

tangent



Mapper Made Simple

Quick Start Guide

Rev 13



Check www.tangentwave.co.uk/support for updates.

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1. Read first! – Seriously, it's important!

This guide is a supplement to the Mapper user manual. Whereas the Mapper manual is a technical document, this guide seeks to explain the concepts of the Mapper and introduces the features it has.

It covers most of the frequently asked support emails we get, and it points out some important things you need to know.

The Mapper, whilst fairly simple, has certain complexities that if not understood can lead to confusion and unexpected behaviour. So, it's highly suggested that you read this guide, all of it, and in the order it's written. Seriously, we're not kidding! Doing so will save you some potentially wasted time.

Resolve users, read the next section which is aimed specifically at you!

2. DaVinci Resolve users read this before you do anything

Depending on which Tangent panels you use, what you can do and what you need to know differs. Either way, you'll use the Warp Engine built into the Tangent Mapper to create your own control layouts.

Element, Ripple Element-Vs app:

Please read this first: [Warp Engine Resolve Quick Start Guide](#). Then use this manual as further reference if needed.

Wave2:

You will need to disable the Tangent Wave in Resolve preferences as it's not possible to use Resolve's default mapping and a custom map at the same time. This is because Resolve does not use the Tangent Hub to talk to the panels. You will also need to install the Tangent Hub if you haven't done so already. Please read this first: [Warp Engine Made Simple](#). Then use this manual as further reference if needed.

3. Mac users please check this

In System Preferences -> Security & Privacy, Privacy tab with Accessibility selected in the left column, make sure TangentHub is a ticked entry in the list of apps allowed to control your computer. This allows keyboard shortcuts and warps to control your desktop.



4. Limitations in the functionality of the Tangent Mapper

- There is no copy or paste functionality.
- There is no undo functionality. Some of the features have the potential to overwrite mappings that have been previously assigned. Before you make any changes make a copy of your map that you can go back to in the event you make a mistake.
- There is no auto save function, you need to periodically save any changes. You will however be prompted if you have unsaved changes before you quit the Mapper, or quit an application connected to the Mapper.
- You cannot create control maps for any application that does not support the Tangent Mapper or Tangent Hub. Actually, that's not strictly true, you can create a map which is keyboard shortcuts only, or if your application supports Open Sound Control (OSC), you can map our panels to it. We'll cover these later in the guide.

5. Does my application support the Tangent Mapper?

This guide assumes you're using the panel with an application that supports our panels and our Tangent Mapper. You can check if your application supports our panels and our Tangent Mapper by:

1. Go to your panel's product page on our website.
2. Click the Application Support tab.
3. Then select your application.

If the application supports our panels and the Tangent Mapper it will say so.

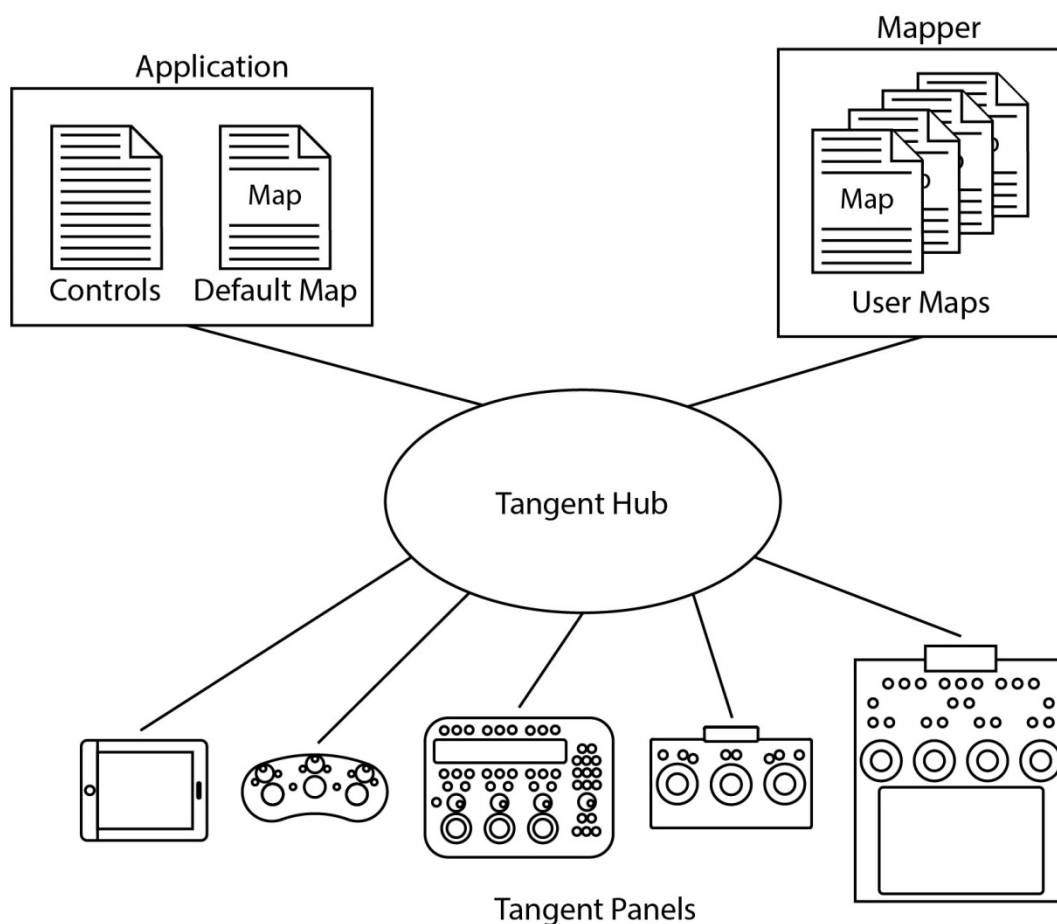


The only exception to this is if your application supports Open Sound Control (OSC), then our panels can be mapped. You will however need to create a map from scratch. We cover this in the section: **Controlling via Open Sound Control (OSC)**.

If your application doesn't support the Mapper you can create a map which is keyboard shortcuts only, or use the Warp Engine built into the Mapper. See the section **My application doesn't support the Tangent Mapper, panels, or Hub** first and then decide if this suits your needs. Once you've read that section you can carry on reading through this guide.

6. Tangent Hub and Tangent Mapper overview

Take a look at the diagram below. You'll see that the Tangent Mapper, just like an application, connects to the Tangent Hub background task.



It's the Hub's job to act as a communication bridge between an application and the panels. The Hub also takes the raw inputs from the panels and translates them into commands the application understands. This implies the panels themselves do not hold any commands or even know what they are connected to – it's the Hub that knows all this. Finally, the Hub detects which application is in the foreground and automatically applies the appropriate map to the panels.

So where does the Hub get the controls and maps from? Well, when an application connects to the Tangent Hub, it passes a couple of files to it:

- A controls file which tells the Hub what controls an application has.
- A default map file which is the suggested layout of how the controls are mapped to a panel.

The thing to understand here is that it's the application that tells the Hub what controls it has available to be mapped. And it also provides the default map to the Hub.

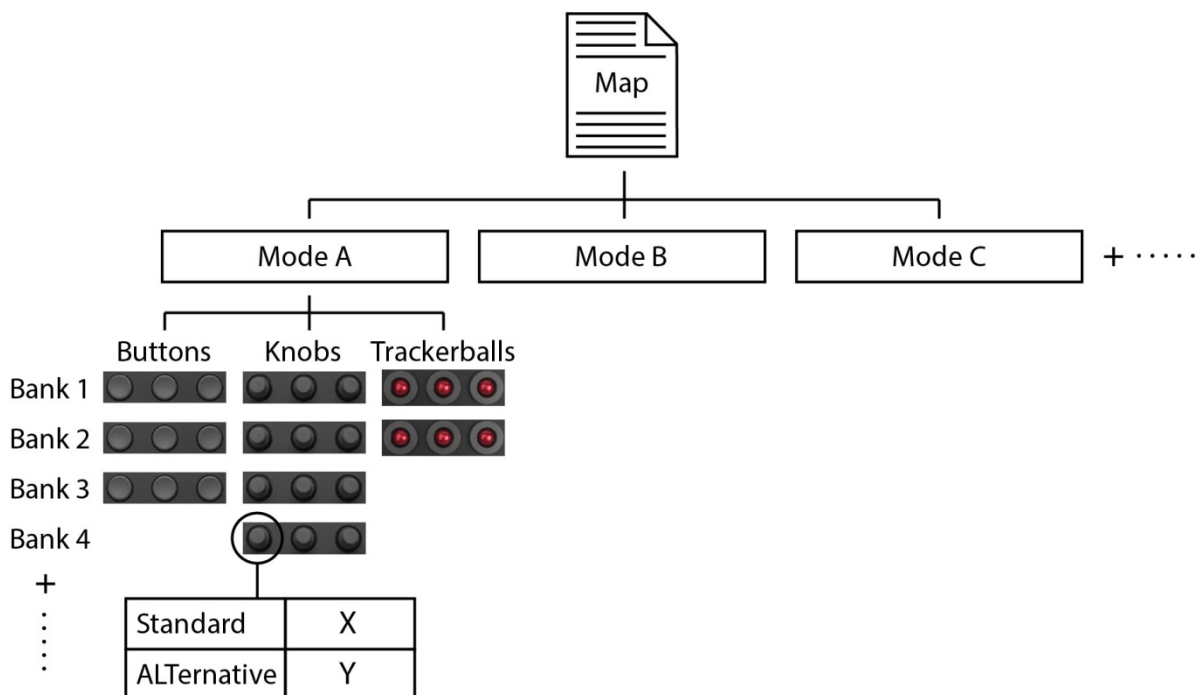
When the Mapper connects to the Hub it gets access to the applications controls file and the applications default control map. You can edit the default map and save your version as a user map. You can have more than one map for each application, and you use the Mapper to switch between these maps.

The Mapper does not need to be running all the time. Only use it when you want to remap the controls on your panel. The Tangent Hub will always be running in the background.

7. Let's get some basic terms and concepts out of the way first

It's important that you understand the following terms and concepts as they form the basis of how the Mapper works. We're going to be using these terms a lot throughout the rest of this guide.

So let's start with an overview of a map file - see the diagram below. Imagine a simple panel with only 3 knobs, 3 buttons, and 3 trackerballs.



7.1 Map

A **map** is a file that describes how the controls in an application are laid out on a panel.

The controls within a map are arranged into **modes** and **banks**. The map that is loaded when an application is run is the last one that was used by the application. Most applications provide a default map which you can use as the starting point for your own custom map.

7.2 Mode

A **mode** is a way of grouping controls together that all apply to a certain way of working or used for a certain process.

For example, you might have a mode for primary colour correction, a mode for secondary colour correction, and a mode for noise reduction. All the controls for each mode would be grouped together in a mode of the same name. As you switch between these modes in the application, the controls on the panel automatically change to be ones relevant for that mode.

In our example map file we have three modes: A, B, and C. But you can have as many modes as you or the application needs. Of course, the modes will have names appropriate to the application, we are just using A, B and C as simple

names. We've only filled in controls for mode A for clarity, but modes B and C would also have their own controls arranged in banks appropriate to that mode.

The modes are normally defined by your application so you won't need to worry about creating them. However, you can create your own modes: a good example of this would be creating a "simple" mode, which only contains the controls you regularly use from the application defined modes. The thing to note here is that the application does not know about your mode, so selecting your mode will not trigger the application to change to any of its modes.

You use the **goto mode**, **next mode**, and **previous mode** function assigned to a button to select a mode from the panel. For modes defined by the application you'll most probably also be able to select them from the application's user interface.

Some applications do not make use of modes at all, in which case there will just be the single default mode.

7.3 Bank

In our imaginary panel we only have 3 knobs. Let's say that our application has 12 controls that all need a knob. But you only have 3 knobs so how do we get another 9 knobs? Well, you can add another **bank** of knobs. Think of a bank as another page or layer of controls you can switch to. Switching banks remaps what the knobs do. As you can see in our example there are 4 knob banks which gives us the total of 12 knobs we need.

Buttons and trackerballs can also have banks, and in our example we have 3 button banks and 2 trackerball banks.

By default there is at least one bank – you need somewhere to store your controls - which you can fill up, and when you run out, you use the Mapper to add another bank. Each bank does not have to be full, you can add a bank whenever you want; in fact this is quite a good way of grouping similar controls together.

You can have as many banks as you want.

You use the **goto bank**, **next bank**, and **previous bank** function assigned to buttons to step through the banks.

7.4 Standard and alternate mapping

Each control, be it a button, knob, or a trackerball, can have a **standard** and **alternate** mapping. The easiest way to think of this is like holding down the shift key on your keyboard to get another symbol. In this case, you hold down the **Select ALternative Function** button on the panel in order to access an alternative function that has been mapped to a control. The **Select ALternative Function** can be mapped to any button on the panel and makes that button act just like the shift key on your keyboard. You can also set a double press of the button to lock the alternative function on, just like shift lock does on your keyboard – see section: **User Preferences menu**.

A good example of why you would want to do this is where you have complimentary functions like copy and paste assigned to a button. Paste could be the standard mapping and copy could be the alternate mapping.

Another good example of its use is where the standard mapping for a knob would be a coarse sensitivity, and the alternative would be fine sensitivity. In this way you can quickly jump to a rough value and then hold down the **Select ALternative Function** button to fine tune the value.

Buttons, knobs, and trackballs can all have alternates assigned to them.

7.5 Auto-select Application

The tangent Hub detects which application is in the foreground and automatically applies the map for that application to the panels. You can disable this function, but then you'll have to manually switch between applications yourself using the Mapper.

7.6 Button

You can program the buttons to do anything that your application allows. You can even assign keyboard shortcuts or OSC commands to them. Some buttons have legends on them to help identify them, but you can still choose what you want them to do.

The only buttons that are different and cannot be programmed are the resets for the trackballs and knobs. See the **Knob** and **Trackerball** sections below.

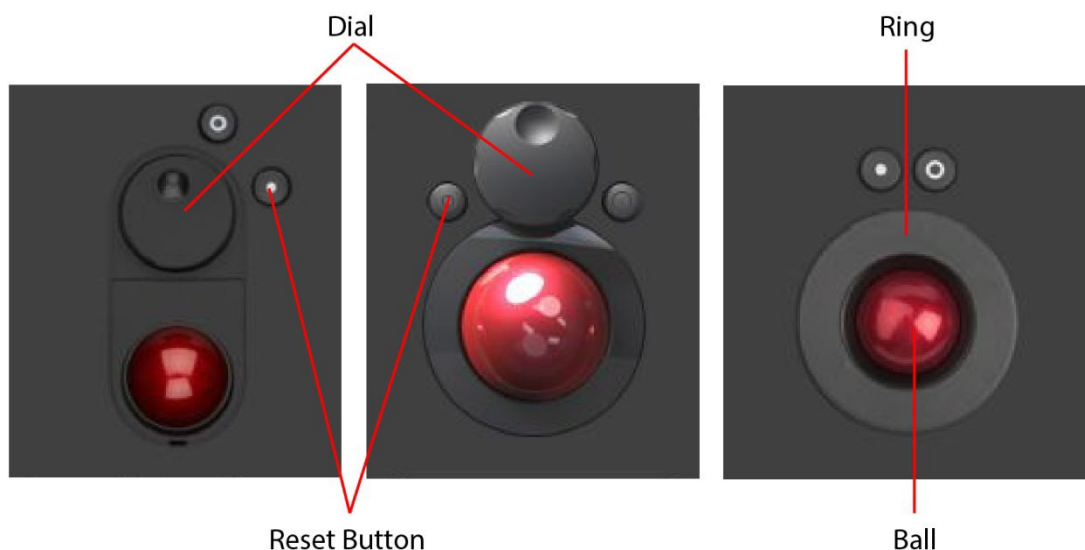
7.7 Knob

You can program the knobs to do anything that your application allows. You can even assign keyboard shortcuts to them, triggering a different keyboard shortcut depending on the direction of rotation. Or you can assign an OSC command.

The only thing to note with a knob is that if you press down lightly on a knob it will reset its value. You cannot remap the reset button – it is reserved as a reset only.

7.8 Trackerball

A trackerball is made up of two things: a ball, and a ring or dial. The ring and dial are essentially the same thing, and what you have depends on what panel you're using. We're just going to refer to ring from now on, but assume we mean dial too.



The ball and ring each have their own reset:



This resets the trackerball.

This resets the ring.

You cannot remap the resets buttons – they are reserved as resets only. The only exception to this is when the trackerball is remapped as a mouse when the reset buttons become left and right mouse buttons.

You can program the ball and ring to do anything that your application allows. You can even assign keyboard shortcuts to them, triggering a different keyboard shortcut depending on the direction of rotation. Or you can assign a OSC commands.

With the ball it's possible to assign a different function to each axis.

7.9 Warp Engine

The Warp Engine allows the user to map any control, on any of their Tangent panels, to any application.

This is done through generating and assigning a script to a control which can be programmed to emulate mouse click, drags, and scrolls. The Warp Engine is built into, and programmed through, the Tangent Mapper. This allows the Tangent panels to take control of any software through the software's UI.

For example, say the software has a slider to control the audio volume, and you adjust the slider by left clicking and holding down on the slider with the mouse, and dragging it left or right. Well, the Warp Engine allows you to associate moving a knob with the sequence of:

- 1) Moving the mouse cursor to the slider.
- 2) Left clicking and holding the mouse button down.
- 3) Moving the mouse cursor left or right as the knob is rotated.
- 4) Releasing the mouse button once knob movement has ceased for a short time.

The only thing you will need to do, aside from generating the scripts, is to find the screen coordinates of the UI control you want to map to your panel. The Mapper has a handy feature that tells you the current location of the cursor for this purpose.

The Warp Engine has its own manual, so if this is something you wish to use then please read [Warp Engine Made Simple](#) manual in addition to this manual.

