

SKAARHOJ KeyBridge



Introduction

SKAARHOJ KeyBridge Application allows for the remote control of computers running Windows, Mac OS, or Linux from a SKAARHOJ controller using custom built macros.

Please note, the KeyBridge application is currently in Alpha version 0.1.0.

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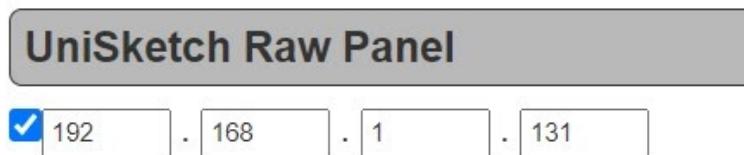
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Getting Started

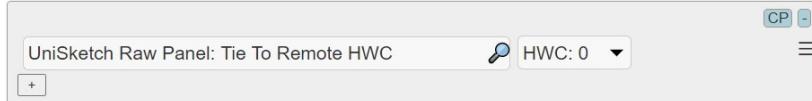
Setting Up your Controller

To use the KeyBridge Application with a Skaarhoj controller, it is important to have the Skaarhoj Raw Panel (client) device core installed on the controller. This will allow for the remote connection and sending of commands to the computer.

The IP address for the UniSketch Raw Panel device core will be the same as the IP address for your computer.



To assign a macro to any hardware component on the controller, you will need to use the UniSketch Raw Panel: Tie To Remote HWC action on each input you want tied to a macro. The HWC# will be left on 0, there is no need to set a specific number.



By default the UniSketch Raw Panel device core will try to connect using the Network Port 9923. This can be changed using the Device Core Options in the online configuration. Make sure the Network Port number matches the network port set in the KeyBridge Application.

Device Core Options (Alpha)

UniSketch Raw Panel	
<input type="checkbox"/> <u>Alternative Network Port:</u>	<input type="text" value="9923"/>
<u>Server Mode:</u>	<input type="checkbox"/>
<input type="checkbox"/> <u>Display connection status:</u>	<input type="text"/>

Setting Up your Computer

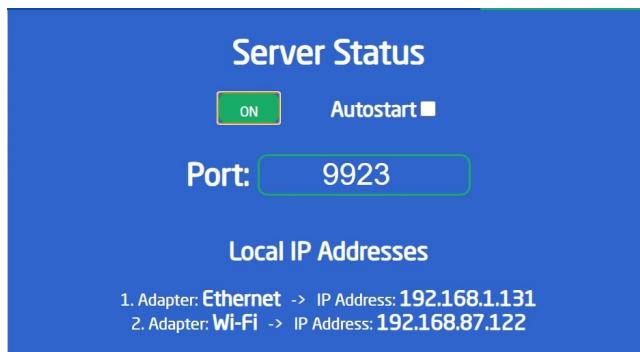
To use KeyBridge you will need to install and run the KeyBridge application on your network connected computer running Windows, Mac OS, or Linux. The KeyBridge application can be downloaded at: <https://www.skaarhoj.com/support/KeyBridge/>

The application needs to be running to maintain connection to SKAARHOJ controllers.

Settings

In the KeyBridge application, Server Mode needs to be enabled to allow for connection to the computer. By default this mode is not enabled for security reasons.

By checking off Autostart, server mode will be enabled by default when opening KeyBridge.



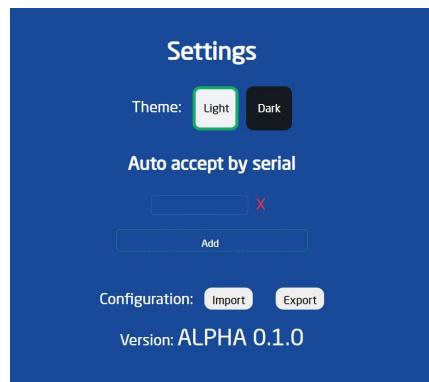
In the Server Status section you can also change the local network port. By default it is set to 9923, this corresponds to the default network port used by the Raw Panel device core. When changing the port, make sure server mode and autostart are not enabled. They can be re-enabled after you have changed the port.

