



# vMix Panel Builder

## User Guide (4.0.29)

-updated 20 Jan 2021-

### Introduction:

This application is made for users who wish to design their own controller layout. It sends HTTP commands to vMix as per the shortcuts listed in the “vMix User Guide”. The shortcuts are pre-programmed into the app so you don’t need to add any shortcuts in vMix. Please refer to the vMix guide to better understand how to use the shortcut commands.

### Installation for Mac Users:

**\*\* New install procedure especially on Catalina OS \*\***

1. Copy **only** the "vMix Panel Builder.app" file into the Applications folder (This has changed from previous methods where the whole folder needed to be copied). The app is now notarized and code signed with Apple and should load properly on newer Mac OS.
2. If you want to create a shortcut, you can drag the vMix Panel Builder icon from the Applications folder to the Desktop or Dock
4. Check the default folders in the Preferences and change them to suit your needs. The defaults are usually good for most users.
4. Copy your previous UserIcons files by selecting Tools> Import UserIcons (this will copy the files to the default folders you have selected in the Preferences)
5. Copy your previous Template files by selecting Tools> Import Templates (this will copy the files to the default folders you have selected in the Preferences)

### Installation for Windows users:

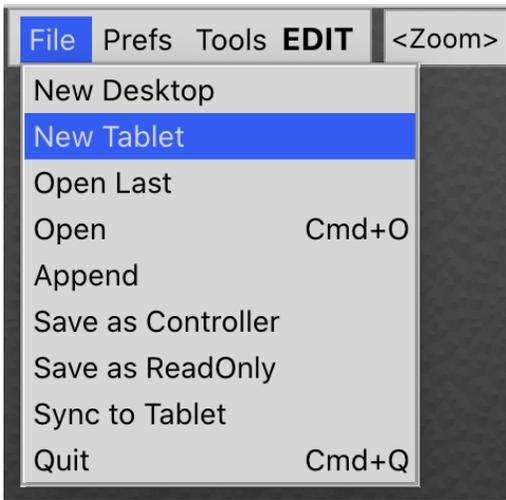
1. Copy the **complete VMPB 4.0.29 Winxx folder** to the location of your choice (usually the C:/Program Files (x86) directory)
2. Create a shortcut from the vMix Panel Builder.exe file and drag it to the desktop
4. Check the default folders in the Preferences and change them to suit your needs. The defaults are usually good for most users. They may need to be changed for networked users. Check with your network admins.
4. Copy your previous UserIcons files by selecting Tools> Import UserIcons (this will copy the files to the default folders you have selected in the Preferences)
5. Copy your previous Template files by selecting Tools> Import Templates (this will copy the files to the default folders you have selected in the Preferences)

Note: If it doesn’t open because of some windows settings, Right-Click and select ‘Properties’ then ‘Compatibility’ tab. Check “Run this program as an administrator” and “Change default settings for all users”. Click “Apply” and OK. This only needs to be done the first time you run it.

## Using the app:

The App is designed to operate in two modes “Run” and “Edit”. The mode is selected by clicking on ‘Edit’ in the menu bar. When in “Edit” mode, the InfoBox will appear. The “InfoBox” can be moved around the screen by click-dragging it. ‘Edit’ mode is used for designing your layout. Commands will not be sent to vMix in “Edit” mode. Commands will only be sent to vMix in ‘Run’ mode.

## FILE MENU



New Desktop: This will erase the canvas and start a new resizable Desktop template.

New Tablet: This will erase the canvas and start a new Tablet design. This is pre-sized for Tablets templates and cannot be resized. Although you can temporarily zoom in using the zoom icon in order to make it easier to see when designing your panel.

Open Last: This will load the last used template.

Open: This will erase the current canvas and open a previously saved template.

Append: You can append Panel Builder files to existing layout. For example, this is useful when adding pre-made template files like audio channel groups.