8. Before you do anything make sure that...

Before you start check the following:



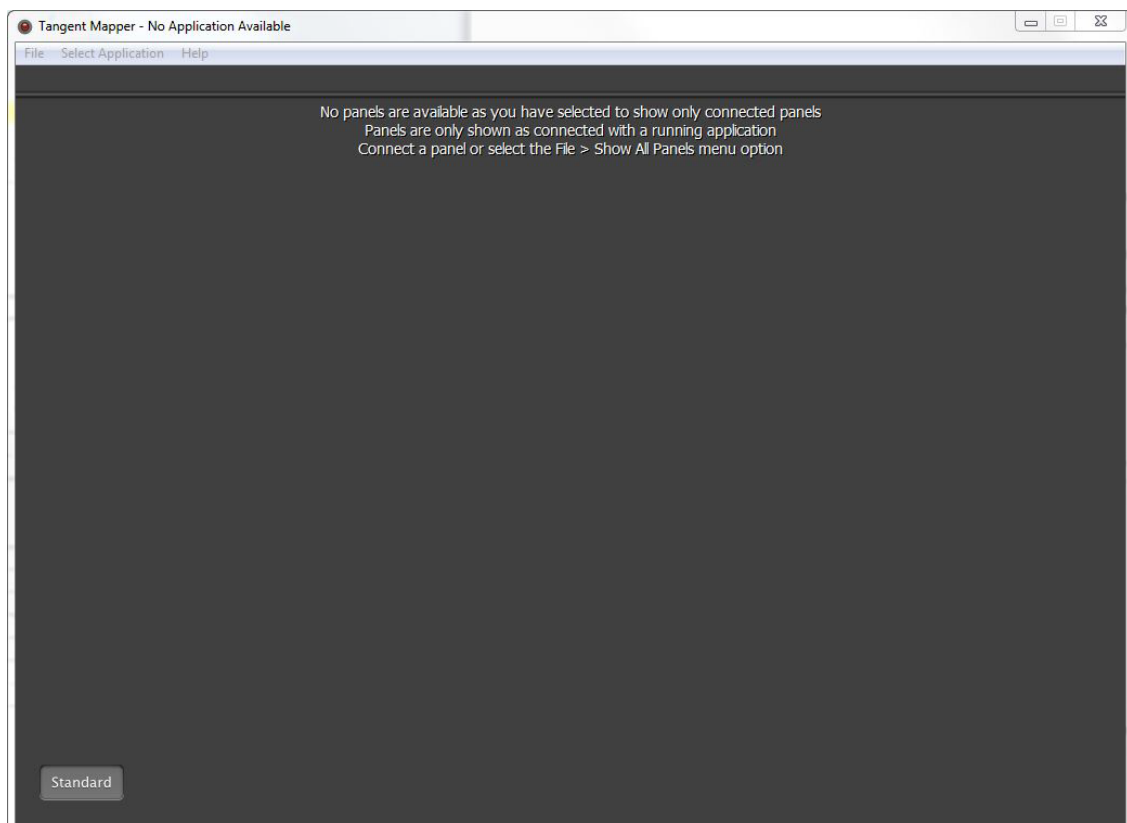
- 1) You must make sure your panel is plugged in.
- 2) The application you want to create a map for is running and in the foreground.
- 3) Check your application supports the Tangent Mapper.
- 4) Check your application has been configured to use our panels.

The Mapper will not show anything unless an application is running and connected to the hub – remember that the Mapper gets the list of controls available from the application.

You also need to have a panel plugged in so the Mapper knows what it's trying to map the controls to.

When you open the Mapper it will show that last active map used for the application. If it's your first time running the Mapper this is most likely to be the default map supplied by your application.

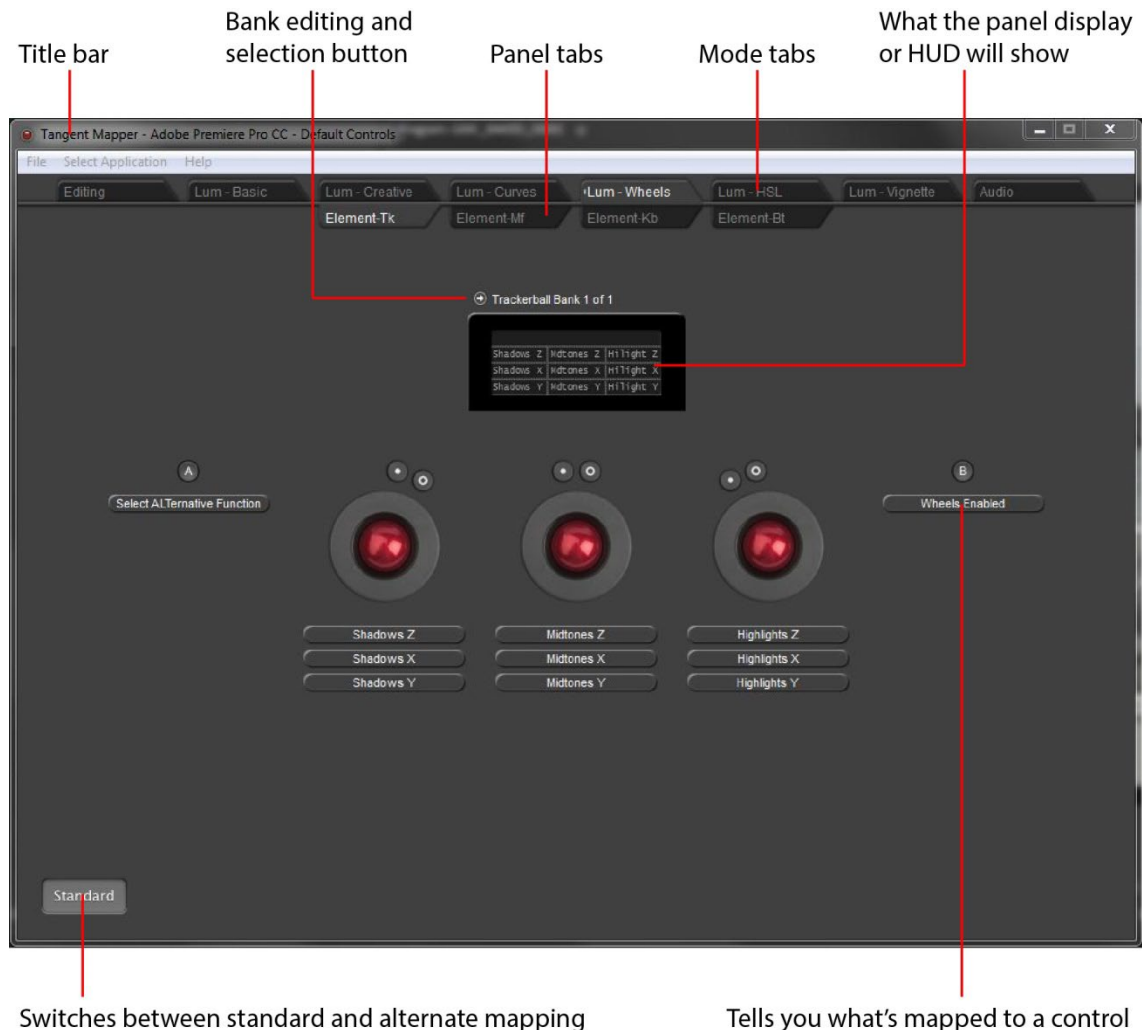
If you haven't got a panel connected or there's no application running you will see this:



Having got the Mapper running and showing a map, let's take a look at the Mapper window.

9. The Mapper window

Let's take a look at what you see in the Mapper window.



9.1 Title bar

The title bar of the window tells you what application is currently selected and what map is currently being used.

9.2 Mode tabs

These are the top row of tabs across the window and show you what modes have been defined. As you click on the tabs you'll see that what is mapped to the panel changes.

The current mode you're about to edit in the Mapper has its name highlighted in the tab.

The current mode the application is currently in is indicated by a white dot next to the name.

You can set the behaviour of the Mapper to follow / not follow the current **mode** of the application you are mapping. See section: **User Preferences menu**.

9.3 Panel tabs

If you have multiple panels connected there will be a tab for each panel. In the above example there is a full set of Element panels connected so there are 4 tabs. If you only have a Ripple or Wave2 connected there will only be one tab.

Where you have multiple panels connected you click on the tab to select that panel for mapping.

9.4 Standard / Alternate mapping button

To quickly see what controls on the panel have alternate mappings assigned to them you can click this button. This switches the view between standard and alternate.

It's important that this button is set to the correct view if you're going to right click on a control to map it. We'll cover this a bit later, but for now remember that this button will affect how a control is mapped.

9.5 Bank editing and selection button

If you left click on the arrow you can step through the banks. In our example above there only one bank and it's for trackerballs only as the TK panel has only trackerballs on it.

If you right click on the arrow you can add and remove banks.

Let's now go on to look at mapping a control.

10. Mapping a control

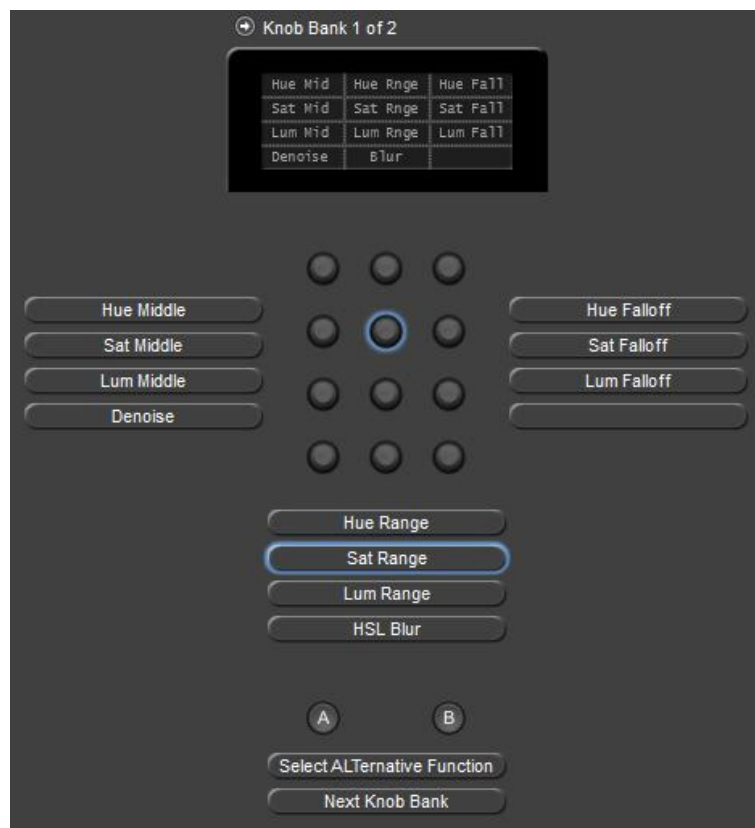
10.1 Before you do anything check the following four things:



- 1) **Make sure you have the correct mode tab selected.**
A common mistake is to have the wrong mode selected and so your control doesn't appear where you expect it to.
- 2) **Make sure you have the correct panel tab selected.**
This only really applies if you have more than one panel connected; a set of Elements for example.
- 3) **Make sure you are in the correct bank.**
This applies if there is more than one bank of controls. A common mistake is to have the wrong bank selected and so the control does not appear where you expect it to.
- 4) **Make sure the standard / alternate button is set correctly.**
This only really matters if you're going to right click on a control to map it.

10.2 Hovering over a control

When you hover the mouse over a control or its label in the Mapper will highlight it. This is useful when you're trying to figure out which label belongs to which control. There's only a limited amount of space in the Mapper window to display all the labels so they're not always beside or immediately next to the control.



10.3 Left click or right click to map a control?

You can map a control by left or right clicking on it, or its label.

10.3.1 Left clicking

Opens a control mapping window which gives you access to all the mapping options, including standard and alternate.

10.3.2 Right clicking

Just opens a pop-up menu of things you can assign to that control. It either assigns it to the standard or alternate mapping depending on what the standard / alternate button is set to. If it's set to standard then it's going to be mapped to the standing mapping, otherwise it'll be mapped to the alternate mapping. The control mapping window will open once you've mapped a control with the right click just in case you want to go on and make further changes.

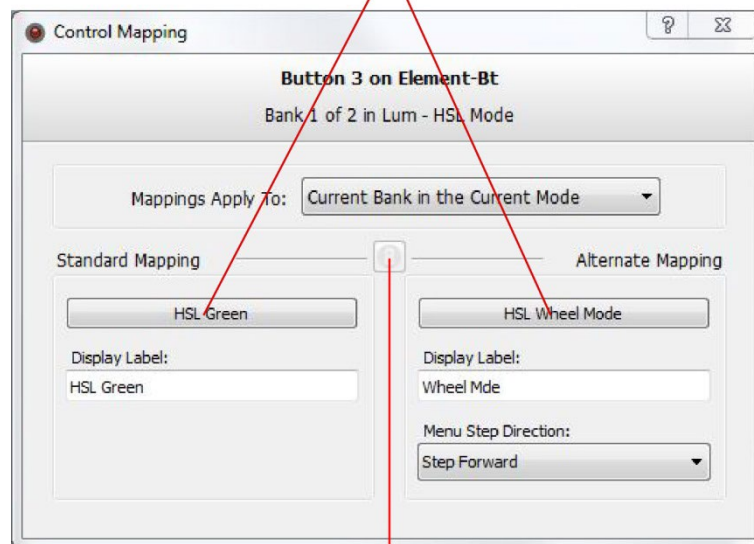
Right clicking on a button or knob is fairly straight forward, however with a trackerball it depends where you click. You will either map the entire trackerball or just one of its axis. We'll cover this **The control mapping window** section of this guide.

10.4 The control mapping window

What the control mapping window shows depends on if it's a button, knob, or tracker ball you're trying to map. We'll now take a look at each one.

10.4.1 Button mapping options

Click on here to get menu of controls you can map to this button



Link standard and alternate mapping

Mappings Apply To

We're going to cover this in its own section later on, but for now make a note that we can apply the mapping we're about to make to more than just the current bank and mode.

Standard Mapping

As you might expect, what is under this heading is what you'll get if you press the button on the panel. If nothing is currently mapped to the button it'll say No Mapping.

Alternate Mapping

This is what you'll get if you hold down the **Select ALternative Function** button at the same time as you press this button on the panel. If nothing is currently mapped to the button it'll say No Mapping.

Display Label

By default this will be filled in with the application's name for the control you have mapped. You can create your own custom label by clicking in this text box and typing in your own label. The label is what appears on the panel's display.

Link standard and alternate mapping

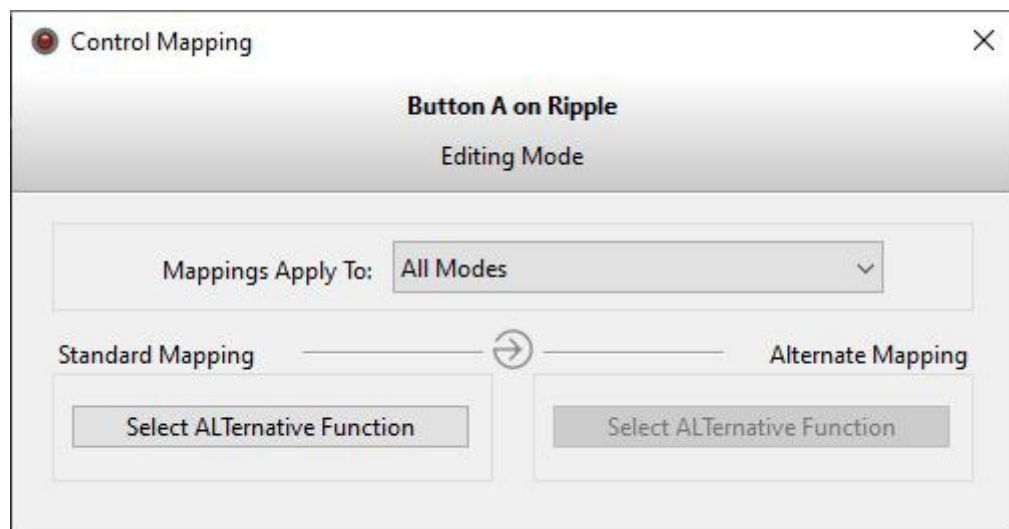
Clicking on this will make the alternate mapping be the same as the standard mapping. This is just a quick way of filling in both the standard and alternate mapping with the same thing.

Menu Step Direction (menu type of control only)

In the example window above, the alternate mapping has a menu type of control assigned to the button. Pressing the button on the panel would step through the menu options. You can change the direction it would step through the menu by selecting the direction here.

10.4.2 Note on assigning Select ALternative Function to a button

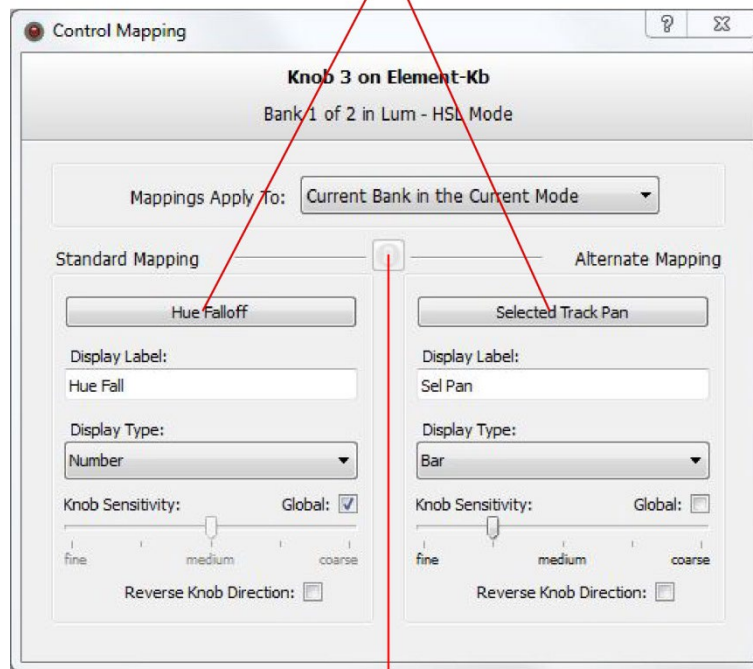
If you program a button to be **Select ALternative Function**, the **alternative** will be greyed out, and also set to be **Select ALternative Function**. This is needed as once in **alternative**, you need to be able to get back out of it.



If you want to lock the **ALternative Function** on with this button, then you can do this by setting the option in the **File > User Preferences** menu. Double pressing the button will now lock the **ALternative function** on, a single press will unlock it.

10.4.3 Knob mapping options

Click on here to get menu of controls you can map to this knob



Link standard and alternate mapping

Mappings Apply To

We're going to cover this in its own section later on, but for now make a note that we can apply the mapping we're about to make to more than just the current bank and mode.