Devices

In the Devices tab you are able to see what controllers are trying to connect your computer. These will be listed under Waiting Devices, Active Devices, or Blocked Devices. From here you can Approve the connection or Block it. Mousing over an Active Device will light up the device blue, while a Blocked Device will light yellow for easy identification.

Waiting Devices	Waiting Devices	Waiting Devices
Active Devices	Active Devices	Active Devices
Blocked Devices	Blocked Devices	Blocked Devices

For frequently used controllers, it is possible to enable Auto accept of a controller under settings. The controller has to be first approved and not blocked before enabling the auto accept.



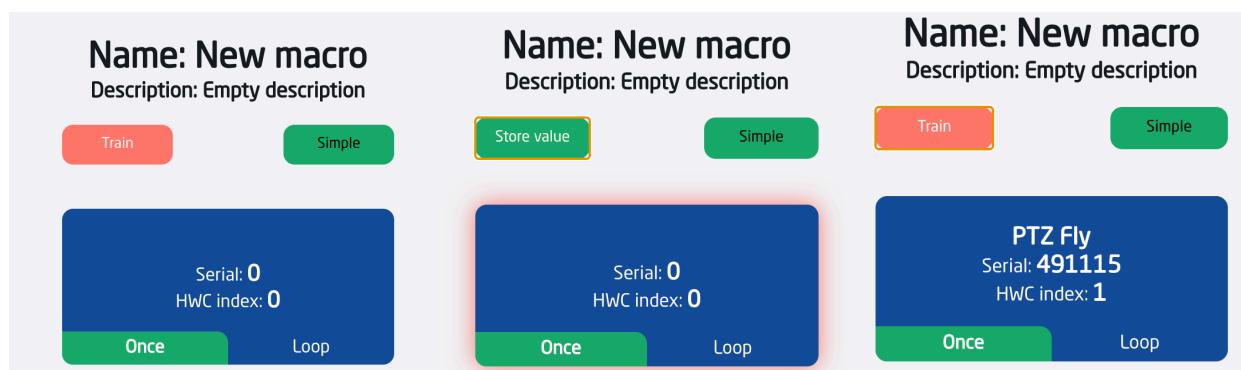
Creating Macros

To create a new macro use the Macros tab.

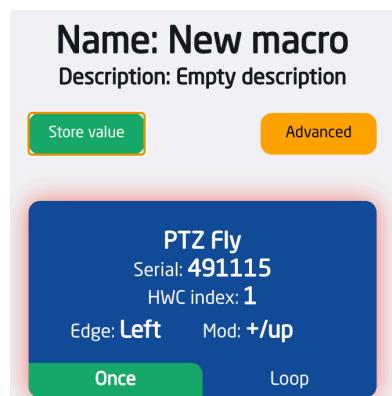


The name and description can be edited by clicking on the words.

Click on Train to connect the macro with a specific button. When the box glows red, press on the controller button to link it. Make sure UniSketch RawPanel: Tie to Remote HWC has been assigned to that button to connect it. Once the macro is linked the blue box will indicate the type of controller, serial number of controller, and HWC that is linked to the macro.



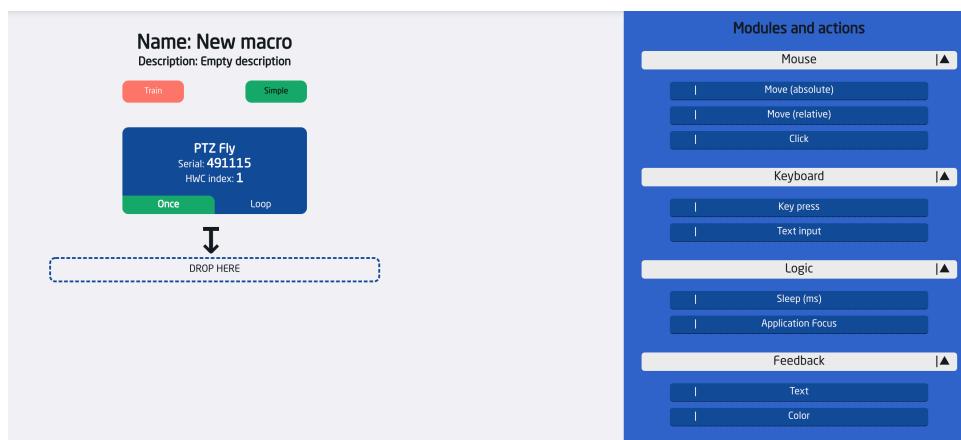
To assign a macro to an edge of a 4-way button, click on Simple to switch it over to advanced before recording the button press.