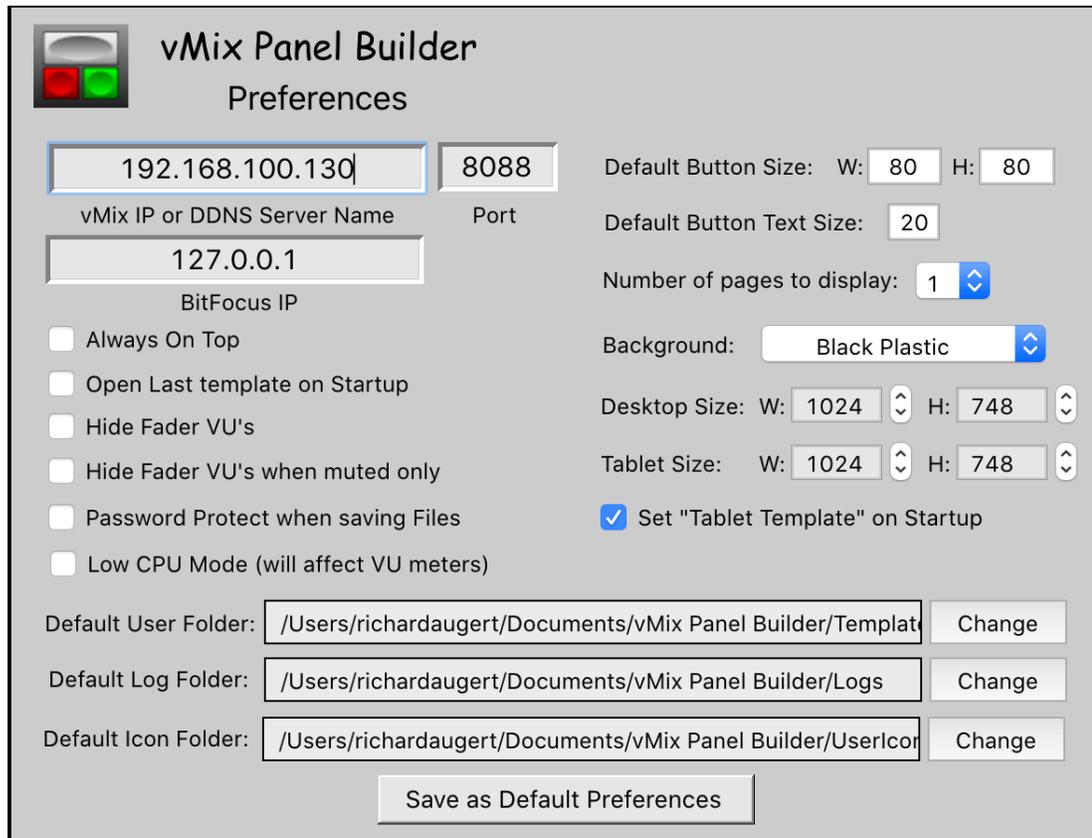
Save as controller: This will save the file as a control panel with a .vmpb extension for Desktop templates and a .vmpbx extension for Tablet templates

Save as Read-Only: This will save the file as a Read-Only panel. It will be password protected. It can control vMix but the panel cannot be edited without the password.

Sync to Tablet: Select this to sync files that were saved in a Tablet format (.vmpbx) from your computer to iPad/Android tablets.

Quit: This will exit and quit Panel Builder. A confirmation popup will appear.

## PREFERENCES MENU



The screenshot shows the 'vMix Panel Builder Preferences' dialog box. It features a title bar with a logo and the text 'vMix Panel Builder Preferences'. The dialog is organized into several sections:

- Network Settings:** Includes text boxes for 'vMix IP or DDNS Server Name' (containing '192.168.100.130'), 'Port' (containing '8088'), and 'BitFocus IP' (containing '127.0.0.1').
- Display and UI Settings:** Includes 'Default Button Size' (W: 80, H: 80), 'Default Button Text Size' (20), and 'Number of pages to display' (1).
- Background and Desktop Settings:** Includes a 'Background' dropdown menu (set to 'Black Plastic'), 'Desktop Size' (W: 1024, H: 748), and 'Tablet Size' (W: 1024, H: 748).
- Startup and Performance Settings:** Includes a checked checkbox for 'Set "Tablet Template" on Startup' and several unchecked checkboxes: 'Always On Top', 'Open Last template on Startup', 'Hide Fader VU's', 'Hide Fader VU's when muted only', 'Password Protect when saving Files', and 'Low CPU Mode (will affect VU meters)'.
- Folder Settings:** Includes three 'Default' fields with 'Change' buttons: 'Default User Folder' (pointing to a template directory), 'Default Log Folder' (pointing to a logs directory), and 'Default Icon Folder' (pointing to a user icons directory).
- Buttons:** A 'Save as Default Preferences' button is located at the bottom center.