Standard Mapping

As you might expect what is under this heading is what you'll get if you move the knob on the panel. If nothing is currently mapped to the knob it'll say No Mapping.

Alternate Mapping

This is what you'll get if you hold down the **Select ALternative Function** button at the same time as you move this knob on the panel. If nothing is currently mapped to the knob it'll say No Mapping.

Display Label

By default this will be filled in with the application's name for the control you have mapped. You can create your own custom label by clicking in this text box and typing in your own label. The label is what appears on the panel's display.

Link standard and alternate mapping

Clicking on this will make the alternate mapping be the same as the Standard mapping. This is just a quick way of filling in both the Standard and alternate mapping with the same thing.

Display Type

On the panel's display, the knob is normally labelled with the Display Text mentioned above. However, when you move the knob the panel's display can be set to show the value of the control as it changes. Different formats are available, these are:

- **Blank** – no value is displayed.
- **Number** – the actual numerical value of the control is displayed.
- **Bar** – the value is displayed as a bar graph.
- **Percentage** – the value is displayed as a percentage.

Note: If the application does not report the value to the Tangent Hub you will not see it displayed on the panel regardless what this option is set to.

If you are mapping a menu to the knob then you'll not see this option.

Knob Sensitivity

As you would expect this sets the sensitivity of a control. But, and this is very important, it depends on what the Global tick box is set to.

By default Global is ticked, and this means the sensitivity is taken from the **File > Control Map Settings** menu.

If you untick Global, then you can set the sensitivity for just the control you have mapped to this knob.

You can find out more in the **Control Sensitivity** Let's get some basic terms and concepts out of the way first of this guide.

Reverse Knob Direction

This is pretty self-explanatory - if you want the knob to work the other way around then tick this box.

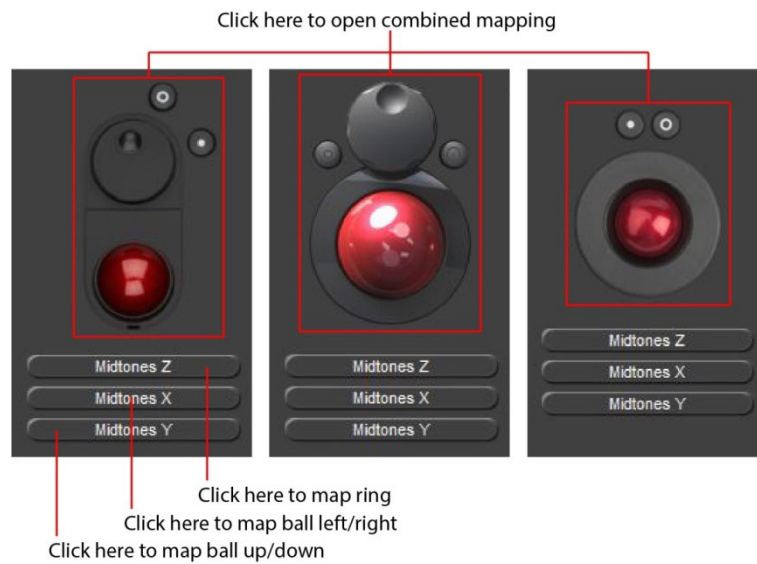
10.4.4 Trackerball mapping options

Where you click on the trackerball in the Mapper determines what you will see in the mapping options. This is because a trackerball is made up of three axis: ball left/right, ball up/down, and ring/dial.

Combined mapping

You can either elect to map the entire trackerball with a **combined** mapping (mapping both the ball and ring), or map each axis of the ball, and the ring individually. You'll note when you go to map a trackerball one of the sub menus is actually called **combined**. An example of a combined mapping would be something like where position is mapped to the ball, and zoom is mapped to the ring. Just think of combined mapping as where the application has already grouped three functions together that naturally map to a trackerball.

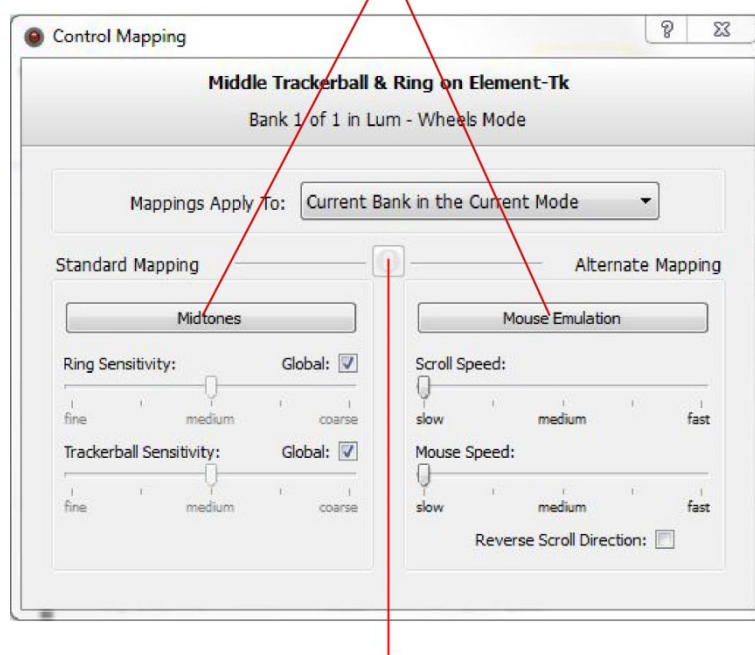
Clicking in the area of the trackerball will bring up the combined mapping options. Clicking on each of the labels will bring up the mapping options for that axis.



The following two images show the difference between the combined and individual axis mapping windows.

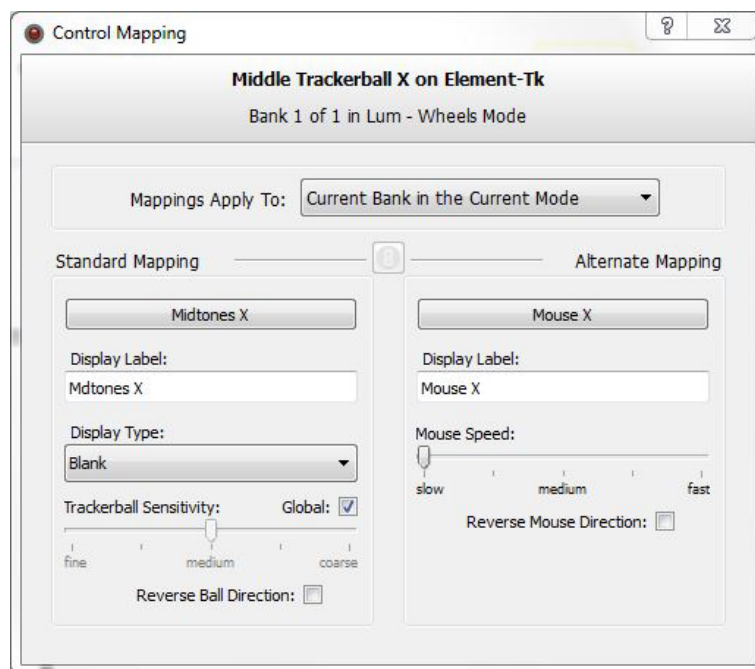
Combined ball mapping options:

Click on here to get menu of controls you can map to this trackerball



Link standard and alternate mapping

Individual axis mapping options:



Mappings Apply To

We're going to cover this in its own section later on, but for now make a note that we can apply the mapping we're about to make to more than just the current bank and mode.

Standard Mapping

As you might expect what is under this heading is what you'll get if you move the trackerball on the panel. If nothing is currently mapped to the trackerball it'll say No Mapping.

Alternate Mapping

This is what you'll get if you hold down the **Select ALternative Function** button at the same time as you move this trackerball on the panel. If nothing is currently mapped to the trackerball it'll say No Mapping.

Display Label (individual axis only)

By default this will be filled in with the application's name for the control you have mapped. You can create your own custom label by clicking in this text box and typing in your own label. The label is what appears on the panel's display.

Link Standard and alternate mapping

Clicking on this will make the alternate mapping be the same as the Standard mapping. This is just a quick way of filling in both the Standard and alternate mapping with the same thing.

Display Type (individual axis only)

On the panel's display, the trackerball is normally labelled with the Display Text mentioned above. However, when you move the trackerball the panel's display can be set to show the value of the control as it changes in different formats. These are:

- **Blank** – no value is displayed.
- **Number** – the actual numerical value of the control is displayed.
- **Bar** – the value is displayed as a bar graph.
- **Percentage** – the value is displayed as a percentage.

Note: If the application does not report the value to the Tangent Hub you will not see it displayed on the panel regardless what this option is set to.

If you are mapping a menu to the trackerball then you'll not see this option.

Ring / Trackerball Sensitivity

As you would expect this sets the sensitivity of a control. But, and this is very important, it depends on what the Global tick box is set to.

By default Global is ticked, and this means the sensitivity is taken from the **File > Control Map Settings** menu.

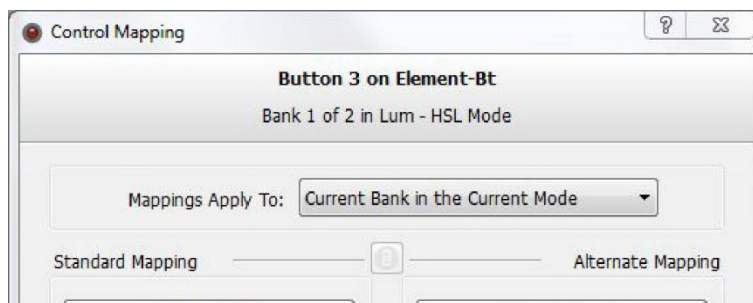
If you untick Global, then you can set the sensitivity for just the control you have mapped to this knob.

You can find out more in the section of this guide.

Reverse Ball / Ring Direction

This is pretty self-explanatory - if you want the control to work the other way around then tick this box.

If you want to change the direction of the axis of the ball you need to click on the label in the Mapper in order to call up individual axis mapping options.

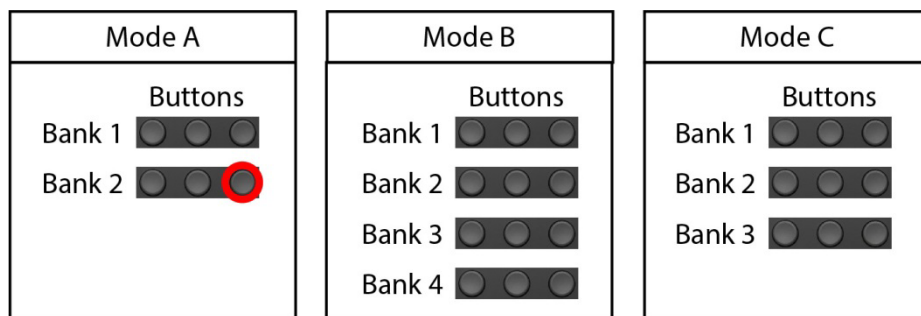
10.5 Mappings apply to option

When you go to map a knob, button, or trackerball you will be given the option as to how you want the mappings applied.

Clicking on the **Mappings apply to** menu gives you the following options:

- **Current bank in the current mode.**
- **All banks in all modes.**
- **Current bank in all modes.**
- **All banks in current mode** (only available if there's more than one bank).

Let's now look at what each option means. To help illustrate what happens imagine we have a simple panel with just 3 buttons, and three modes; A, B and C. Mode A has 2 button banks, mode B has 4 button banks, and mode C has 3 button banks. Now imagine we want to map the third button in bank 2 of mode A. This all sounds a bit complicated so we'll draw what we mean – the button in question is circled in red:

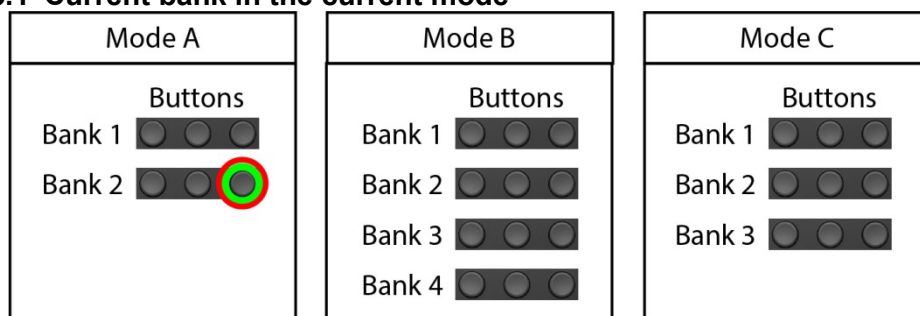


Now, for each of the possible **Mappings apply to** settings we'll show the result. The buttons that end up being mapped are circled in green.

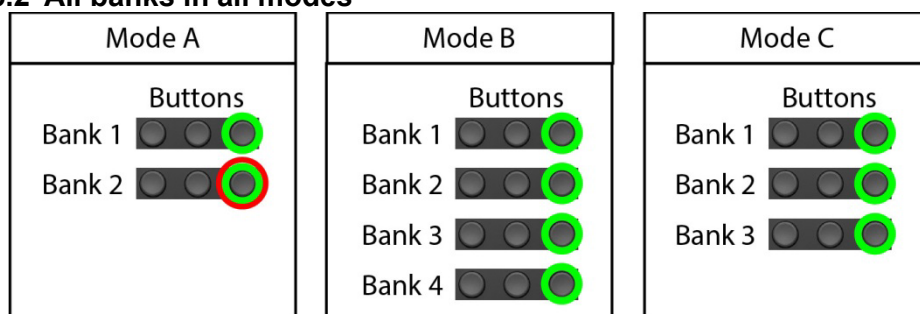


Note: If you choose anything other than “current bank in the current mode” you need to be aware you’ll be potentially overwriting what was ever mapped to the same control in other modes and banks.

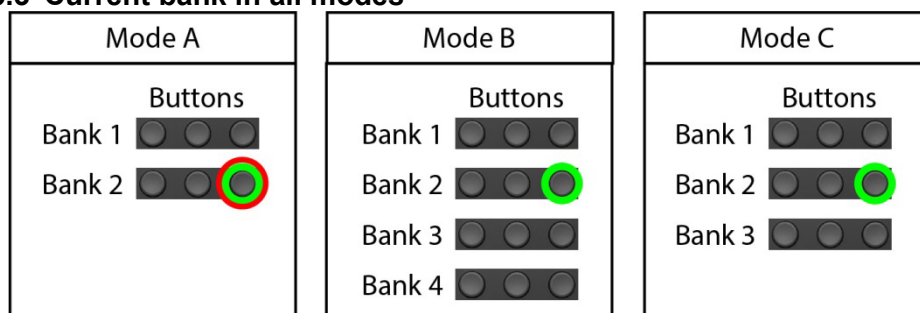
10.5.1 Current bank in the current mode



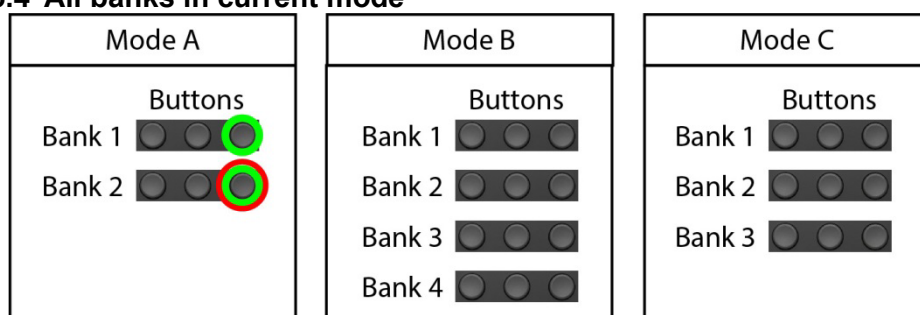
10.5.2 All banks in all modes



10.5.3 Current bank in all modes



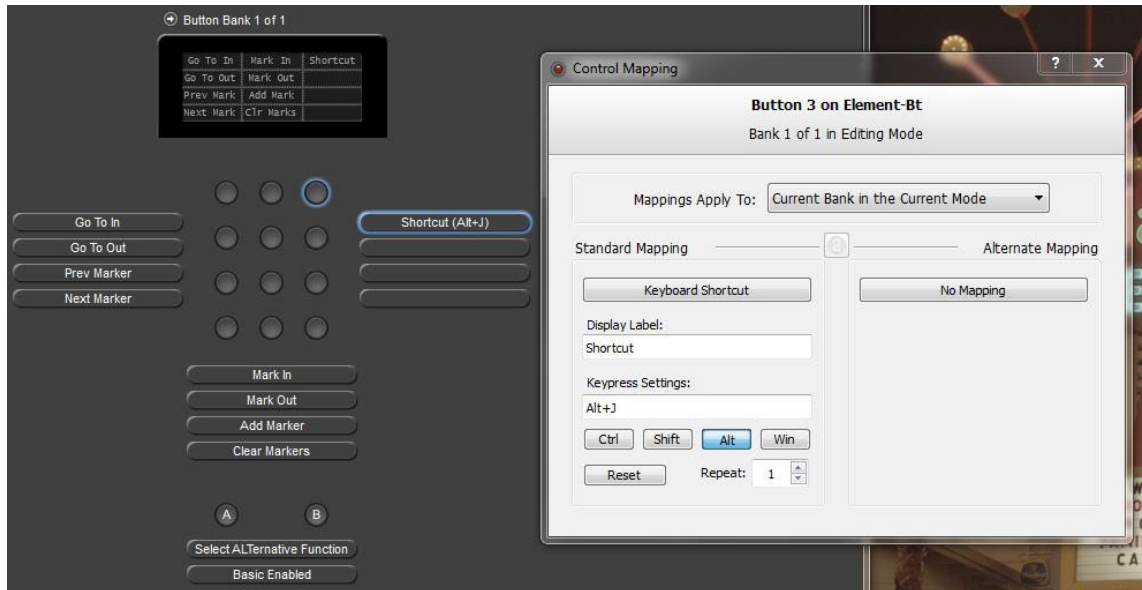
10.5.4 All banks in current mode



10.6 Assigning keyboard shortcuts to a button

You can assign a keyboard shortcut to a button.

Start by right clicking on the button and assigning **Keyboard Shortcut** to it.



