouse Gesture Settings View

## OSC Settings View

Network Service Name	EE Network Service
OSC Source Display Name	OSC
OSC Send IP Address	127.0.0.1
OSC Send Port	7374
OSC Receive Port	4000

Here you can change settings that determine where OSC messages will be sent and which port to send and receive on. Select the IP address of the computer you would like to send wireless OSC messages to. Some applications can detect announced OSC services. Locate the service with the same network service name as above to bind to it.

## Mouse Settings View

Here you can select a joystick or OSC XY pad to control your mouse cursor position. You can also select how fast or slow the cursor moves with movements on your control source

# Context Menu Mapping View



The context menu mapping view allows you to edit what menu items appear in EE's custom context menu for each application. Each mapping you create in this view corresponds to a menu item in the context menu. You can click and drag to reorder items. Context menu items for the global application will show up first followed by any application specific menu items. Make sure you set the global context menu toggle trigger in the source settings view.

Menu Item	Output Source	Action
Play/Pause Toggle	Media Control	Play/Pause Toggle
Volume Up	Media Control	Volume Up
Volume Down	Media Control	Volume Down
Next Track	Media Control	Next Track

Choose the name of the context menu item. When use output name is checked the name field is not editable and will automatically use the name of the selected action.

Since the trigger is a context menu item only the output action is needed to define this mapping

The menu item colour will show both in the mapping view and in the context menu next to the item name

Shows the name of the currently focused application

Menu items appear in the order that they appear in the context menu mapping view. Click and drag them to rearrange

Name

Play/Pause Toggle

Use Output Name

Select Output Source

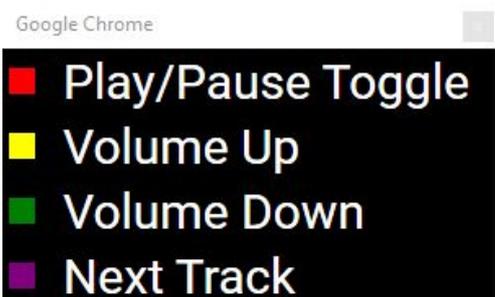
Media Control

Play/Pause Toggle

Menu Item Colour:

Red

Save Cancel



# Variable Mapping View



The variable mapping view is used to translate OSC messages to MIDI Messages and vice versa. Currently only midi control change messages are available.

Input Source	Trigger	Output Source	Action
OSC	/var	EE MIDI Port	Controller #16 Ch1
Launchpad Mini	Controller #104, Channel 0	OSC Message	/EEoutput

Toggle between translating OSC to MIDI or MIDI to OSC

Select the MIDI controller knob/slider or OSC message you would like to use as an input trigger. You can do this for OSC by sending an OSC message with a variable parameter between 0.0 and 1.0 or by moving the knob/slider on the selected MIDI controller.

Select the MIDI controller number or OSC message you would like to send to

Don't forget to save your mapping

# Macro Creator View



Use the macro creator view to greatly enhance your workflows. Double click the top section to create a new macro that will be accessible from the Momentary Mapping View. Once you have given it a name you can assign a set of key commands to be triggered by this macro.

In the bottom section double click to add a new action to the macro and program it in the sidebar. Any action available in the Momentary Mapping View is available to be added to a macro.

Right click the bottom section to open the key command recorder window. Here you can enter a series of key commands and add them to the currently selected macro.

Name	Notes
Save and quit	
<b>Tab Copy</b>	

Action Number	Name
1	CTRL+ C
2	CTRL+ T
3	CTRL+ V
4	Enter

Key Command Recorder ✕

CTRL+ C

CTRL+ V

CTRL+ T

Enter

**Add to Macro**

# Help and Settings



## Help

- **Open Information:** Use this item to view the version number, current license type of your product, to find information about who to contact if you experience issues or for a link to our website
- **Open User Manual:** Use this menu item to open a reference manual for the EE application
- **Open Log File:** To open the EE log file, use this in order to diagnose problems that may arise while using the application. When reporting bugs the developers of EE may
- **Rescan IoT Sources:** Checks the local area network for available smart home devices and updates the available triggers for Hue, TPLink, Lifx and the Harmony Hub
  - Use this if any smart home devices that should be connected are not showing as connected, or if you have created/renamed a scene/activity in the Hue or Harmony app
- **Restart IoT Module:** Use this menu item in order to restart the module that interacts with your smart home devices. Use this only after pressing rescan IoT devices if that does not solve your problem. You can also use this to reannounce your OSC service.
- **Reset EE Midi Port:** If you are experiencing problems with the EE Midi port try resetting it here

## Settings

**Refresh Data:** Check this box to restore the application to its default state. You will need to close and reopen the application for this to take effect. (Default is off)

**Start Node Process:** When this box is checked EE will start the module that interacts with smart home devices and announces EE as an OSC service. If you do not wish to use either of these features you can turn this off, otherwise leave it in its default state. (Default is on)

**Load IoT:** When checked EE will automatically scan IoT devices on application startup

**Virtual Midi Port Name:** This is the name of the port that other applications on your computer will be able to see and connect to. This is how EE can send midi information to your preferred Digital Audio Workstation (DAW)

**Network Service Name:** This is the name of the OSC service that EE will announce. This allows external OSC devices to quickly connect to EE without needing to know the port and IP address of the EE OSC Service.