vMix IP or DDNS Server Name: Enter the vMix IP without the port number or enter the DDNS server name if applicable.

Port: Enter the port number of the vMix computer. You can find this in the Settings>Web Controller. It is set to 8088 by default but this can be changed if you are using multiple vMix systems.

BitFocus IP: Enter the IP of the computer running the BitFocus application. That computer must be on the same network. If it is the same computer that is running the Panel Builder app, you can use 127.0.0.1 as local IP.

Always on top: check this if you want the app to remain on top of other windows.

Open Last Template on Startup: Select this if you want to automatically open the last used file

Hide Fader VU's: Select this if you want to hide VU's from fader objects. It will hide both active (green) meters and muted (blue) meters.

Hide Fader VU's when muted only: This will hide only the muted (blue) VU's from fader objects

Password Protect when saving files: Select this if you want to password protect “controllable” panels from being edited. Read-Only panels will always be password protected.

Low CPU Mode: Select this to reduce CPU load if needed when using computers with less horsepower. The VU meter response will be affected.

Default Button Size: Enter the default button size to use when adding new buttons to a panel.

Default Button Text Size: Enter the default text size to use when adding new buttons to a panel.

Number of pages to display: You can have 6 pages in Panel Builder. Choose how many pages you want as a default when loading Panel Builder. This can be changed to whatever you wish when designing new panels. When loading a saved panel, it will load the appropriate number of pages as it was saved.

Background: Choose preferred background. Choosing “custom” will allow you to select a background color.

Desktop Size: Set this as your default Desktop Size by setting the appropriate Width and Height. Move the window to the desired screen position. This position will also be saved. You must be in a "Desktop Template" mode to set these parameters.

Tablet Size: This sets the default Tablet Size to correspond to your tablet (default size is 1024x748). You must be in a "Tablet Template" mode to set these parameters. You can adjust these parameters to suit Android variations. The Height and Width parameters in Panel Builder are not necessarily the same as the Tablets screen resolution as they are not directly related to the pixels on your computer. Different Android devices do some calculations of their own to fit their screens.

To adjust the Tablet size in Panel Builder to suit your device, do the following:

1. Create a new Tablet Template (Start with a Tablet size of 1024 x 748 in the preferences)
2. Create a New Colored button.
3. Move the button to the lower right corner of the canvas.
4. Save the template and Sync to your tablet.
5. Note the position of the button on your tablet.
6. Adjust the Tablet Template Height and Width in Panel Builder Preferences and return to step 3 until the button is in the lower right corner of your tablet.
7. Once you have found the optimal size for your tablet, Save the Preferences.

\* iPads all use 1024x748 as canvas size in Panel Builder. They will automatically resize to fit different iPads

Set "Tablet Template" on Startup: Select this if you want Panel Builder to startup as a Tablet using the default size that you set. These panel types have the (.vmpbx) file extension and are used to create panels for iPad or Android Tablets.

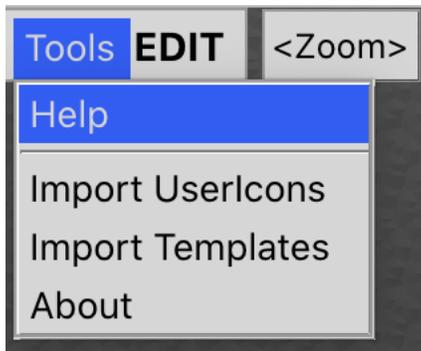
Default User Folder: This is the folder path that will be used to Open and Save files. It is also used as the path for iPad/Tablet syncing. It is set to the users' "Documents/vMix Panel Builder/Templates" folder by default.