A keyboard shortcut is limited to a single key to which you can apply the usual modifiers such as CTRL and SHIFT. It's not possible to do macros.

In our example we have assigned the following to the button:

- ALT + J

Here's the steps to do this:

1. Click in the text box under **Keypress Settings**.
2. Type 'J'
3. Press the **Alt** button in the window.

Repeat

This determines how many times the key press is sent out per button press. Only the key press is sent out each time with the modifier being held "on" throughout the entire number of **Repeat** presses.

Reset

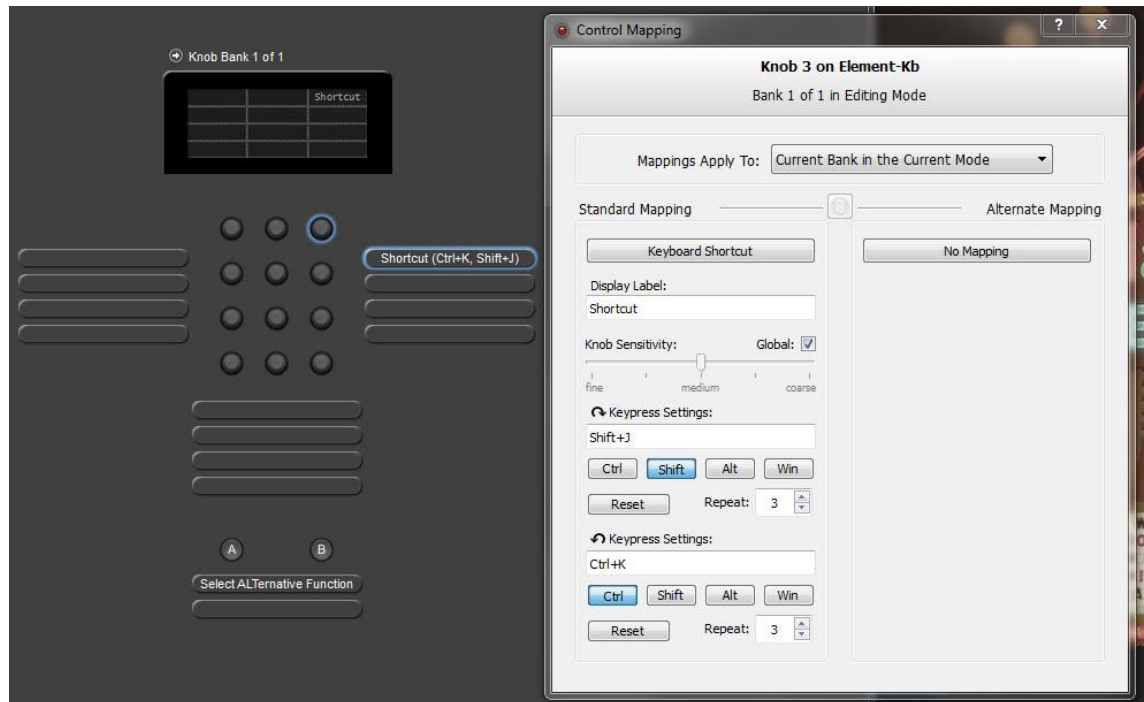
If you make a mistake and want to clear the selected key and its modifiers, press the **Reset** button.

As with all controls you can customise the label for this control by typing in your own text into the **Display Label** text entry box.

10.7 Assigning keyboard shortcuts to a knob or trackerball

You can assign a keyboard shortcut to a knob or trackerball, with the direction of rotation triggering a different shortcut. The process is the same for either a knob or a trackerball axis, but we'll take a look at assign a knob in this example.

Start by right clicking on the knob and assigning **Keyboard Shortcut** to it.



A keyboard shortcut is limited to a single key to which you can apply the usual modifiers such as CTRL and SHIFT. It's not possible to do macros.

In our example we have assigned the following:

- Rotate to the right = SHIFT + J
- Rotate to the left = CTRL + K

Here's the steps to do this:

4. Click in the text box for rotate right.
5. Type 'J'
6. Press the **Shift** button in the window.
7. Click in the text box for rotate left.
8. Type 'K'
9. Press the **Ctrl** button in the window.

Repeat

This determines how many times the key press is sent out per step the knob is rotated. How far you need to rotate the knob between steps is determined by the setting of the knob sensitivity. Only the key press is sent out each time with the modifier being held "on" throughout the entire number of **Repeat** presses.

Reset

If you make a mistake and want to clear the selected key and its modifiers, press the **Reset** button.

As with all controls you can customise the label for this control by typing in your own text into the **Display Label** text entry box.

10.8 Mouse emulation – turning a trackerball into a mouse

You can turn a trackerball into a mouse:

- The ball will move the cursor around.
- The ring acts as a scroll.
- The reset buttons act as the mouse buttons.

There's two ways you can access mouse emulation:

- **Assigned like a normal control**

You can have the trackerball always assigned as mouse, in much the same way any other control is assigned to it.

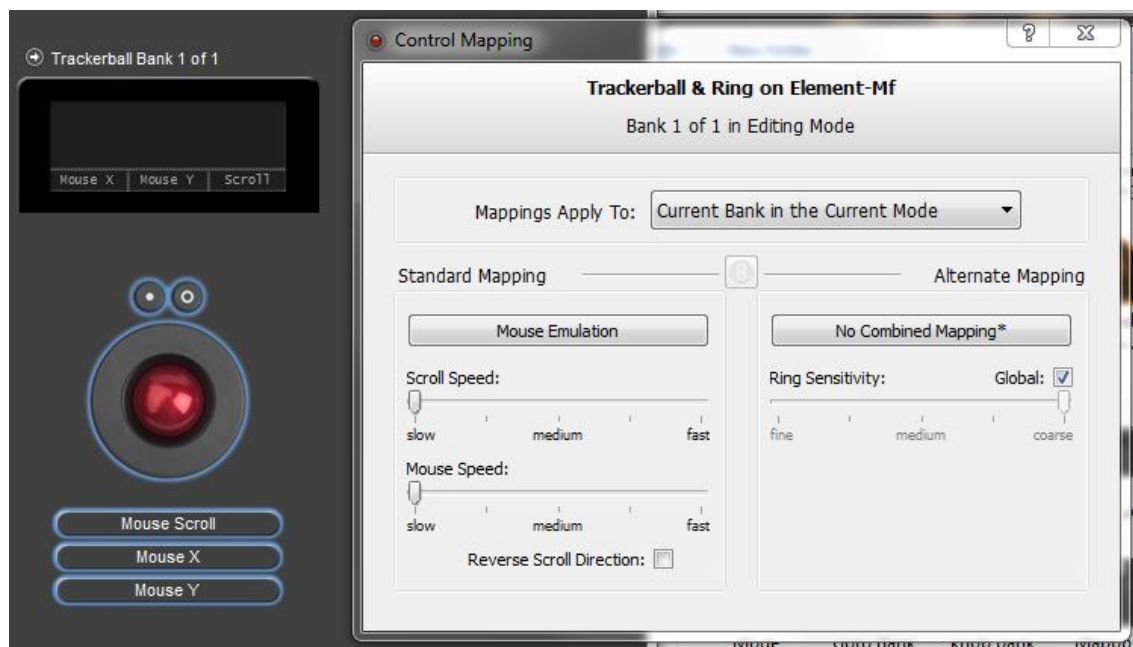
Or...

- **Toggled on and off using a button**

You can have the trackerball turn into a mouse by pressing a button to toggle the mouse assignment on and off.

10.8.1 Assigned like a normal control

Right click on the trackerball and select **Mouse Emulation** from the list of controls you can assign to the trackerball.



Mouse speed

Sets how far the mouse scroll moves for every increment of movement the ring makes.

Scroll speed

Sets how far the mouse moves across the screen for every increment of movement the ring makes.

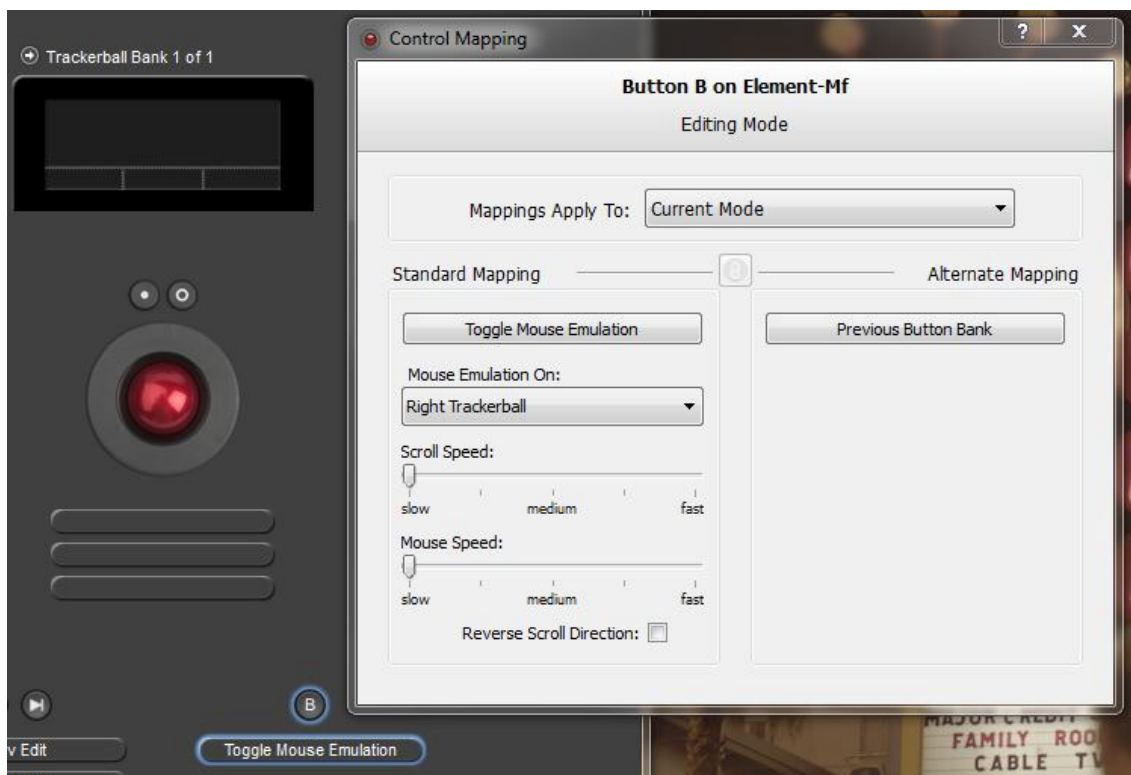
Reverse scroll direction

Ticking this box changes the “direction” of the scroll emulation when you rotate the ring.

10.8.2 Toggled on and off using a button

First decide which button you want to toggle the mouse on and off with. Then right click on the button and select **Toggle Mouse Emulation** from the list of controls you can assign to the button. Note you are not mapping the trackerball, you are actually mapping a button which, when you press it, will toggle the mouse emulation on and off for a chosen trackerball. In the example below we've chosen to map the 'B' button to do this.

 The button you choose must be on a panel that has a trackerball on it. For example you can't use a button on the Element-Bt panel.



“Mouse Emulation On:”

This selects which trackerball will be turned into a mouse when the button is pressed. For example, on the Element-Tk panel the choice will be left, middle, or right. On the Mf panel there's only one choice possible which is as there's only one trackerball.

Mouse speed

Sets how far the mouse scroll moves for every increment of movement the ring makes.

Scroll speed

Sets how far the mouse moves across the screen for every increment of movement the ball makes.

Reverse scroll direction

Ticking this box changes the “direction” of the scroll emulation when you rotate the ring.

10.9 I can't find the control I want in the Mapper

If you remember, back in the **Tangent Hub and Tangent Mapper overview** section of this guide, we said it's the application that tells the Hub what controls it has available to be mapped. So, if the Mapper isn't showing a control it'll be because the application hasn't told the Mapper that the control is available to be mapped. There's nothing Tangent can do to make the control magically appear, the only thing you can do is to contact the applications maker and ask them to add it to the list of controls they send to the Tangent Hub.

The only other possibility is that the control is in fact something that is normally accessed via a keyboard shortcut. In this case just choose to map the keyboard shortcut to the control on the panel.

11. Banks – adding / deleting / selecting them

We introduced the concept of banks in the **Let's get some basic terms and concepts out of the way first** section of this guide. If you haven't read this section then do it now. Hopefully you understand that a bank is just another layer of controls you can step to, where you have more controls in your application than you have physical controls on the panel.

11.1 Before you do anything check the following two things:



1) Make sure you have the correct mode tab selected.

A common mistake is to have the wrong mode selected and so your control doesn't appear where you expect it to.

2) Make sure you have the correct panel tab selected.

This only really applies if you have more than one panel connected.

11.2 Knobs, buttons, and trackerballs can all be banked

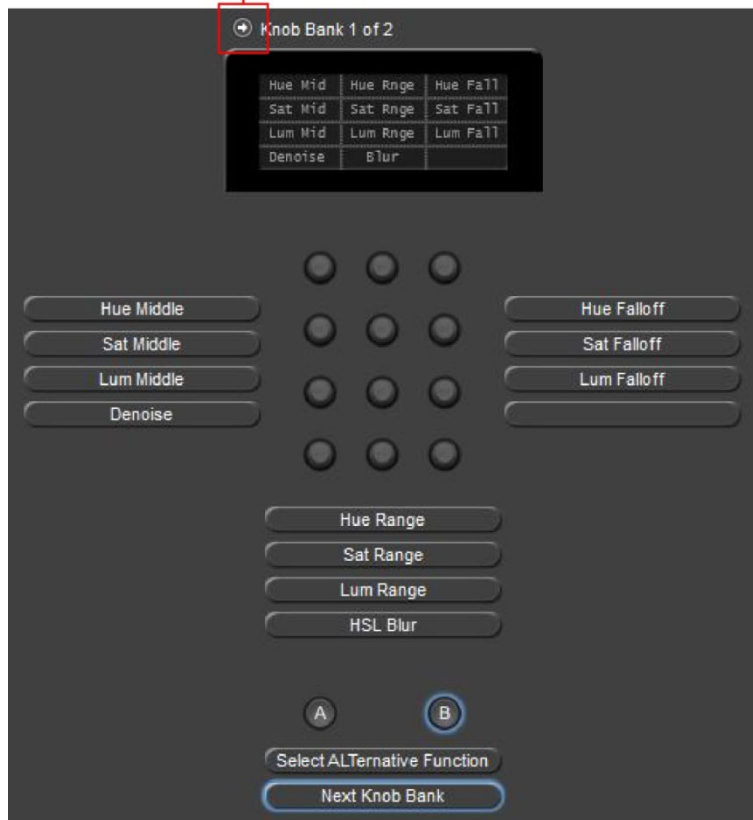
Knobs, buttons, and trackerballs each have their own banks which operate independently of each other. The principle is the same: you create, edit, delete, and control them in the same way.

Some controls can't be banked, we'll cover these at the end of this section.

11.3 Controls in the Mapper that are associated with banks

Let's look at an example using the Element-Kb panel, but remember the same principles apply to buttons and trackerballs too.

Bank editor and selection button



There's a couple of things to note in our example before we go any further: the **Bank editor and selection** button, and the B button which has **Next Knob Bank** assigned to it. The next couple of sections discuss what these do.

11.4 Bank editor and selection button

You find this button next to groups of controls that can be banked together. It's not a button on the panel, it's a menu button on the Mapper display that allows you to select which bank you're editing in the Mapper, and add / remove banks. Note it only operates on the group of controls it's associated with.

In our example with the Kb panel we have 2 banks. Remember there will always be at least 1 bank.

You can either left click or right click on this button to do different things. We'll now take a look at what the options are.

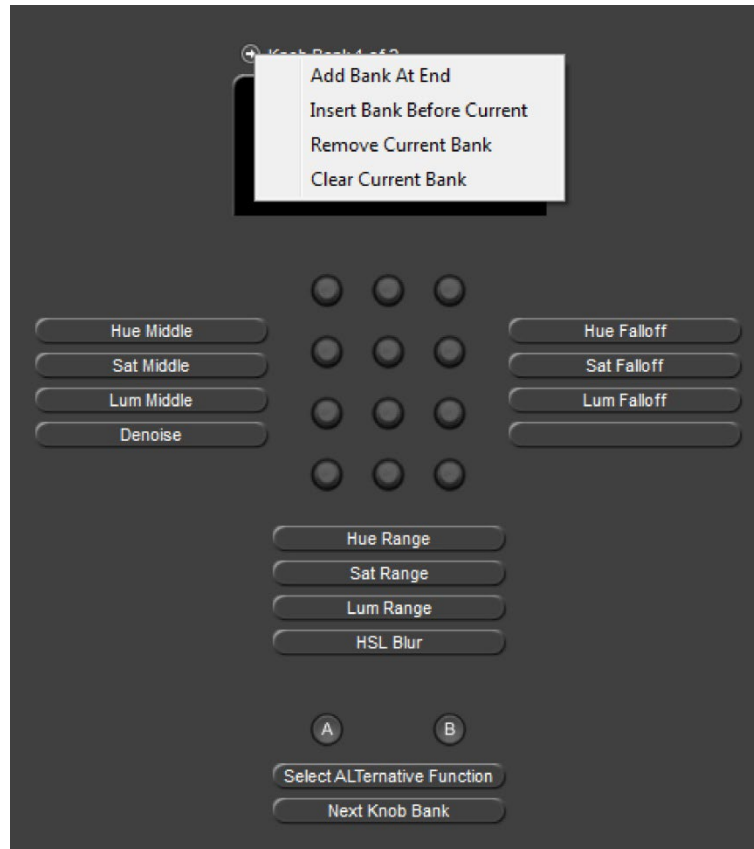
11.4.1 Left click

If you left click on the Bank editor and selection button you step through all the banks that have been created.



11.4.2 Right click

Right clicking on the Bank editor and selection button brings up a menu with the following options:



Add Bank At End

This adds an empty bank at the end of the list of current banks. When you add a bank, if any of the controls in other banks have been mapped to be all banks then these will automatically be copied into the new bank. See the section of this guide.

One final thing to note when you Add Bank At End; the Mapper will not update to show that bank, you need to left click the Bank editor and selection button to go to that bank.

Insert Bank Before Current

Inserts a bank before the current bank you're on in the Mapper.