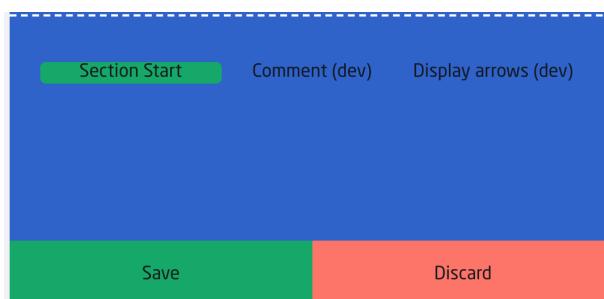
A macro can be set to run once or on a continuous loop.



To start adding actions to the macro, drag and drop them from the right side. A new action can be added above or below a previously added action, but they can not be re-arranged in order once placed. To change the order, delete the misplaced action and add a new action to the correct spot.



Before a macro is able to be used, it must be saved.



Once the macro has been saved, the corresponding button on the controller will light up white and the display will reflect the name of the macro.

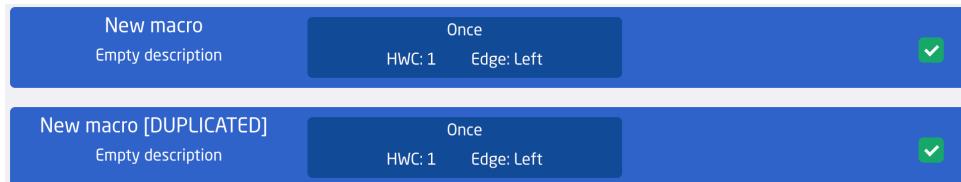


Editing Macros

Saved macros are can be seen on the Macros tab. Mousing over a macro will give the option to Edit, Duplicate, or Delete the Macro. It will also light up the connected button in Red for easy identification.



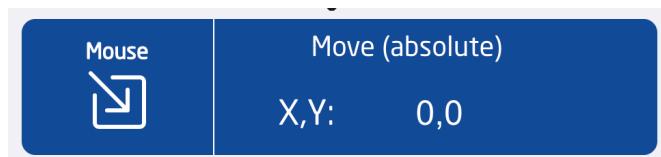
Duplicate macros will indicate their status in the name. This can be changed by editing the macro and changing the name.



Action Descriptions

Mouse

Mouse move (Absolute)



Short Description

Click the location box, then move the mouse to the desired location and press shift+space to record the position.

Long Description

This action moves the mouse to a specific position. This means that the mouse will go from its current location to the position you decide.

To set up an absolute mouse position, drag the action into the macro and click the location box (that will say 0,0 by default), make sure that the edge of the box changes to orange.

Now you can now move the mouse to any position on your screen, and then press the shift+space key on your keyboard.

The location box will now show "0,0" has changed to a number like "612,800", these numbers describe the location of the mouse using coordinate terminology. The numbers will be different from screen to screen, as they are dependent on the screen's resolution.

It is not necessary to remain in the KeyBridge app while selecting the position, pressing shift+space will still capture the position even if KeyBridge is minimized or not in focus. Use alt+tab (cmd+tab on mac) to quickly switch between windows.

This action works best on a button, and should not be used on other components like Joysticks, Faders or Encoders. If choosing one of these components, then moving the component will send the mouse to the fixed position. To turn a joystick into a mouse, then use Mouse move (relative) instead.

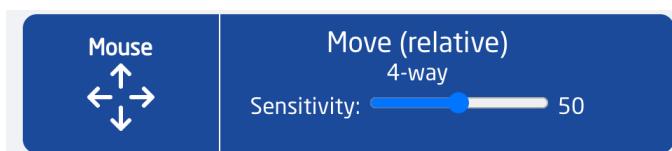
Please note, this action does not click with the mouse, a mouse click needs to be assigned after this action to execute a mouse click.