Default Log Folder: Select the folder path to save Record and Run logs

Default UserIcons Folder: Select the path to store User icons. It is set to the users' "Documents/vMix Panel Builder/UserIcons" folder by default. You can change this to another location if desired (eg: to share Icons on a server)

\*\* This window can be grabbed and moved if necessary when creating small panels.

## TOOLS MENU



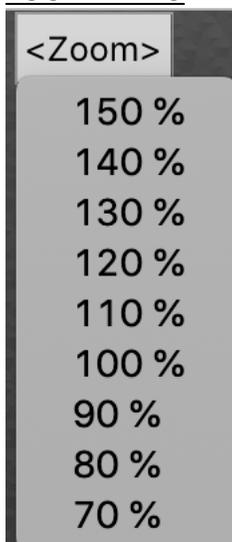
Help: This will download the recent User Guide to your browser.

Import UserIcons: You can use this to import 'UserIcons' as an option to using the +/- buttons in the Icon Box. This will open a dialog window for you to choose Icon files (.jpg .jpeg .png) and copy them to the Default UserIcons folder that is selected in Preferences

Import Templates: This will open a dialog window for you to choose Templates files and copy them to the Default User folder that is selected in Preferences

About: Indicates Panel Builder version and support email

## ZOOM MENU



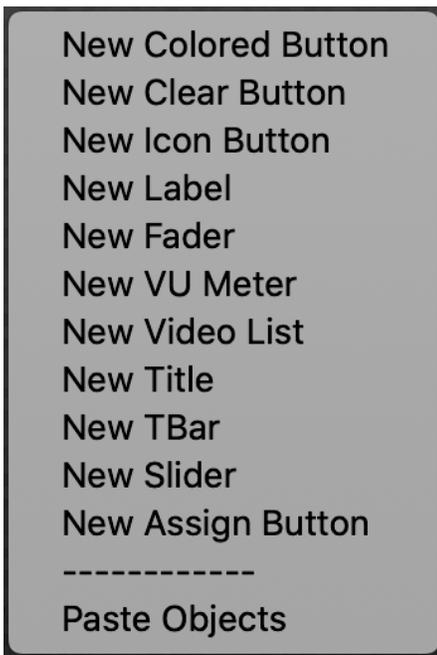
You can select a Zoom value to change the "displayed size" of the canvas when designing your template. This is only an aid for designing smaller panels for example. **Note:** The Zoom size will not be saved when saving a panel. The 100% size is used when saving the templates not the current selected size.

## PAGES



The number of pages (up to 6) can be selected in the Preferences menu. You can edit the page name by right-clicking on the page only while in the "EDIT" mode. These parameters will be saved in your template.

## ADDING OBJECTS (WHEN RIGHT-CLICKING ON CANVAS):



There are several types of objects (Button, Label, Fader, Vu, VideoList, Title, T-Bar, Slider). To add an object, select 'Edit' from the menu bar then right-click on the canvas and select the type of object you want to add. Each object can be sized and positioned to wherever you like. When the object is selected, the available parameters will appear in the InfoBox. You can then adjust the color, text size, text color, border etc., of the buttons and labels. Buttons and labels can contain multiple lines of text.

## Buttons:

There are three types of buttons (Colored, Clear and Icon). The Colored Button type will brighten up when tallied, whereas the Clear button will change to the selected color when tallied (assuming the command is "tally able". The Icon Button can contain a "Transition, Input, Media or a User icon". You can add your own User icons using the + - buttons in the InfoBox. They must be .png or .jpg format. They will be loaded into

memory, so be careful of the file size (a 500 x 500 px (40k) image is sufficient). If an icon is in a .png format, the transparent background will change to the chosen color when Talled if the command is "tally-able". If the icon is a .jpg, it will not tally unless a separate "Tally Icon" is assigned to the button. The Buttons contain commands that will be sent to vMix when you are not in 'Edit' mode.