When you insert a bank, if any of the controls in other banks have been mapped to be all banks then these will automatically be copied into the new bank. See the **Mappings apply to option** section of this guide.

Remove Current Bank

Deletes the current bank you're on in the Mapper.

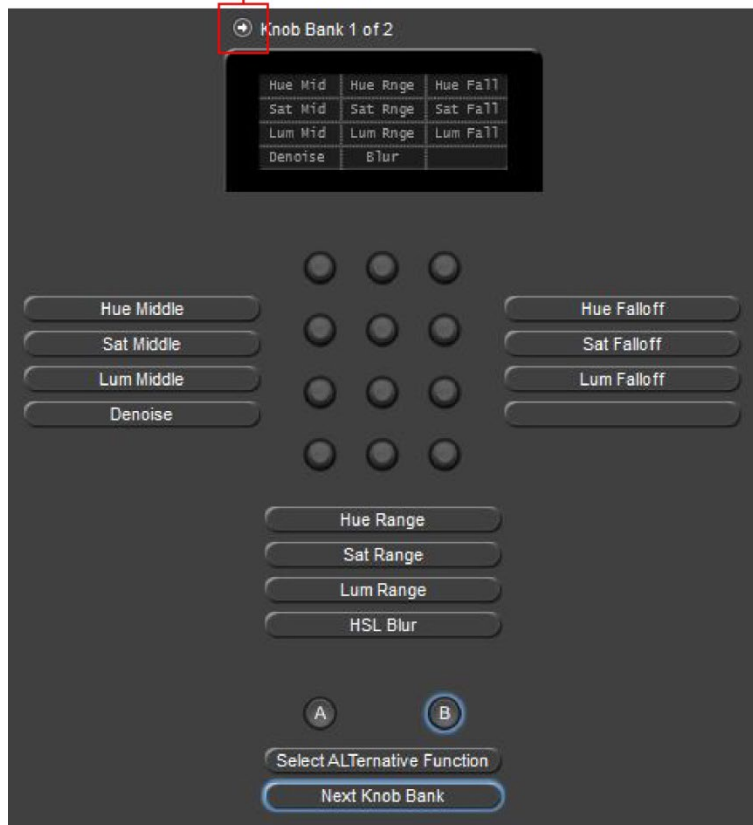
Clear Current Bank

Clears all mapping within the current bank you're on in the Mapper.

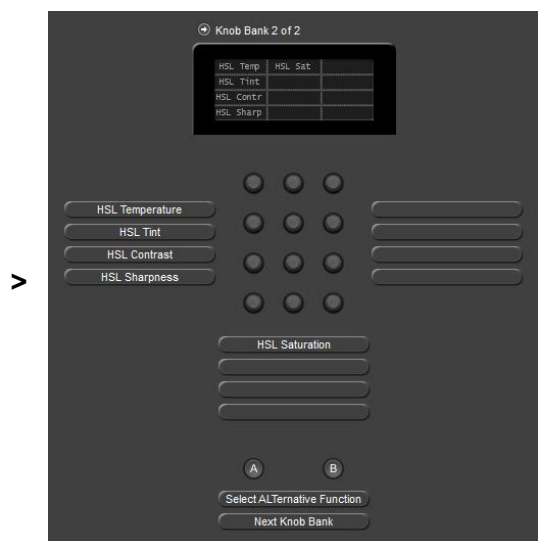
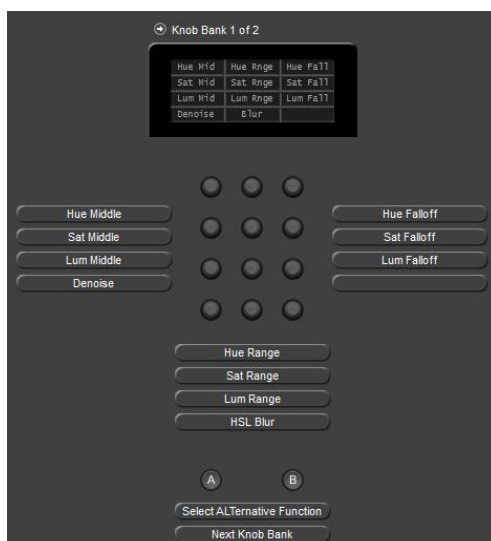
11.5 Moving between banks using your panel – Previous / next buttons

Having created some banks you of course need to move between them on the actual control panel. Let's take a look again at the Element-Kb example we started with. Next to the Bank editing and selection button you can see it says "Knob Bank 1 of 2" which means there are two banks you can switch between.

Bank editing and selection button



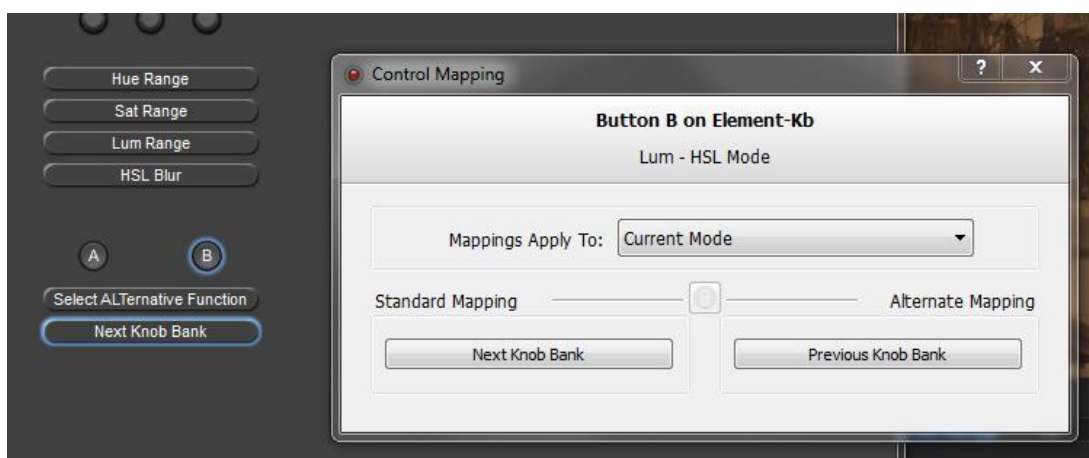
You'll notice the B button has **Next Knob Bank** assigned to it (it's highlighted in blue in the image above). If you press the B button on the panel, you'd step forward to the next bank.



That's great, but it means you'd have to keep pressing the **Next Knob Bank** button until you got back to the beginning if you wanted to go back to bank 1. This might be ok if you only have a couple of banks, but what if you have 10 banks? It'd be a little tedious to keep stepping forward until you got back to the bank you wanted! There is a **Previous Knob Bank** function you can assign to a button which lets you step in the other direction. Now you can go backwards and forward through all the banks.

In the example below you can see we have assigned **Next Knob Bank** to the standard mapping for the button, and **Previous Knob Bank** for the alternate mapping for the button. You'll notice that the A button has **Select ALternative Function** assigned to it. Putting it all together what we get is:

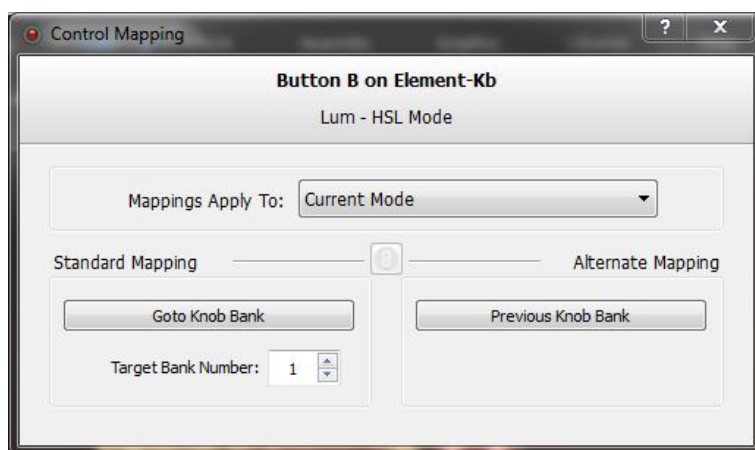
- Pressing just B steps you to the next bank.
- Pressing and holding A whilst you press B steps you to the previous bank.



Note that A and B buttons can be mapped to do any function, and the next and previous knob banks functions can be mapped to any button on your panel. We've just used A and B in our example for convenience.

11.6 Go to a specific bank using your panel – Goto Bank button

We've looked at stepping to the previous and next bank, but there's also a way to go to a specific bank number. Sticking with our example of the knobs of the Kb panel, you just assign to the button to be **Goto Knob Bank**. Of course there a similar function for button and trackerball banks.



The **Target Bank Number** is where you set which bank will be selected when you press the button.

11.7 What controls have banks on the various Tangent panels

In the following pictures of the various Tangent panels the controls which are part of a bank are shown grouped in red.

11.7.1 Ripple



The A and B buttons aren't part of any bank, but the three trackerballs are.

Even though the buttons have A and B on them, they can be used for anything you want.

11.7.2 Wave / Wave2



Note only the 9 knobs and 9 buttons around the displays are part of a bank.

Even though some buttons have printed labels on them, they can be used for anything.

11.7.3 Element



Note that the A and B buttons, and transport buttons are not part of any bank.

Even though some buttons have printed labels on them, they can be used for anything.

11.7.4 Arc



On the Navigation panel there are three groups of buttons that are treated as three independent button banks. They are referred to as Left, Middle, and Right bank.

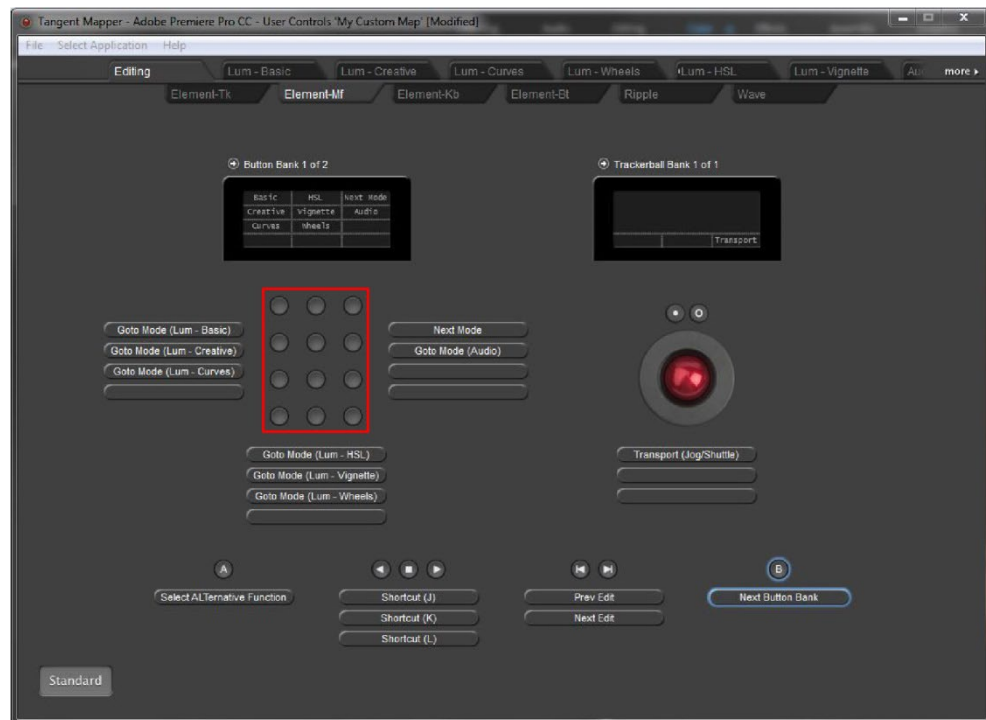
The two buttons above each trackerball are reserved as resets for the ball and ring and aren't part of any bank.

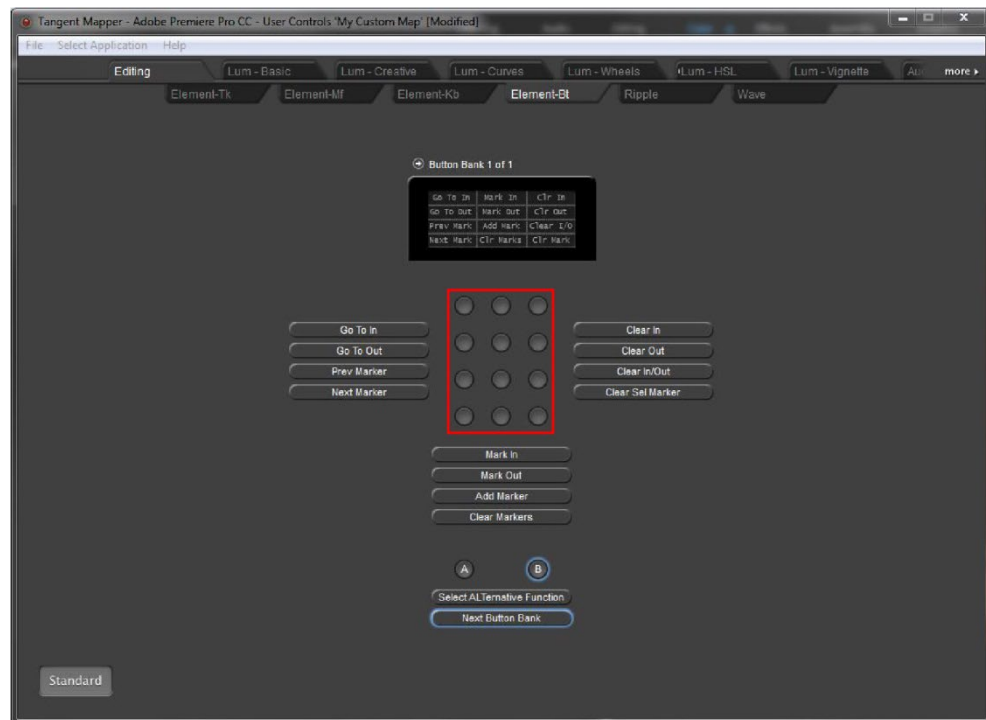
Any other buttons are not part of a bank.

11.8 Independent panel banks – changing bank on just one panel and not all panels

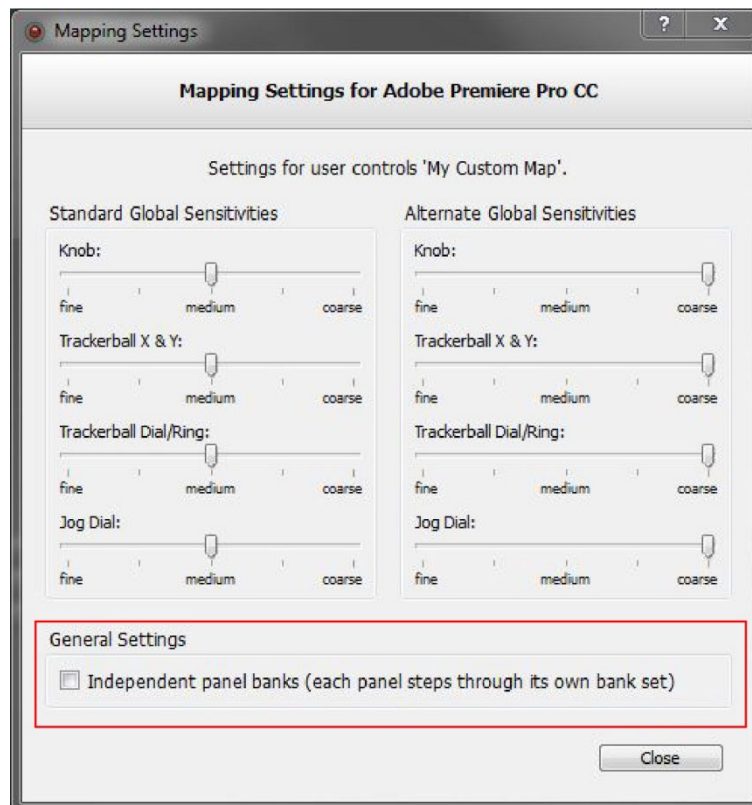
If you have more than one panel connected - you have the Element panels for example - then pressing previous / next bank buttons can either step through banks on just that panel, or across all panels.

Let's look at the example of the Element-Mf and Element-Bt panels being used together. Each has a group of 12 buttons which are part of banks. The buttons grouped with banks are highlighted in red in the next two images. Note the **Next Button Bank** function has been assigned to the 'B' button on both panels.





The result of pressing the 'B' button will do one of two things based on the Mapper **File > Control Map Settings...** window. Let's take a look at that window now.



As you can see under **General Settings** there is a tick box labelled **Independent panel banks**.

11.8.1 Independent panel banks - ticked

With this box ticked, pressing the 'B' button on the Mf panel would only change the bank for the buttons on the Mf panel. Press the 'B' button on the Bt panel would only change the bank for the buttons on the Bt panel.

11.8.2 Independent panel banks - unticked

With this box unticked, pressing the 'B' button on the Mf or the Bt panel would change the bank for the buttons on both the Mf and Bt panel.

Let's say the Mf panel had 4 button banks and the BT on had 2. As you stepped through the button banks everything would work as expected for the first two steps. But when the Mf steps to the third bank you'll see the Bt display go blank, and the same for the fourth step, until we go back round to the first bank when everything is back in step again. This is because the BT has no third or fourth bank, so it has nothing to display for these. Hopefully the table below explains this better

	Bt has 2 banks	Mf has 4 banks
Step to Bank 1	Bt Bank 1 is displayed	Mf Bank 1 is displayed
Step to Bank 2	Bt Bank 2 is displayed	Mf Bank 2 is displayed
Step to Bank 3	Display is blank	Mf Bank 3 is displayed
Step to Bank 4	Display is blank	Mf Bank 4 is displayed

If you wanted to map something to banks 3 and 4 on the Bt panel, you would will need to go into the Mapper and actually add these banks. Until you do this they are just two empty banks you can't access as they do not exist

Just to finish up this section, in case you haven't realised, tick box for **Independent panel banks** applies to knobs as well as trackerballs. Remember these each have their own set of banks which work independently from each other.