This action does not know anything about where the mouse is moving to, it only knows the coordinates of the destination.

To specify which windows should be in focus (and ready for a potential mouse click) see: "application focus".

Please note, there can be an issue when using multiple screens or screen mirroring, please use a single screen.

Mouse Move (Relative)



Short Description

Use this action to make a component control the mouse in real time.

Long Description

Move the mouse from its current position, in a defined manner and distance. To use this action drag it into your stack and set the sensitivity and the desired direction: up, down, right and/or left.

The sensitivity will determine how far the mouse moves on each run of the macro.

In simple mode, then assigning this to a button will make the mouse move in the chosen direction.

This action will behave very differently depending on what type of component (button, encoder, joystick or fader) used. The action works best on a joystick, as this would turn the joystick into a mouse.

If this macro is assigned to an encoder, the mouse will move by the speed for every turn of the encoder.

If the macro is in loop mode, then the mouse will move with the speed for as long as the button is held down, or the component moved.

Mouse Click



Short Description

Execute one or more mouse clicks at the cursors current location.

Long Description

This action executes one or more mouse clicks at the cursor's current location. To use this action drag it into the stack, then select the type of click; left, right or middle, and select the number of clicks needed; 1, 2 or type in a number.

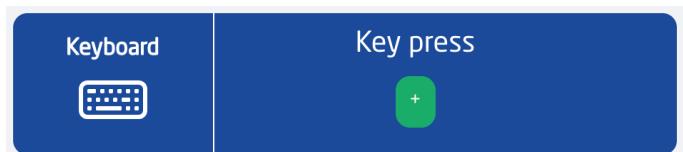
Please note, this action will not move the mouse, to click in a specific location be sure to drag in a mouse move action before this action.

This action does not know anything about where it is clicking, it only knows the button to click and how many times to click it. To specify which windows should be in focus then see "application focus".

If the click does not perform as expected, consider using a "sleep" action before this action, as the computer might not be ready to respond to the click. This would happen if using multiple mouse moves and clicks in sequence, it may be needed to wait for the computer to respond, as KeyBridge is sending these commands a lot faster than a human user would be able to do.

Keyboard

Key Press



Short Description

Press + and then press the key desired keyboard button. Double Press a key to delete it.

Long Description

To use this action drag it into the stack, then click "+", then press the desired key on the keyboard. To add more keyboard keys press "+" and enter the next key. Continue this until creating the preferred combination of keys.

KeyBridge allows for up to 3 modifiers (alt, shift, ctrl, win, com, tab etc) and one more letter or number after 3 modifiers. KeyBridge fires the selected keys in the sequence they are put into the action.

To delete a keypress double press.

To send a string of text like "hello" of numbers use the Text input action instead.

Be aware that certain key presses like ctrl+alt+delete can cause unwanted behavior if sent in an uncontrolled way.

This action is best used on a button.

The simple mode is always triggered on "act down" - meaning as the button is pressed down, as opposed to releasing it again (act up). Advanced mode can be used to make the macro fire on "act up".

Please be aware that that an act up in loop mode, will continue to fire the macro, which can potentially cause the computer to crash.

If assigned to another component other than a button, the keypress will be sent whenever that component is moved, which won't be immediately logical, in this case; consider using advanced mode to get your desired outcome.

Text input



Short Description

Use this to send a string of text or numbers, like "hello" or "1234567890"

Long Description

To use this action drag it into the stack, and then enter the desired text.

When firing the macro, the macro is going to input the string one character at a time.

If the string does not enter in all of the text, consider adding a sleep action before this to make sure that the computer has registered the previous clicks or key presses.

To send a keyboard shortcut like **ctrl+c** to do a "copy" command then use Key Press instead.

This action is best assigned to a button. If assigned to another component other than a button, the string will be sent whenever the component is moved, which won't be immediately logical, in this case; consider using advanced mode to get the desired outcome.

In "loop" mode, the string will be input from start to end, and then repeat from start to end, for as long as the button is held down or the component active.

Logic

Sleep



Short Description

Make the macro wait for a defined time.