### **Labels:**

Labels do not execute vMix commands. They are simply labels that are used for identification or background boxes. The labels can be sized, positioned and colored as desired. They can also be set to opaque or transparent by clicking the 'opaque' button in the 'InfoBox'. They can be 'send to back' or 'bring to front' to allow you to overlap labels (as you might do when using a label as a background for other objects). The text and border parameters can be set in the Button Info Box.

### **Faders:**

Faders can be used for commands such as (Input/Bus/Master Volume). To add a command, click on the (?) icon in the Info Box. This will open a menu with all the available vMix shortcuts. Select the command that you wish to execute when the fader is moved. Enter the 'Input' in the appropriate field in the 'InfoBox'. Faders can be sized and positioned as you like. Faders include VU meters. There is an option in the Preferences where you can choose to hide only muted VU's or turn them off altogether.

### **VU Meter:**

VU meters do not contain a fader. They can be used to monitor audio levels only. To monitor Inputs choose 'SetVolume' as the command and select the Input you wish to monitor. To monitor the Master volume choose 'SetMasterVolume' as the command. To monitor a Bus choose the appropriate command 'SetBusXVolume'

### **Video List:**

The VideoList will display the available items within the selected vMix List Input. It will also display the duration and remaining time of the currently playing item. You can click on an item to select it, as you would in the List window in vMix. If you select an item from the List in vMix or another controller, it will be reflected in the Panel Builder Videolist.

### **Title:**

The Title will display the current data of the selected vMix Title. Simply select the Title Input you wish to monitor.

### **T-Bar:**

T-Bars can be used for commands such as (SetFader, ReplaySetSpeed). You can choose the T-Bar style to either 'Traditional' A/B type fader or 'Snap Back' type as used in vMix. The default T-Bar command is set to 'SetFader' with "Traditional" style.

### **Slider:**

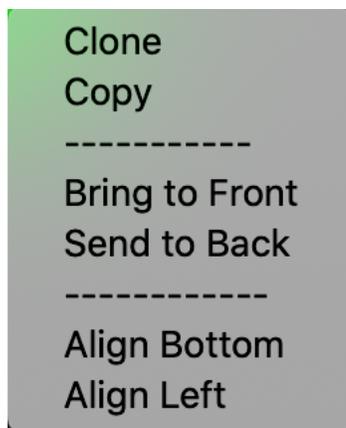
This will create a slider for commands requiring variable values such as Color Correction or SetBalance that need a (+/-) value or SetGain that requires positive values. The slider will adapt to "centering" or "linear" depending on the command that is chosen. These sliders can be sized to be vertical or horizontal as required. You can reset to center by double-clicking the slider. The sliders will also reflect the position of the SetBalance and SetPosition commands. Other commands will not be reflect, as the information is not available in the API XML.

**Assign Input:** This is a button that can dynamically change Input Values in a group when in "Run" mode. When pressed, a dropdown menu will appear to allow a choice of Input.

### **Paste Objects:**

This will paste objects that were selected. These can also be pasted on other pages other than the on one they were selected from.

### **COPY AND ALIGNING OBJECTS (WHEN RIGHT-CLICKING ON OBJECTS):**



### **Clone:**

If you have an object that you wish to clone, right-click on the object and select 'clone'. This will place an identical object to its side on the current page. Position it to wherever you like and modify its parameters as required. You can also lasso or shift-click multiple object to clone them as a group. Ctrl-C to copy and Ctrl-V to paste also works and is quicker than right-click cloning. (Cmd-C and Cmd-V on Mac).

### **Copy:**

This will copy all the selected objects to the clipboard allowing you to paste them on other pages