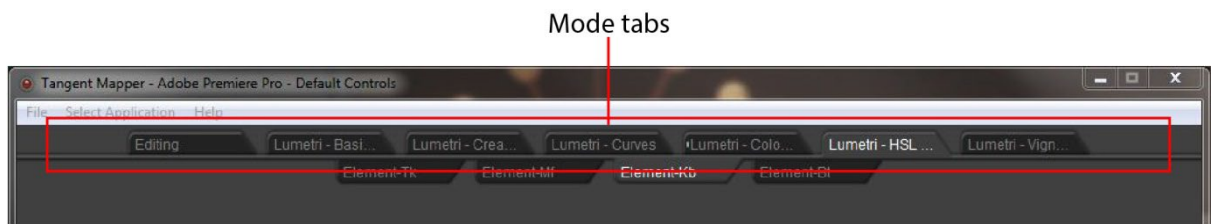
11.9 You cannot gang button, knob, and trackerball banks together

There is no function to step through all button, knob, and trackerball banks together – by that we mean ganged together. Each control type has its own independent bank system.

12. Modes – adding / deleting / selecting them

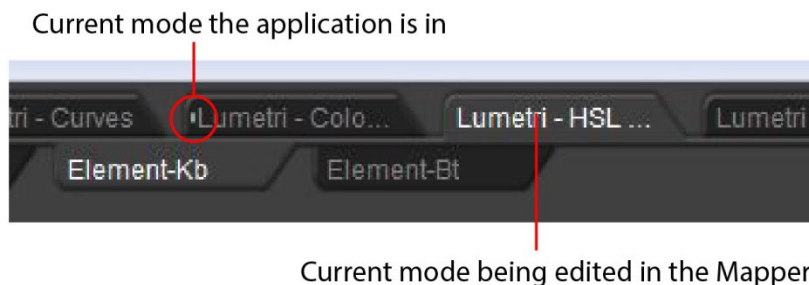
Let's quickly recap what learnt about modes at the start of this guide where we discussed terms used. Within an application there may be different modes of working, for example you might have a mode for primary colour correction, a mode for secondary colour correction, and a mode for noise reduction. As you switch modes in the application, the controls on the panel automatically change to reflect those related to that mode. Normally an application will have defined the modes, but you can add your own custom modes.

The modes available in an application are shown across the top of the Mapper window in tabs. Both application defined and custom modes are shown.



It should be noted that some applications do not make use of modes so there will only be one tab.

The highlighted tab shows which mode is currently selected for editing in the Mapper. The mode that your application is currently in has a little white marker on the left of the tab.



A common mistake is not having the right mode selected in the Mapper when you go to edit a control.

12.1 Difference between application defined modes and your own custom modes

Before we go on to talk about editing modes and defining your own we need to explain the difference between modes defined by an application and your own custom modes.

12.1.1 You can't delete modes defined by an application

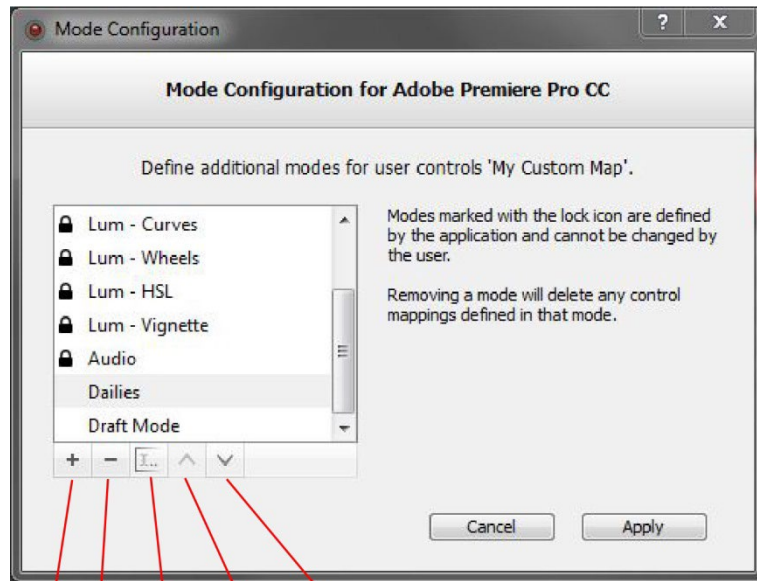
Modes defined by an application can't be deleted. However, you can customise the controls in them, and save the map out as your own custom map. The modes are selected by using your application user interface, or by pressing a button on the panel that been assigned to change the mode.

12.1.2 Custom modes you add don't automatically get selected by the application

If you add your own custom mode, your application will not know of its existence, so there is no way for an application to automatically change to your custom mode. You have to select the mode manually by assigning a button on the panel to go to that mode.

12.2 Adding and deleting modes

To add or delete a mode you need to go to the Mapper **File > Edit Modes...** menu. This will open the Mode Configuration window.



Move selected mode down position in tabs
Move selected mode up position in tabs
Rename mode
Delete selected mode
Add a mode

12.2.1 Add a mode

Clicking on the '+' button will add a mode. You can then type in the name of the mode. Click **Apply** when you're done.

12.2.2 Delete selected mode

First highlight the mode you want to delete. Then click the '-' button. Note you can't delete a mode with a padlock icon next to it as it's an application defined mode. Click **Apply** when you're done.

Any mode with a padlock icon next to it can't be deleted. This is a mode defined by an application.

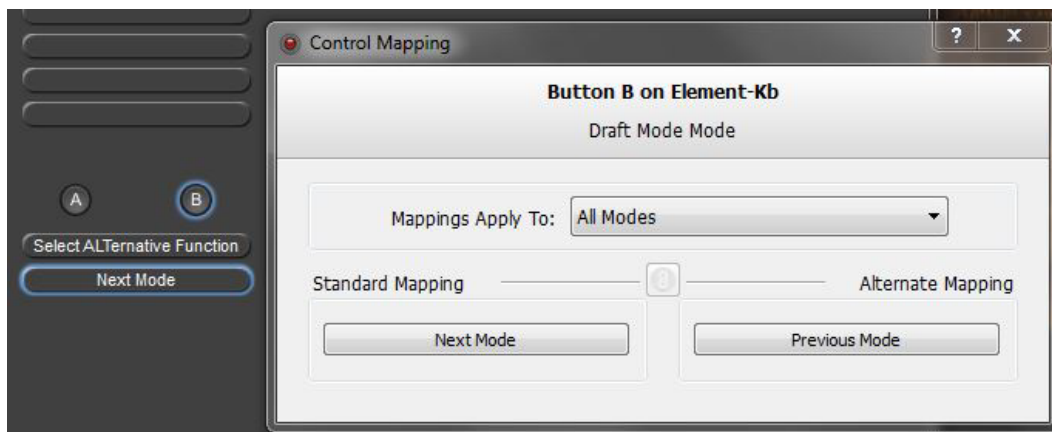
12.2.3 Change the position of a mode in the mode tabs in the Mapper

If you add a mode, it will appear in the mode tabs across the top of the Mapper window after any application defined modes. You can change the order the custom modes appear in the tab by using the up and down arrow buttons. Note custom modes will always appear after application defined modes, you cannot position them before within the application defined modes.

Click **Apply** when you're done.

Once you've added a new mode you can add controls to back in the main Mapper window. Just remember to select it's tab in the mode tabs!

12.3 Moving between modes using your panel – Previous / next buttons



Take a look at the above example. The highlighted B button has **Next Mode** assigned to it. Pressing this button on the actual panel will step you through the modes in the order they appear in the mode tabs.

If you had a lot of modes this would be pretty tedious to repeatedly step through them all to get back to the mode you want. So we've assigned the alternate mapping to be **Previous Mode**. You'll notice that the A button has **Select ALternative Function** assigned to it. Putting it all together what we get is:

- Pressing just B steps you to the next mode.
- Pressing and holding A whilst you press B steps you to the previous mode.

Note that A and B buttons can be mapped to do any function, and the next and previous mode functions can be mapped to any button on your panel. We've just used A and B in our example for convenience.

Make sure you have the “Mappings Apply To” set correctly

A common mistake is to have the wrong “Mappings Apply To” selected. In our example we have it set to **All Modes** meaning that this button will do the same thing in all modes. If you don't set it to be in all modes then when you step to the next mode, the button will no longer be there and you won't be able to continue to step through the modes using this button.



In a similar way, make sure you have taken into consideration what banks you have for buttons.

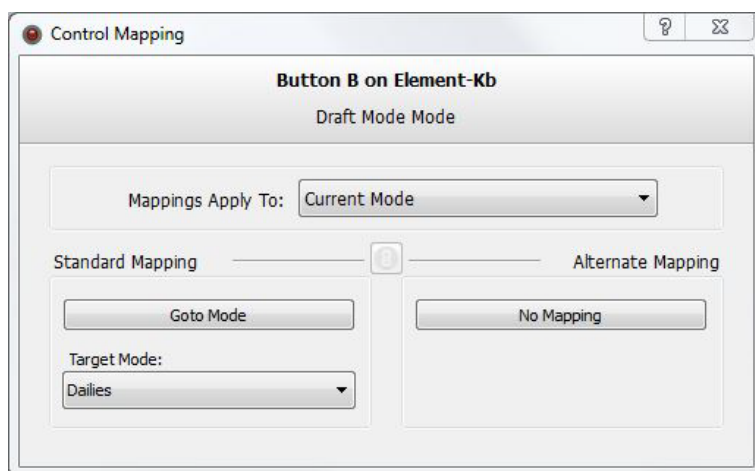
The most suitable choices we suspect you want are:

- All banks in all modes.
- Current bank in all modes.

If you're unsure what's best then see **Mappings apply to option** in the **Mapping a control** section of this guide.

12.4 Go to a specific mode using your panel – Goto Mode button

We've looked at stepping to the previous and next mode, but there's also a way to go to a specific mode. To do this we assign the **Goto Mode** function to a button.

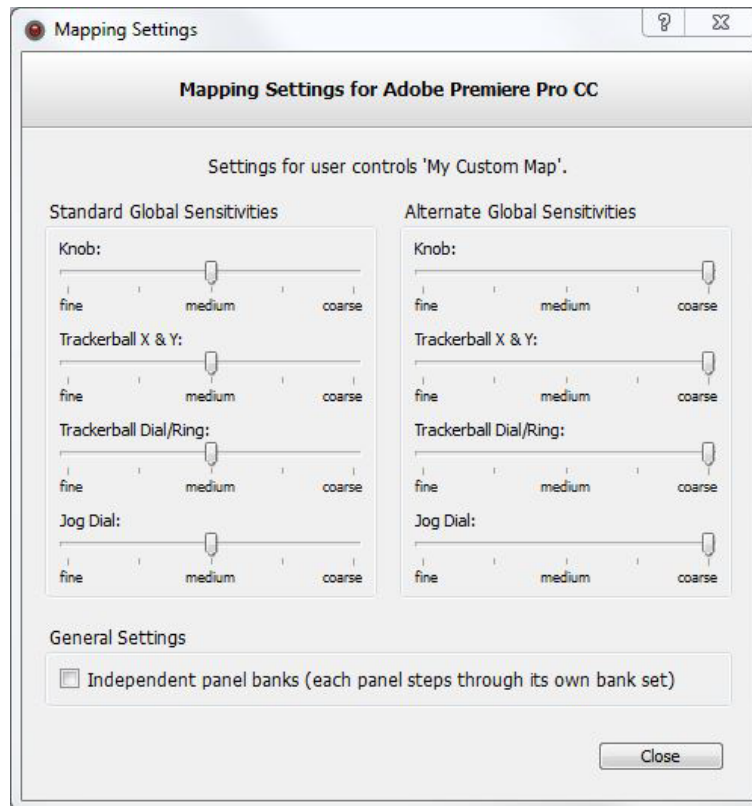


The **Target Mode** is where you set which mode will be selected when you press the button.

Again, make sure you have the appropriate “**Mappings Apply To**” selected.

13. Control Sensitivity

If you want the trackerballs or the knobs to be more or less sensitive (move their control more or less for a given movement) then go to the Mapper and open the **File > Control Map Settings...** menu. You should now get a pop-up window like this:



Set the sensitivity to suit how you want the control to respond:

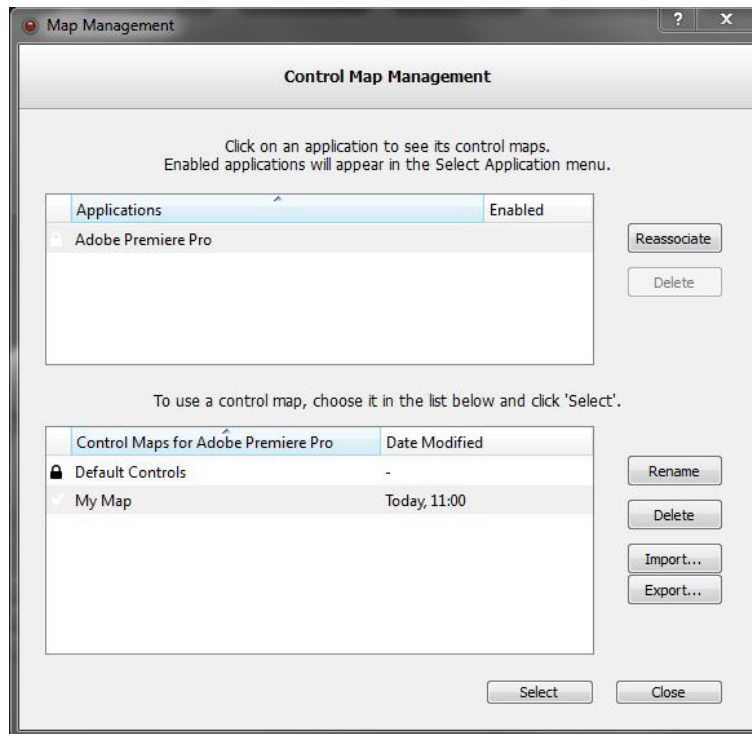
- **fine** means you have to move the control further to get a change.
- **coarse** means you will need to move the control less to get a change.

These settings apply globally to all controls of that type on the panel – every knob or trackerball control will have the same sensitivities. If you wish to change the sensitivity for just a certain control within your application then you can do this by unticking Global setting for that control - see the **Knob mapping options** and **Trackerball mapping options** sections of this guide.

As you can see, there are global sensitivities for both standard and alternate mappings.

14. Switching between maps

Having made your own maps for an application you're going to want to switch between them. First make sure your application is running. Then go to Mapper **File > Manage Control Maps...** menu. You should now see the Map Management window.



Make sure your application is selected in the Applications area. Then choose the map you want to use from the Control Maps area. Finally click the **Select** button.

You'll note that there is a **Default Controls** which has a padlock icon next to it. This is the default control map supplied with your application. You can edit this and save your changes out under a new name, but you cannot overwrite or delete it.

15. Make a new control map



This assumes you are making a map for an application that supports the Mapper. If you are making a map for an application that is not supported see the **My application doesn't support the Tangent Mapper, panels, or Hub** section of this guide.

The easiest way to do this is to start with an existing map. For example, use the default map supplied by your application. Make the changes to this and save this out under a new map name.

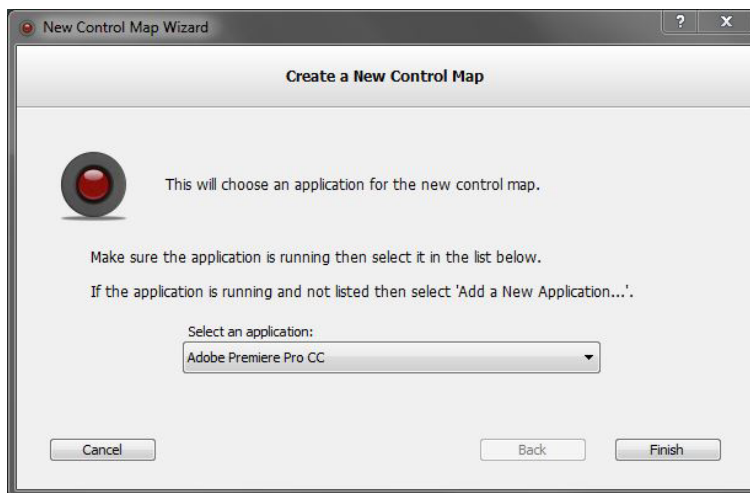
However, if you insist on starting from scratch and creating a whole new map, then here's how you get started.

Make sure your panel is plugged in.

Make sure your application is running and in the foreground.

Run the Mapper and go to the Mapper **File > New Control Map...** menu.

You should now see the following window.



Select an application:

Select your application from the list that pops up when you click on this menu.

If your application isn't in the list then it'll be for the following reasons:

- The application isn't running.
- You haven't configured your application to use the Tangent panels.
- The application is running but doesn't support the Tangent panels. In this case are you trying to do a keyboard shortcut only map for the application? If you are then see the **My application doesn't support the Tangent Mapper, panels, or Hub** section of this guide.



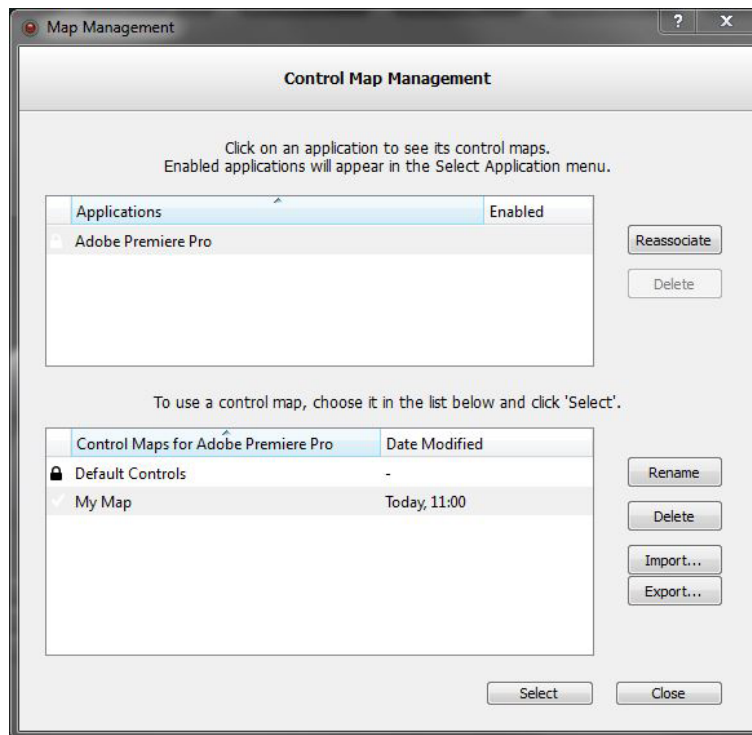
Do not select the **Add a New Application...** option! This is only really used when you're creating a keyboard shortcut map for an application that doesn't support the Tangent panels.