**Enable Network Service:** When this box is checked EE will announce itself as an OSC Service

**OSC Receive Port:** This specifies on which network port EE should receive OSC messages on. Changing this will automatically trigger a new announcement of the OSC service on the network.

**OSC Send Port:** This specifies on which network port EE will send out OSC messages on. Changing this will automatically trigger a new announcement of the OSC service on the network.

**OSC Send Address:** This specifies the IP address of the computer system which you would like to send OSC messages to. 127.0.0.1 is the loopback address, meaning that it sends back to the system that is sending the message. You can find the address of other computers by looking in the Network settings of that computer.

# Smart Home Device Tips



## LIFX

### Potential Pitfalls

- Only works on 2.4 ghz networks. If your router can make both 2.4 and 5 ghz, ensure they have different names, and specify the 2.4 one in setup
- May need to disable cellular data on device you're using to set up

### iOS setup

- <https://support.lifx.com/hc/en-us/articles/204538340-LIFX-Bulb-Setup>

### Android setup

- Setup might not work unless you connect directly to the light's wifi network before starting.
- After setting location and group, if you get an error: "make sure your light is turned on and your device is connected to wifi"
  - Close the app
  - Connect to light's wifi network
  - Re-open the app, click "+" and try setting up again (no need to factory reset the bulb)

### Quirks

- If you see duplicate entries like "toggle Living Room", then the app has

### Advanced Router Config (if all else fails)

1. Ensure you are on channels 1-11 (not Auto)
2. 1, 6, 11 are the best channels to onboard your lights
3. Use 20mhz channel width only
4. Make sure you do not have a VPN or adblocker turned on
5. Ensure "Airtime Fairness" (ATF) or "WiFi Multi-Media (WMM)" are disabled
6. Ensure "AP Isolation" is disabled
7. Make sure you're using a 2.4 ghz network
8. If there is a 5Ghz network, ensure it's not named the same thing as 2.4 ghz, as it could cause bulbs to connect to 5ghz automatically instead

### Helpful Links

Setup: <https://support.lifx.com/hc/en-us/articles/204538340-LIFX-Bulb-Setup>

Troubleshooting: <https://lifx.typeform.com/to/fQ9I3W>

<https://support.lifx.com/hc/en-us/articles/213188743-Troubleshooting-setup> (recommended router config)

Reset Light: <https://support.lifx.com/hc/en-us/articles/200468240>

# Smart Home Device Tips



## Harmony Hub

### Set the IP Address

To set up Harmony, you need to set the ip address manually in the Device Manager in Extended Expression. You should only need to do this once, as long as the Hub is not power-cycled.

To find the ip address, in the Harmony app, go to About (in left sidebar menu), then go to Versions, then see the four numbers above "HUB IP ADDRESS". This is the ip address.

### Enable XMPP

If you are getting timeouts when trying to enable Harmony, then you will need to enable XMPP in your Harmony Hub. XMPP is an opt-in communication protocol that, when enabled, Harmony warns can open up security vulnerabilities. However, it's necessary in order to enable communication to third-party applications, like EE. Here's how to opt-in using the Harmony mobile app

- Go to Menu in top left corner
- Click on Harmony Setup
- Click on Add/Edit Devices & Activities
- Click on "HUB"
- Click "Enable XMPP"

Here's how using the MyHarmony Desktop application:

- Launch the MyHarmony software on your desktop computer.
- From the login page, press the following keys to access the tool:
  1. On Windows - Press Alt + F9
  2. On Macs - Press Fn + Option + F9 or Option + F9.
- Scroll down to the bottom where it says "FIRMWARE TO ENABLE XMPP. FOR DEVELOPERS ONLY."
- Be sure to read through the short warning and disclaimer to understand the impact of installing this firmware.
- Click on Update Firmware.
- Plug in your Harmony Hub via USB and click on Install.

More info:

<https://support.logi.com/hc/en-us/community/posts/360032837213-Update-to-accessing-Harmony-Hub-s-local-API-via-XMPP>

<https://support.logi.com/hc/en-us/community/posts/360032797333-Harmony-Hub-Firmware-Update-Fixes-Vulnerabilities>