### **Bring to front:**

This will bring all the selected objects to the front of other objects

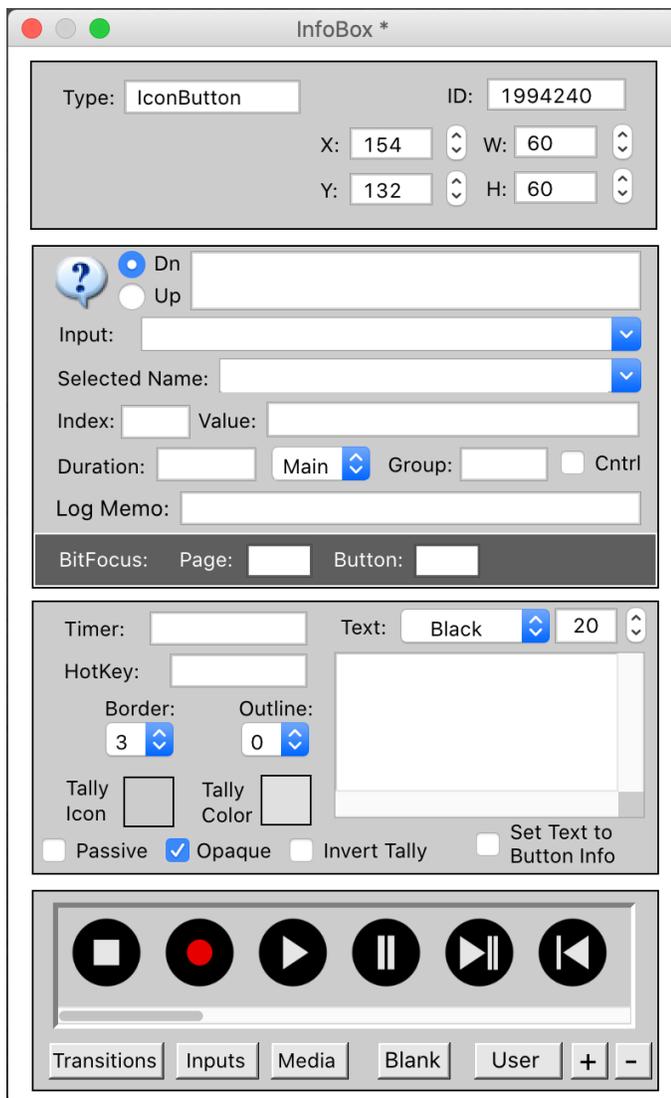
## Send to Back:

This will send all the selected objects to the back of other objects

## Aligning objects:

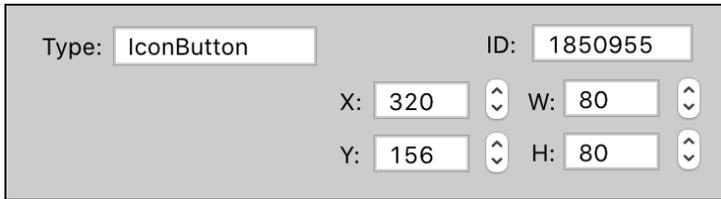
Multiple objects can be selected by click-dragging the cursor “lassoing” around a group of objects. They can also be selected by shift-clicking individual objects. They can then be aligned to top or bottom of the first selected object. They can be moved around by dragging the group or using the keyboard arrows. They can also be sized and moved by using the up/down arrows in the ‘position’ window

## INFOBOX:



When you click 'Edit' in the menu, the 'Infobox' will open. It can be moved around in order to allow you to see objects that might be behind it.

## Position Box:



The Position Box control panel is a grey rectangular window. It contains several input fields and spinners. At the top left, there is a 'Type:' label followed by a text box containing 'IconButton'. To its right is an 'ID:' label followed by a text box containing '1850955'. Below these are four rows of controls: 'X:' with a text box '320' and a spinner; 'W:' with a text box '80' and a spinner; 'Y:' with a text box '156' and a spinner; and 'H:' with a text box '80' and a spinner.

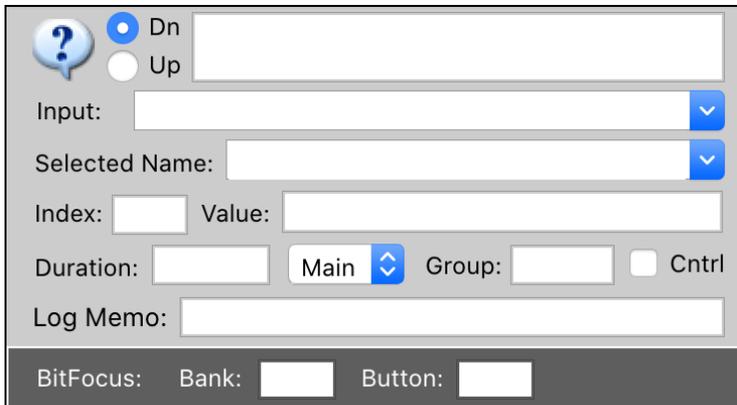
X: Can be used to move the objects horizontally on the canvas. Grouped objects will move as a group.