Finally click **Finish**.

You should now be back in the main Mapper window with an empty map. The modes the application has defined will be there in the modes tab.

16. Delete a control map

Go to Mapper **File > Manage Control Maps...** menu. You should now see the Map Management window.



Make sure your application is selected in the Applications area. Then choose the map you want to delete from the Control Maps area. Finally click the **Delete** button.

16.1 You can't delete the current map you're using.

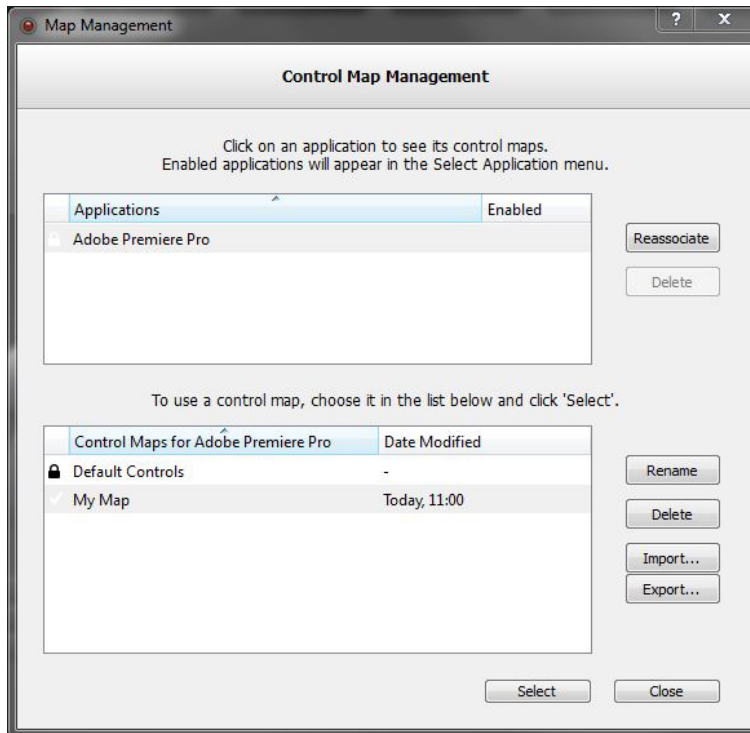
You'll need to select another map first.

16.2 You can't delete the default map.

The default map will have a padlock icon next to it. You can't delete this as it's the default map supplied by your application.

17. Backing up and restoring your maps – Export / Import

First make sure your application is running. Then go to Mapper **File > Manage Control Maps...** menu. You should now see the Map Management window.



17.1 Backup (Export)

Make sure your application is selected in the Applications area. Then choose the map you want to use from the Control Maps area. Finally click the **Export** button. You'll be prompted to choose a place where to save the file to.

17.2 Restore (Import)

Make sure your application is selected in the Applications area. Then click the **Import** button. You'll be prompted to navigate to where the file is you want to import.

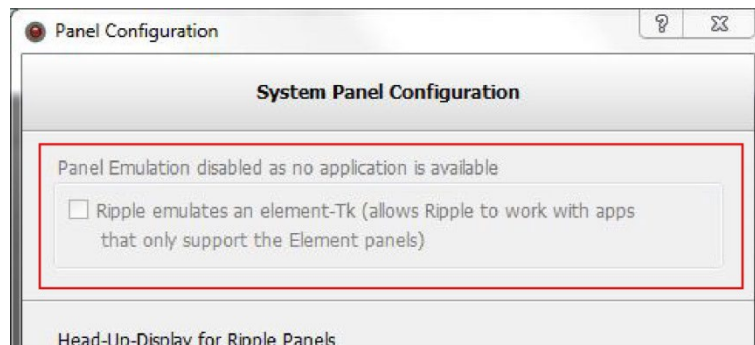
You can also use the import / export function to take your maps with you if you need to go to another facility to work.

18. Ripple specific things

18.1 Element-Tk Emulation

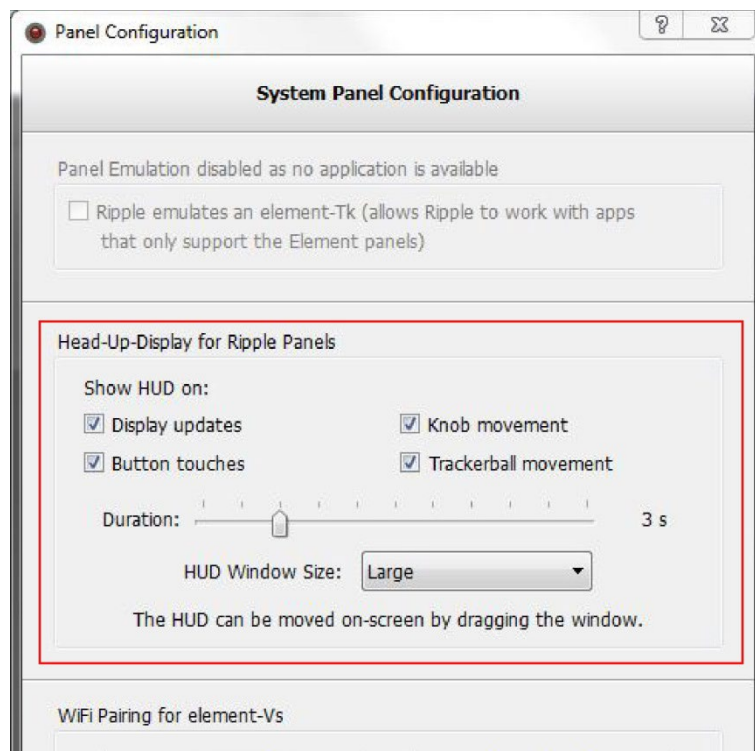
The Ripple has the same number of controls as the Tk panel, this means you can use it with any application that supports or has a map for the Tk. To put the Ripple into Tk emulation mode, go to the Mapper **File > Panel Configuration...** menu.

Tick the box **Ripple emulates an Element-Tk** option.



18.2 Virtual Head-Up-Display (HUD) for Ripple

The Tangent Hub has a virtual Head-Up-Display (HUD) for the Ripple. As the Ripple has no display, the HUD pops up on your computer monitor as a reminder of what the controls on Ripple are mapped to, and it's triggered by a mode change or a control move. You can configure the HUD by going to the Mapper **File > Panel Configuration...** menu.

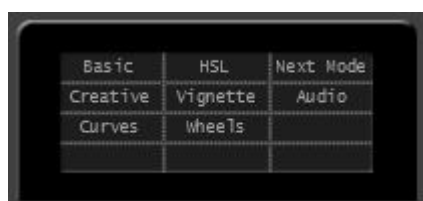


19. Element specific things

Each panel has a display. The display is used to label what the controls do.

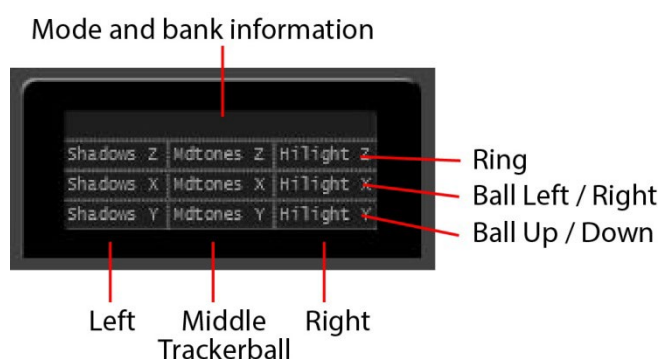
19.1 Bt, Kb, and Mf left display

In the case of the buttons and knobs on the Kb and Bt panel, the display is split into a grid of 12 cells, with each cell representing a control. The cell position of the display matches the control position on the panel. The same applies to the group of 12 buttons on the Mf panel.



19.2 Tk display

The top line of the display will tell you what mode and bank you're in. The rest of the display is split into a grid of 9 cells that label what each axis of the trackerball is assigned to.



19.3 Mf right display

The top area of the display is given over to the application for it to use for whatever it wants. What appears here isn't controlled by Tangent. The rest of the display is split into a grid of 3 cells that label what each axis of the trackerball is assigned to.



20. Arc specific things

20.1 Every control has its own display

Every control on Arc has its own display which is used to label what the control has assigned to it.



20.2 Main display at rear of each panel

The display at the back of the panel is split into three lines. The top two lines of the display is given over to the application for it to use for whatever it wants. What appears here isn't controlled by Tangent. The bottom line with a grey background displays band and mode information.

Area for application to display
information



Mode and bank information

20.3 Trackerball reset buttons and displays

The two buttons above each trackerball are reserved as resets. Their displays label what the ring and ball are assigned to.

Ball reset Ring reset



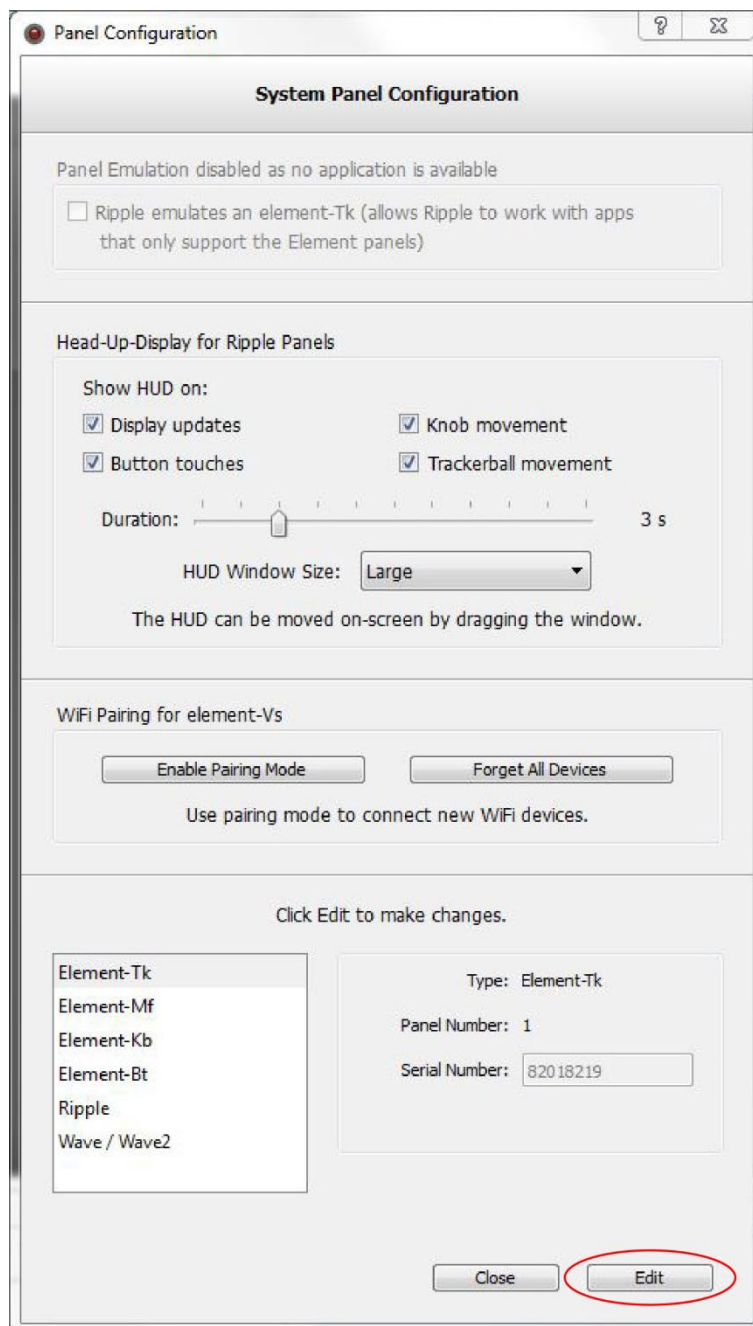
21. Element-Vs app specific things

The Element-Vs app emulates the Element panels. You can use the Mapper with the app just as if you had real Element panels. In the Mapper just map the Element panels and these will appear in the Vs app. This also includes adding multiples of each Element panel.

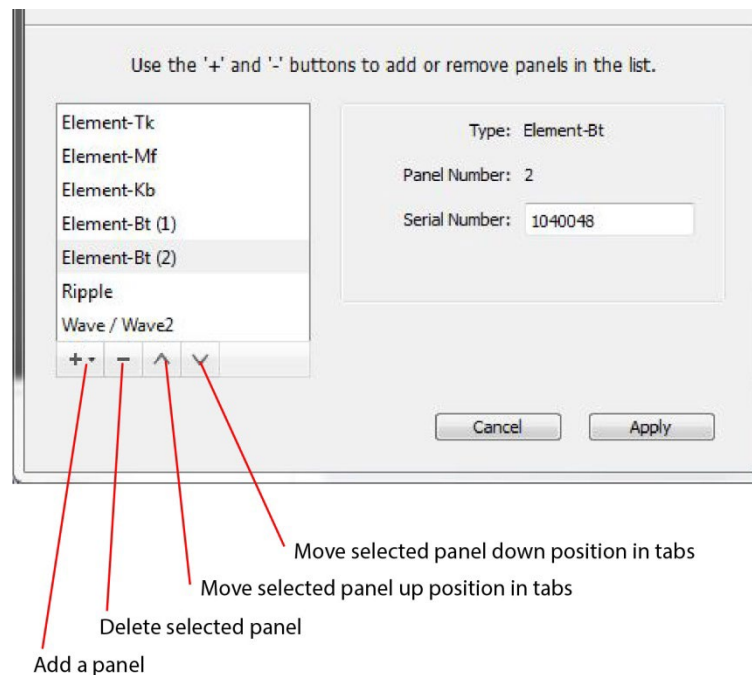
22. Adding and deleting panels

The Mapper needs to know what panels you have physically connected so it knows it has to look for them. By default, the Mapper settings already have one of each panel type added which suits most people's needs, so it's unlikely you'll ever need to change this. It's ok to have panels added that you don't actually have connected as the Mapper only ever shows panels that are really there and available.

The Mapper allows you to add more panels if you physically have more of them. For example, some applications may come with a default mapping that needs two Element-Bt panels. So, if you buy a second Bt panel then you need to tell the Mapper you've got an extra one plugged in. To do this you need to go to the Mapper **File > Panel Configuration...** menu. You should see the window below.



Click on the Edit button to make changes to the panels you have connected. This will enable the functions as shown below.



22.1 You can't add or delete panels whilst an application is running

You need to quit any applications that are using the panels before you make any changes.

22.2 Add a panel

Clicking on the '+' button will pop up a menu from which you can select the panel type you want to add. Note you can have multiple of each panel type. Click **Apply** when you're done.

22.3 Delete selected panel

First highlight the panel you want to delete. Then click the '-' button. Click **Apply** when you're done.

22.4 Change the position of a panel in the panel tabs in the Mapper

If you add a panel, it will appear in the panel tabs across the top of the Mapper window. You can change the order the panel appear in the tab by using the up and down arrow buttons. Click **Apply** when you're done.

22.5 Serial number

This is automatically filled in once a panel is plugged in. Normally you can ignore this, but you'll need to know about it, and possibly change this when you have more than one of a panel, for example two Element-Bt panels. See the **Having more than one of the same panel** section.

23. You can mix different panel types and quantities

If you physically have different Tangent panels, you can plug them all in and add them to the Mapper. This is most probably more applicable with Elements where it was always intended that users could have multiples of each panel type. But it's also useful if you want to use something like using a Ripple with the Elements instead of a Tk.

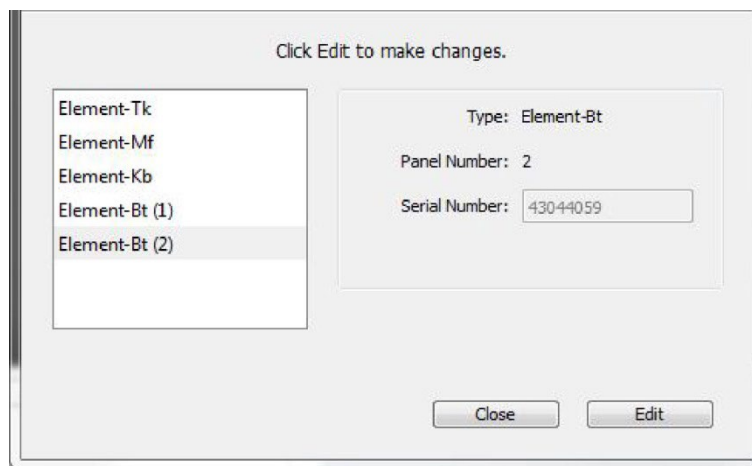
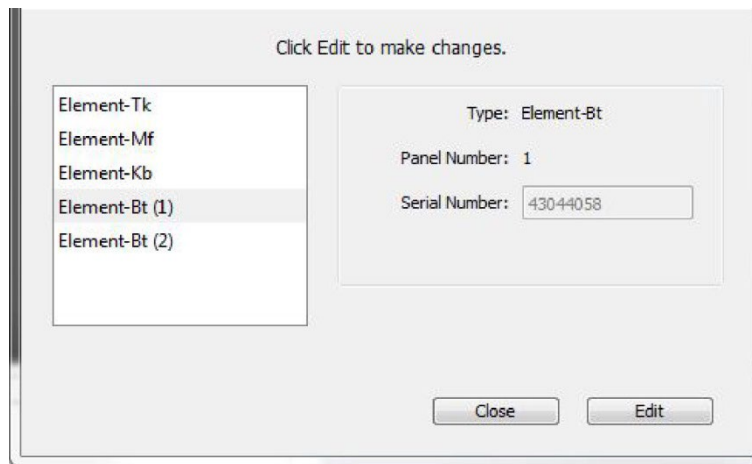
Something else to consider is that you can use the Element-Vs app to emulate Element panels. So, for example, if you have a Ripple only, you can use the Vs app to add virtual Element panels. This also includes adding multiples of each Element panel.

24. Having more than one of the same panel

If you haven't done so, read the **Adding and deleting panels** section of this guide first.