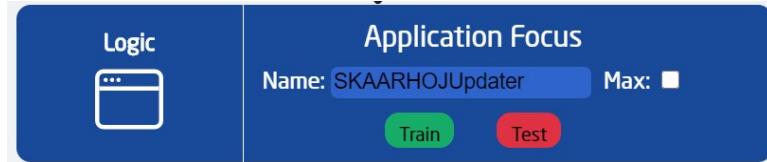
Long Description

Make the macro wait for a defined time of number of milliseconds (1000 milliseconds = 1 sec), useful for long macros that trigger an application, that causes the computer to have to think, which means waiting for the computer to respond to previous commands before proceeding with the macro.

Keep in mind that KeyBridge can fire commands at a much quicker rate than human user, so even a short wait of 10 milliseconds can be helpful.

To use this drag it into the stack and write a number between 1 and 10,000 to define a delay. The delay that works best will depend on many factors, but a 50 milliseconds wait will work in many cases.

App Focus



Short Description

Click "Train" to capture a window into focus, use Shift+Space to capture.

Long Description

To use this action drag it into the stack, and click the "load" button, then bring the desired application into focus, then drag the window to the preferred size and finally press shift+space. KeyBridge can be minimized while you target your application.

Once the targeted application has been chosen, return to KeyBridge and check that the name in the box has changed. This name comes from the computer OS's naming convention.

To test the selection, then press the "test" button, which should immediately bring the application into focus, while also recalling the size. To maximize the app upon focus, check the "maximize" checkbox.

As many app focus actions be in a stack as desired, either to fire a series of keypresses or mouse clicks into different applications, or to resize and recall a bunch of windows.

Application focus will work in many cases, but there can be undesirable behavior, when targeting applications that want to govern OS application focus themselves, or when trying to target apps within another app - like a window being shared in zoom. Applications that have advanced features around overlays, application size and similar, may not work either.

Closing an application or window that was previously targeted by KeyBridge, the macro will fail to recall the window. Once the application or window is open again, the ID number could have changed, and KeyBridge may not be able to find it.

In this case KeyBridge will disable the macro, and will display a red "blocked" warning on the macro.



If the target window or application was closed, try to open it, and enable the macro, by clicking the checkbox icon.

KeyBridge will now check to find the window, if successful, the macro will stay enabled.

If this check is not successful, then the checkbox will uncheck itself after 1 secs.

In this case go into the macro, find the app focus action(s) that says : "Err" and click train and then select the window again.



This relinking will also overwrite the previous saved position and size of the window or app. If this is not successful, the window may not be able to be targeted.

Please let us know at support@skaarhoj.com, so we can investigate.

Feedback

Text



Short Description

Change the text of a display on the controller.