Y: Can be used to move the objects vertically on the canvas. Grouped objects will move as a group.

W: Adjusts the width of the objects. Grouped objects will size individually according to this setting.

H: Adjusts the height of the objects. Grouped objects will size individually according to this setting

## Command Box:



The Command Box control panel is a grey rectangular window. It features a question mark icon on the left. Below the icon are two radio buttons labeled 'Dn' (selected) and 'Up'. To the right of these is a large text input field. Below that is an 'Input:' label followed by a dropdown menu. Next is a 'Selected Name:' label followed by another dropdown menu. Below these are two text input fields labeled 'Index:' and 'Value:'. Further down is a 'Duration:' label followed by a text input field, a dropdown menu with 'Main' selected, a 'Group:' label followed by a text input field, and a checkbox labeled 'Ctrl'. At the bottom is a 'Log Memo:' label followed by a text input field. A dark grey bar at the very bottom contains 'BitFocus:' followed by a text input field, 'Bank:' followed by a text input field, and 'Button:' followed by a text input field.

? icon: Click on this icon to select a command category. A window with the available commands will pop up according to the selected category.

Dn / Up: You can send different commands to vMix on the 'Down' and/or the 'Up' click of the mouse. This allows to the user to 'toggle' commands with the same button. In most cases, you would only use the mouse Down function.

Input: Use the pulldown menu to display the available input (if connected to vMix). If not connected to vMix, you can manually add the input name or the input number to the field.

Index: Some commands have an option to use the index of a particular item such as the "SetText" command. Most of these commands also work using "Selected Name". This option was left here for those who wish to use index instead.

Selected Name: Use the pulldown menu to select the name of a specific item in the Title Input.

Value: Enter the value corresponding to the chosen command. (Refer to the 'Shortcut Function Reference' in the vMix User Guide for valid values.)

Duration: Enter the transition duration when selecting transition commands. If it is left blank, the default vMix transition durations will be used.

Main: This pulldown menu is used to select which mix to apply the command to. Select which Mix (Main, Mix1, Mix2, Mix3) to apply the command to. "Main" is the default

Group: Objects can be placed into groups and Dynamically controlled by another button. The grouping feature is designed so a Button can dynamically control the parameters (Command, Input, Value) of other Buttons within the group, thus allowing you to change the parameters of several buttons at once. To program the Buttons into a group, enter a "Group" name or number in the "Group" field for each of the Buttons that you wish to control. Check the "Group Control" box for the Button(s) that will control the parameters of that particular group. You can have several Groups by giving each one a distinctive name. The button within the group that is assigned as a "Cntrl" button can change the selected parameters of all the buttons with the group.

Cntrl: Assign this to the button that will control/change the selected parameters of all the other buttons within the group.

Log Memo: Text in this field will be added to Record and Run logs if this buttons function is "CutDirect"

BitFocus Bank: Enter the bank number of the BitFocus button you wish to trigger

BitFocus Button: Enter the number of the BitFocus button you wish to trigger

### **Button Info Box:**

The screenshot shows a 'Button Info Box' with the following controls:

- Timer: [Empty text field]
- Text: [Black] [15]
- HotKey: [Empty text field]
- Border: [3]
- Outline: [0]
- Tally Icon: [Empty square]
- Tally Color: [Empty square]
- Passive:
- Opaque:
- Invert Tally:
- Set Text to Button Info:

Timer: You can assign a one-time timer event to a button. The command will execute at that set time. Use format {9:00:00 PM}. Useful for starting recordings etc. (if you're like me and sometimes forget 😊) .