Some applications will have default maps that require more than one of a particular panel. This normally only applies to Element panels as it was always intended that users could have multiples of each panel type. So for example you may have an application that requires two Bt panels. You should check with your application what the recommend number of each panel is.

Let's stick with our example of needing two Bt panels. Our panels have already been added to the list of panels we have, and so our Panel Configuration window looks something like what's shown below. Note we've shown the window when we've selected each instance of the Bt panel.



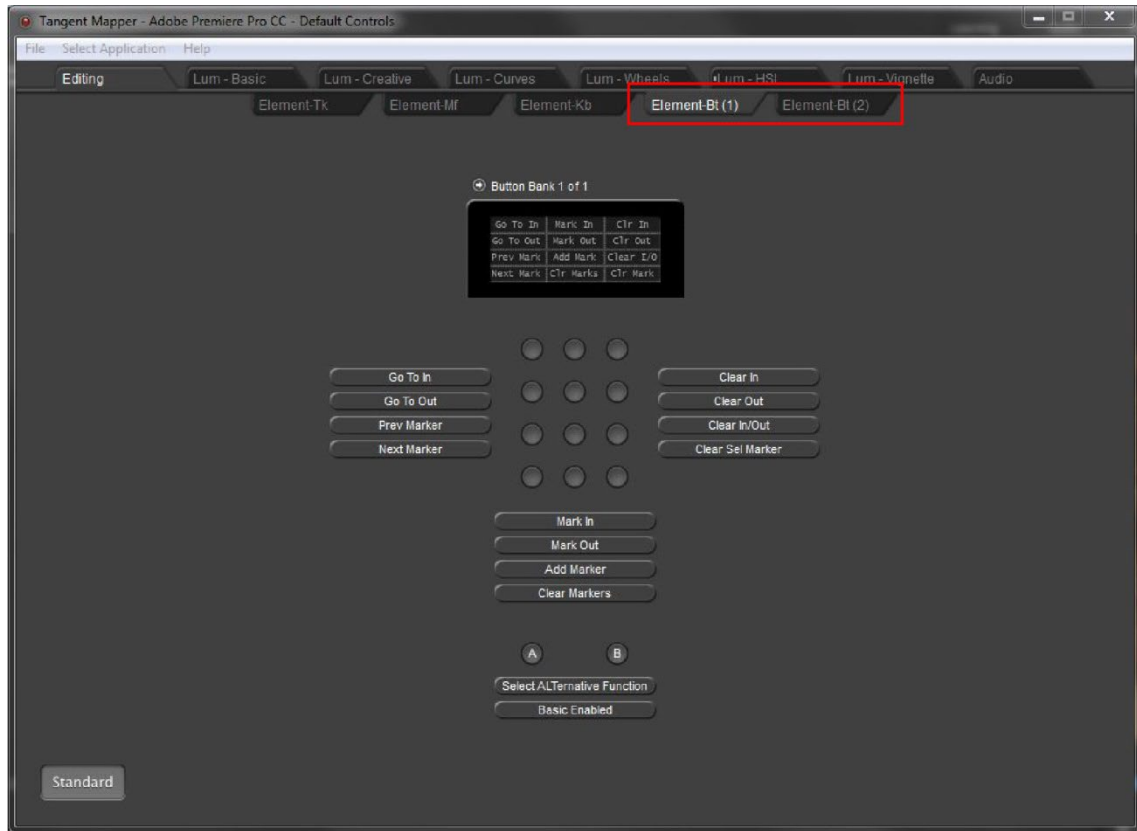
Things to note initially are:

- The bracketed number after each Bt panel. Here we have:
 - Element-Bt (1)
 - Element-Bt (2)

The bracketed number is the **panel number** and is automatically added as soon as we add more than one of a panel type.

- Each Bt panel has its own unique **serial number**. This will automatically be filled in when the panel is connected, but you can also type this in manually. Here we have:
 - Element-Bt (1) serial number 43044058
 - Element-Bt (2) serial number 43044059

In the Mapper, the panel tabs show the two Bt panels, identified by the panel number which is shown in brackets. So what we have in the Mapper panels tabs looks like this:



So, now we understand the Bt panels have been given a panel number and a serial number, we look at why this matters. You'll want to position the Bt panels on your desk in a position that suits you. And you're going to want to have the same mapping always come up on the same panel. You can do this using the combination of the serial number and panel number, here's how:

1. Map the controls to the BT panels 1 and 2 in the Mapper.
2. Decide where you want physically want the Bt panels on your desk.
3. Look at the serial number on the back of the panel.
4. Decide if this is going to be panel 1 or panel 2.
5. Make sure the panel number in the **Panel Configuration** window has that serial number. If it doesn't edit the serial number.

25. Controlling via Open Sound Control (OSC)

OSC messages can be triggered from any control on any panel. You'll either need to be modifying an existing map for your application if it has one e.g. the default map that ships with the app or you'll need to create a new map for your application - see section **Creating a new map for unsupported applications**. If you haven't read the previous sections of this document then do so now before going any further.

25.1 OSC specific controls

The screenshot shows the 'Standard Mapping' dialog box with the 'OSC Command' tab selected. The fields are as follows:

- OSC Command:** (Empty text box)
- OSC Server Port:** 0
- OSC Address:** (Empty text box)
- Display Label:** OSC Cmd
- Display Type:** Number (dropdown menu)
- OSC Value Format:** Float (dropdown menu)
- Use Absolute Values:** ☐
- Min:** 0 **Max:** 1
- Step:** 0.001 (Used for display and sensitivity)
- Knob Sensitivity:** A slider from fine to coarse, currently set to fine.
- Global:** ☒
- Reverse Knob Direction:** ☐

When adding an OSC mapping you need to:

- Set **OSC Command** as the control type.
- Set an **OSC Server Port** number to send to. Messages are always sent to LocalHost. The same port number will be used for all OSC Messages in the same map.
- Set the **OSC String Identifier** which will be used as the OSC message Address.
- Set the **Display Label** to be shown on the panel displays.
- Set the **OSC Value Format** to be **Integer / Float** for Parameters or **Integer/ Float / String** for Actions

For parameters only:

- Set the **Display Type** to be shown on the panel displays.
- Optionally, choose to send **Absolute Values** rather than Changes.
- Set the **Min, Max** and **Step** values.

NOTE: As with all mappings, it is recommended that the Standard and Alternate mappings for encoder controls are set to be the same unless there is good reason not to. The parameter sensitivities for Std and Alt will then follow the Global settings chosen in the Mapping Settings (**File > Control Map Settings...**) by default. To do this, click the **Link** icon in the Control Mapping Window:



25.2 OSC messages sent from the panel to the application

Parameter Change & Reset messages

- By default, increment values are sent when an encoder is moved. This means that a stream of small positive and negative changes will be sent. If your application expects absolute values instead then just tick the **Use Absolute Values** box.
- Parameter OSC messages are sent approx. every 30mS when an encoder is being turned quickly enough. Less often when turning slowly. The **Knob Sensitivity** slider determines how many revolutions of the encoder will reach full range.
- When an encoder changes, positive changes will be sent for a clockwise rotation and negative for anticlockwise. This behaviour can be reversed by checking the **Reverse Knob Direction** box.
- When the reset button associated with any encoder is pressed a value of Zero will be sent to indicate this when using Increments or the Minimum value will be sent when using Absolute values.

Action messages

- Action OSC messages are sent when a button is pressed or released.
- On press, a value of **1** is sent for Integer or Float Value Formats and the text **On** for String Format.
- On release, a value of **0** is sent for Integer or Float Value Formats and the text **Off** for String Format.

25.3 OSC messages sent from the application to the panel

An application can send control messages to the panels which can cause display values or status text to be shown or to control other functions of the panel. The OSC address of the incoming message will determine whether the message is destined for a particular control or is a command. This should be useful to display the value of Parameters or the Menu state for both Actions and Parameters which have multiple discreet states.

NOTE: OSC messages sent by the application to the panels should be sent to the port number which is one more than the **OSC Server Port** typed into the Mapper.
e.g. If the **OSC Server Port** set to 800 then the Hub will be listening on port 801.

If the **OSC Address** in the message matches with the **OSC Address** defined for any of the controls then the command in the message is directed to that control:

If the **OSC Value Format** is **Integer** or **Float**:

If the control is a Parameter and the **Display Type** is set to:

- **Number** then the value will be displayed as received.
- **Percentage** then the Min and Max values will be used to calculate the value to display.
- **Bar** then the Min and Max values will be used to calculate the value to display in Bar Graph format.

If the control is an Action:

- The string **“Off”** will be shown for a value of zero
- The string **“On”** for any non-zero value.

If the **OSC Value Format** is **String** and the string value is:

- **RenameControl["newName"]** - The *newname* string within the brackets will become the new control name. Sending an empty string will reset the control to its default name.
- **HighlightControl[On]** - Highlight this control.
- **HighlightControl[Off]** - Do not highlight this control.
- **IndicateControl[On]** - Indicate this control.
- **IndicateControl[Off]** - Do not indicate this control.
- If the string is none of the above then the string sent will be used as the value. This is useful for menu style controls.

If the **OSC Address** in the message is **/HubCommand**:

If the **OSC Value Format** is **Integer** or **Float** then the message will be ignored

If the **OSC Value Format** is **String** and the string value is:

- **ModeValue[integer]** - The *integer* value within the brackets is the number of the mode to select. Numbering starts at 1 for the first defined mode and so on.
- **GotoMode["modeName"]** - The string within the brackets is the name of the mode to select.
- **DisplayText["text1", "text2", "text3"]** - The *text strings* sent are used to write to the 3 user defined display lines e.g. on the element-Mf panel.

This command can take up to three quoted strings separated by commas. To leave a line unchanged, use an empty string or no quoted value at all (i.e. just a comma). If a quoted value is immediately prefixed by an asterisk then that means double height.

As an example, to set the second line of the display to double height, leaving the first line as it was send this:

DisplayText[, "*"Big Text"]

An empty first field, an asterisk prefixed second line and the third is irrelevant so would be ignored anyway due to the double height instruction.

To blank the display you would send a single space for each line e.g.:

DisplayText[" ", " ", " "]

An empty string never has any effect, a blank must have some whitespace characters.

26. My application doesn't support the Tangent Mapper, panels, or Hub

If your application doesn't support the Tangent Mapper or the Tangent panels, you can still use them with your application by mapping keyboard shortcuts, generating Warp Engine scripts, or sending Open Sound Control (OSC) messages.

Let's just confirm you're in the right place. So do the following couple of steps:

- Go to our website and see if your application is listed in the **Applications** page. If it's not then go straight to the **Creating a new map for unsupported applications** section below.
- If your application is listed then go to the **Products** page of our website. Select your panel type, then click on the **Application Support** tab. Finally choose your application from the menu. Read the information that is now listed on the web page. It'll likely lead you to one of the following conclusions:
 - **My application doesn't need the Tangent Hub, but still supports the panels.**
Your application will be talking directly to the panels. You must disable the Tangent panel support within the application. You cannot create a keyboard shortcut map, use the Warp Engine, or create an OSC map and still have panel support enabled in your application.
 - **My application needs the Tangent Hub, but mapping is not possible.**
Your application is talking to the panels through the Tangent Hub, but it is not making use of the Mapper. You must disable the Tangent panel support within the application. You cannot create a keyboard shortcut map, use the Warp Engine, or create an OSC map and still have panel support enabled in your application.
 - **My application needs the Tangent Hub and mapping is possible, but there's no map for my panel.**
This situation normally arises if your application doesn't come with a default map for your panel. You just need to create a new map and use the Mapper to map controls as normal. The rest of this guide tells you how to do this. This section of the guide doesn't apply to you.
 - **My application needs the Tangent Hub and mapping is possible.**
You just need to create a new map and use the Mapper to map controls as normal. The rest of this guide tells you how to do this. This section of the guide doesn't apply to you.

26.1 Creating a new map for unsupported applications

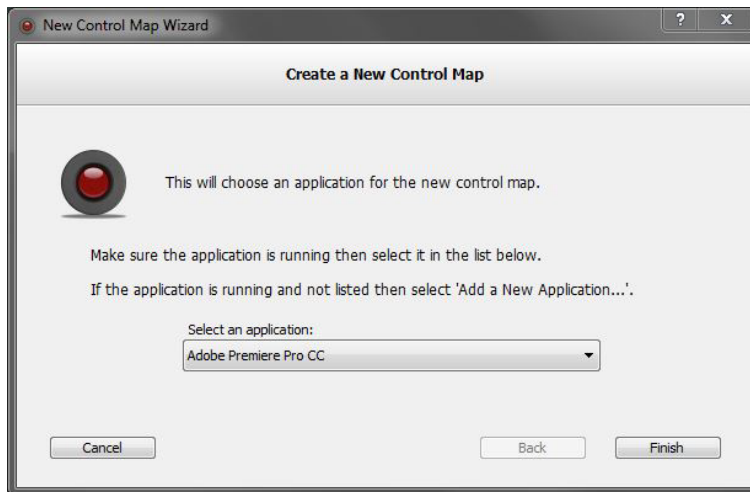
Hopefully you're here because you read the start of this section of the guide and know for sure you want to create an empty map for keyboard shortcuts and OSC controls. If you haven't read the start of this section do so now – it might save you a lot of time and effort!

Make sure your panel is plugged in.

Make sure your application is running and in the foreground.

Run the Mapper and go to the Mapper **File > New Control Map...** menu.

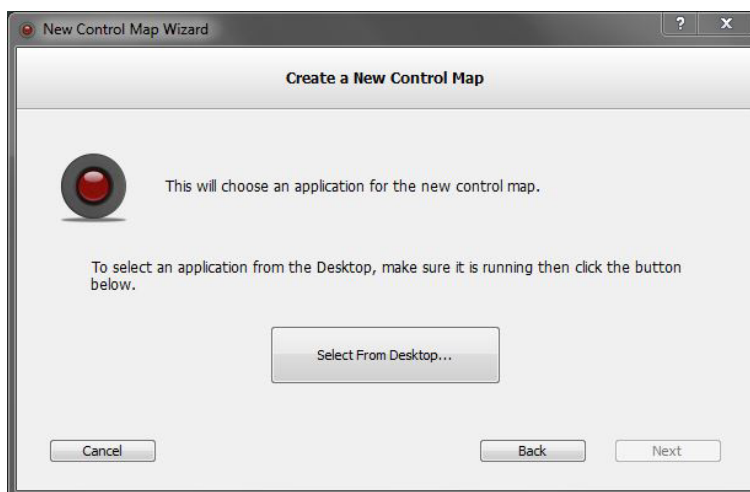
You should now see the following window.



Select an application:

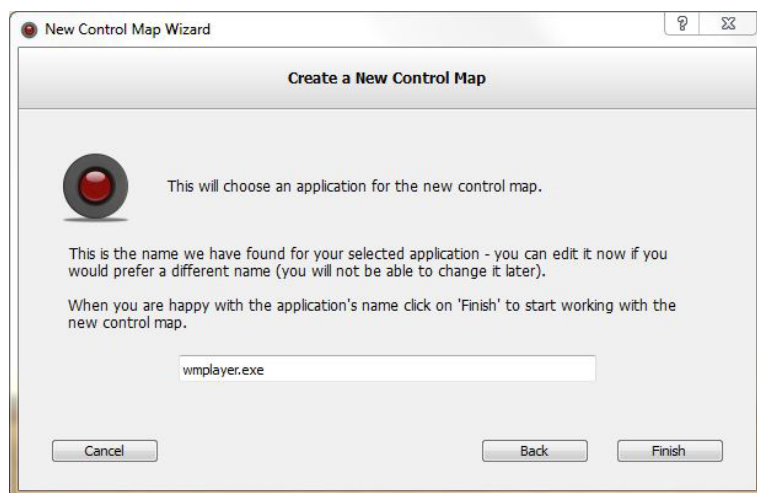
From the list that pops up when you click on this menu select the **Add a New Application...** option.

You should now see the following window.



Click **Select From Desktop**.

A 10 second count down is started and you're prompted to click on the application you want to create a keyboard shortcut map for. Providing you've clicked on an application, when the count has expired you should see the following window.



You'll see the name of the application you have selected. If it's correct click **Finish**. Otherwise click **Back** to return to application selection window.

You should now be back in the Mapper main window with an empty map.

There will be one mode called Default. You can add more modes if you wish. You can now assign keyboard shortcuts and OSC commands to the controls on your panel. You can also arrange these by defining user Modes and by creating Banks. You'll find the details on how to do all of this in the rest of this guide.

27. Select Application menu and Auto-select Application

The tangent Hub detects which application is in the foreground and automatically applies the map for that application to the panels. You can disable this function, but then you'll have to manually switch between applications yourself using the Mapper.

The **Select Application** menu is where you can manually select which application the panels are mapped to. Generally there is no need to do anything in this menu unless you disable the **Auto-select Application** option.

27.1 Disable Auto-select Application

In the Mapper go to the **Select Application** menu. Untick the **Auto-select Application** option.

27.2 Manually select an application

In the Mapper go to the **Select Application** menu. The current application that is selected has an arrow next to it. Select the application you want the panels to be mapped to from the list of applications. Only applications that support the Mapper or that you have created a keyboard shortcut map for are shown.

28. User Preferences menu

In the **File** menu, there is a **User Preferences** option. There are only two options in this:

- **Enable ALternate Function Lock** (not enabled by default)
- **Follow Application's Active Mode** (enabled by default)

28.1 Enable ALternate Function Lock

If you enable this, double pressing a button which is mapped to be **Select ALternative Function** will lock the **alternative** mapping on. To exit the lock, single press the button again, and you will go back to **standard** mapping.

28.2 Follow Application's Active Mode

If this is enabled, the Mapper **mode** tabs will follow the current active mode in the application you are mapping.

29. Resetting everything, or Help – I’ve screwed my mapping up!

If you get stuck and want to go back to the default map you can do either of the following:

29.1 Reload the default map.

In the Mapper go to the **File > Manage Control Maps...** menu.
Select the default map from the list of maps.

Or...

29.2 Reset everything to factory defaults.

Unplug all the panels.
Quit all applications.
Run the Tangent Mapper.
In the Mapper go the **Help > Reset System** menu.



Note that choosing the Reset System option will delete all Mapper user data (maps and preferences that you have created) for all applications supported by the Mapper. The data supplied by an application (default map and controls file) will not be affected.