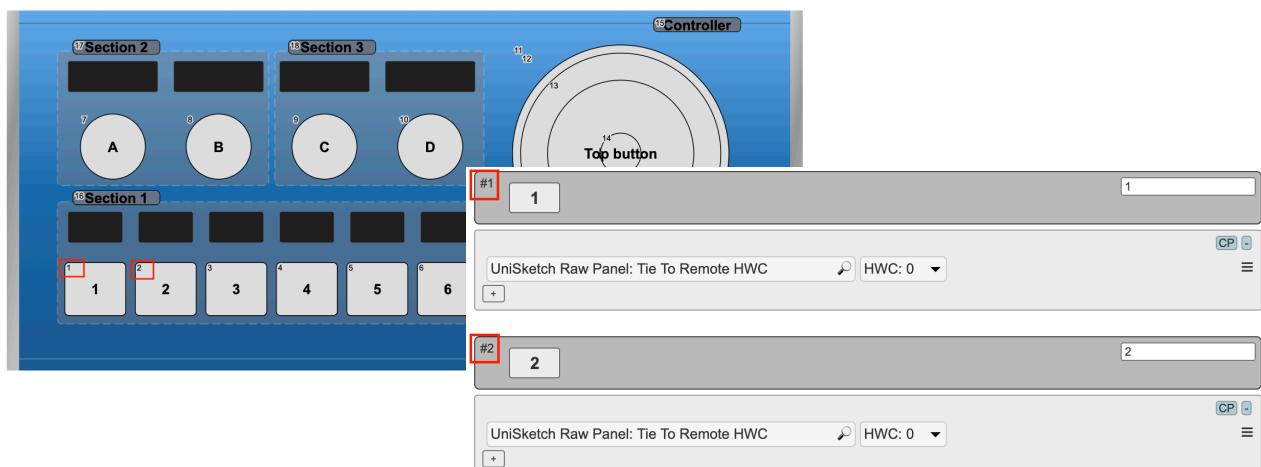
Long Description

Enter a text to be displayed on the controller, keep in mind there is a limited number of characters able to be displayed. In the text box enter a text, if left blank, then the text will change to the name of the macro.

The HWC box defaults to 0, the text will appear in the display connected to the assigned component.

Keep in mind that some Hardware components do not have a display connected.

If the number in the HWC box is changed, then the display connected to this number will change instead. HWC#s can be found on the controller's configuration page.



The last entered text sent to a display will persist until a new text is sent, for a text to be in the display only while a long macro is running, then drag in a second Text at the end, and leave it blank (to have the macro name displayed again) or enter the desired text to for that display.

Upon initialization (connection with KeyBridge) of the controller, all components assigned with macro will have the display changed from "empty" to the Macro name.

Please note, at this time we do not support formatting options for the text. It may be supported in a later release.

If the controller has another device core then Raw Panel assigned (from UniSketch) then System:Local Label will take precedence over Feedback Text. If a button fires both a KeyBridge Macro and something else (like recall a preset on a PTZ camera, or switch sources on a mixer) then the content of the display will be affected by both actions, and the display will show whatever content was sent to it last.

Feedback Color

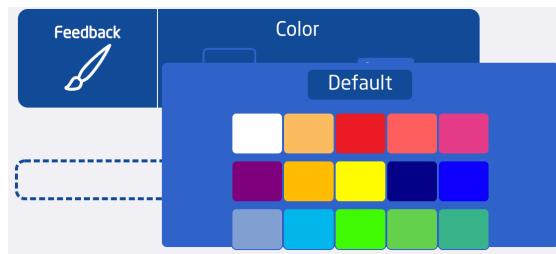


Short Description

Changes the color of a component on the controller.

Long Description

Select a color to be displayed on the controller.



The HWC box defaults to 0, the selected color will change the assigned component. Keep in mind that some Hardware components do not have built in LEDS, like joystick or faders.

If the number in the HWC box is changed, then the color connected to this number will change instead. HWC#s can be found on the controller's configuration page.



The last color sent to a component will persist until a new color is sent, for a button to light only while a long macro is running, drag in a second color action at the end, as it won't fall back to the original color upon completion.

Upon initialization (connection with KeyBridge) of the controller, all components assigned with macro will have the component changed to dim white.

If the controller has another device core then Raw panel assigned (from UniSketch) then sending a color will overwrite whatever other color is on that component, if the Raw Panel action is the first action assigned to the component.

Trigger Mode Definitions

Once

The macro will be sent once at the beginning of the interaction with the component.

Loop

The macro will start, run to end and then start at the beginning for as long as the button is held down or the component is moved.

Simple

The macro can be assigned on down press of a button or the component is moved.

Advanced

The macro can be assigned based on the direction press of a button or directional movement of another component.

Hardware Component Definitions

SKAARHOJ Controllers have 4 kinds of hardware components:

Button (binary)

Encoder (pulsed)

Joysticks (speed)

Faders and T-bars (Analog)

Buttons

Simple Mode

A macro assigned to a button is triggered when pressing down on the button (act down), as opposed to letting go of the button (act up). In simple mode a macro can not be assigned to the edges of a button.

Advanced Mode

The "assign component" stage will learn both the edge of the button and if you want to use act up or act down.

To use act down, hold down the button while clicking "Store Value".

Please note, macros that are triggered by act up, that are also in loop mode, will keep firing without stopping.

Encoders

Simple Mode

Any interaction with the encoder knob, (pulse down/left turn , pulse up/ right turn, press) will fire the macro.