NOTE: The timer feature is disabled by default on Tablets and iPads to avoid accidental switching.

HotKey: Keyboard Hotkeys can be added to Buttons. Click the "Hotkey" field in the Button's InfoBox and enter the corresponding keyboard key. (Tab, Arrowkeys and Function) keys are accepted. Modifier Keys (Shift, Ctrl, Cmd, Opt) are not accepted.

Border: Adjusts the 3D button border width.

Outline: Adjust the black Outline width of buttons

Tally Icon: This box will highlight in red when clicked. You can then select an icon from the IconBox that will be used as the Icon for Tally-able buttons.

Tally Color: If an selected Icon is a .png, then the Tally Color will be applied to the transparencies of the icon.

Passive: This will allow a button to be used as a Tally indicator according to the selected command, but NO command will be sent to vMix.

Text Color: Select the text color from the pulldown menu.

Text Size: Select the text size from the pulldown menu.

Text box: Enter the text you wish to use in labels and buttons. Carriage returns are permitted.

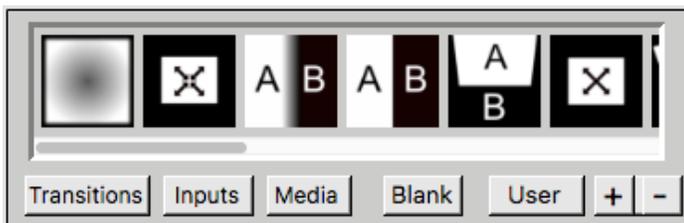
Opaque: Select whether a label or button is opaque or transparent.

Invert Tally: Select this if you want the tally to be inverted. For example, this can be used to invert tallies on commands such as such as "Audio" to behave like a 'mute' button instead of 'channel On' button.

Set Text to Button Info: When selected, the chosen "Input" field info will be displayed in the button rather than the text in the textbox. It will work with Preview, Active, Dynamic or individual inputs names or numbers.

\*\*If the Input is a "Title" Input (gtzip), you can display a specific field by selecting it in the "Value" dropdown.

### **Icon Box:**



Transitions: Select this to display and choose transition icons



Input: Select this to display "Input type" icons similar to those in vMix



Media: Select this to display Media type icons (Record, Play, Facebook, Youtube, etc)

Blank: Select this to clear an icon in a button

User: Select this to display the "User icons" that you have added

+ Select this to add our own user icons (PNG and JPG files only) They should not be too large (40k) is good enough. They will be loaded into memory when you open Panel Builder.

- Select this to delete user icons you no longer use.

### **Tallies:**

Buttons that contain "tally-abled" commands will provide a tally. Not all commands can provide a tally. It depends if they are included in the vMix API XML. Panel Builder Tallies will reflect the status of vMix even if switched from multiple controllers. (eg: x-keys or directly from vMix program)

### **Script Builder:**

When a button contains the command "StartScriptDynamic" it will open a script builder window. This is a simple list field where you enter the vMix commands in the order you wish to execute them. Choose a command from the drop-down menu and add the appropriate data in the corresponding fields next to the command. Refer to the vMix User Guide for required data for each command. All the vMix shortcuts are available. One exception is the "Sleep" command which is basically a "Wait" command in milliseconds. Use this to pause before executing the next command when necessary. Add and delete lines as required to build your script.

Note: To use Scripts, you must have vMix HD or Pro edition

### **LOCK ICON:**



Clicking the lock icon will lock the objects into place when “editing” and prevent them from being moved, sized or deleted. However the objects properties and commands can still be edited in the InfoBox.

### **FULLSCREEN ICON:**



Clicking this will make the panel Fullscreen. Note: The Fullscreen display will vary according to different size templates and monitors. It should size to the maximum available space while still displaying all the objects.

### **CONNECT ICON:**



Once connected to vMix, the button will turn green. If disconnected, it will be red. If vMix disconnects for some reason, clicking the icon will attempt to reconnect to vMix.

### **Undo:**

Use Ctrl Z to undo the last step. There is only one undo step.

\*\*\*\*\* ENJOY \*\*\*\*\*