Advanced Mode

A macro can be assigned to a pulse down/left turn , pulse up/ right turn, or press down of the encoder knob, in this way you can assign 3 macros to a single encoder component.

Joystick

Simple Mode

Any interaction with the joystick will fire the macro.

Advanced Mode

The macro can be assigned to the directional move of the joystick.

Fader

Simple Mode

Any move with the fader will fire the macro.

Advanced Mode

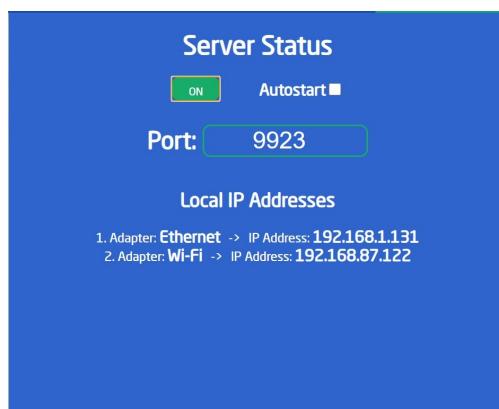
The macro will fire when in one of 10 steps on the fader. In this way a macro fire at each step when you move the fader from button to top.

Please check the component feedback UI to see which section is assigned.

Troubleshooting

No controllers showing up in Devices

If the device fails to show up in the Devices tab check to see Server Mode is enabled in Settings.



Make sure the Raw Panel device core is enable on the controller.



Check that there are no IP conflicts and that the IP address assigned for UniSketch Raw Panel matches that of the computer to control.

Macro is Labeled “BLOCKED”

Closing an application or window that was previously targeted by KeyBridge, the macro will fail to recall the window. Once the application or window is open again, the ID number could have changed, and KeyBridge may not be able to find it.

In this case KeyBridge will disable the macro, and will display a red “blocked” warning on the macro.

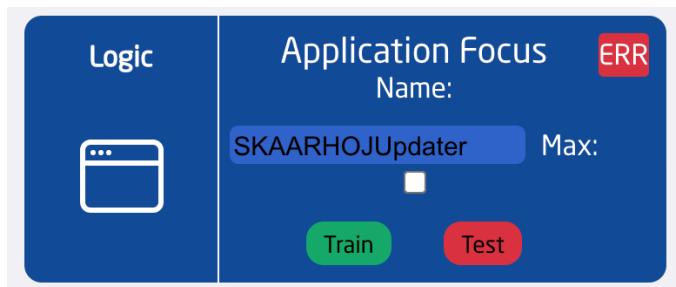


If the target window or application was closed, try to open it, and enable the macro, by clicking the checkbox icon.

KeyBridge will now check to find the window, if successful, the macro will stay enabled.

If this check is not successful, then the checkbox will uncheck itself after 1 secs.

In this case go into the macro, find the app focus action(s) that says : “Err” and click train and then select the window again.

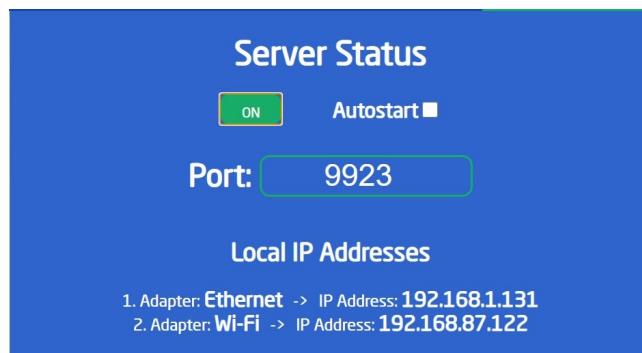


This relinking will also overwrite the previous saved position and size of the window or app. If this is not successful, the window may not be able to be targeted.

Connection to the computer is unstable

If trying to connect to from two device cores from the same controller to the same computer (example: KeyBridge + LiveStream Studio) you may need to change the communication port used by KeyBridge.

In the Server Status section you can also change the local network port. By default it is set to 9923, this corresponds to the default network port used by the Raw Panel device core. When changing the port, make sure server mode and autostart are not enabled. They can be re-enabled after you have changed the port.



For a list of frequently used ports to avoid please check out:

https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers