



ADVANCED CONTROL SYSTEMS

FUNCTIONALITY DEEP-DIVE SERIES

Issue Six: Robotic Cameras

INTRODUCTION

Every customer has their own workflows and challenges to address; users should be able to leverage the full capabilities of their systems. In this series of How-To Guides, we will help engineers understand how to configure systems with added-value functionality to help solve issues in existing and future projects.

Customers will be able to use a control platform as a simple unified system to deliver professional output and make simple day-to-day modifications without the need for expensive support calls.

This How-To Guide showcases TSL's Robotic Camera capabilities.

BEFORE YOU START

This document assumes you have set up router control, as described in Step 1 of TSL Control Systems: Functionality Deep Dive: #1 Router Control.

SCENARIO

This guide provides instruction on how to add a camera to a TallyMan system and setup a control panel using TallyMan Virtual Panel for complete control over PTZ (Pan Tilt Zoom) cameras for granular control, preset set/recall and tally control.

WHY PTZ CAMERAS?

PTZ cameras can be inconspicuously placed throughout a studio or event space without obstructing audience views. Furthermore, PTZ cameras give you more flexibility in the type of angles you can capture.

Also, a number of PTZ cameras leverage Ethernet, which is appealing to broadcasters and AV professionals for simpler cabling.

Arguably the primary reason for ascendancy of demand for PTZ cameras in all production spaces is the need to do more with less. Video technology has advanced to the point where relatively affordable PTZ cameras can deliver 'close enough' and even equivalent results compared to considerably more expensive studio and ENG cameras. When you add that overall cost-effectiveness with the flexibility of installation, and the ability to automate and remotely control the PTZ cameras, the benefits multiply.

[Continue Reading on the Broadcast Bridge >](#)

1. SET UP THE CONFIGURATION

The screenshot shows the 'System Properties' dialog box in the TallyMan software. The 'Name' field is set to 'Robotic Camera', and the 'Platform' is set to 'TM-1 + Mk2'. The 'Apply' button is highlighted. The dialog also shows 'System Interfaces' and 'System Tallies' sections.

1

Create a new system...

- a) File > New
- b) Name = Robotic Camera
- c) Platform = TM-1 + Mk2
- d) Apply

The screenshot shows the 'Add New System Component' dialog box. The 'Type' list includes 'System Controller', 'Tally I/O', 'Router', 'Mixer', 'UMD Display interface', 'Control Panel', 'Event Monitor', and 'IR Control'. The 'Event Monitor' option is selected. The 'Name' field is set to 'Robotic Camera', and the 'OK' button is highlighted.

2

Add an Event Monitor...

- a) Add New Component
- b) Type = Event Monitor
- c) Name = Robotic Camera
- d) OK

2. CONFIGURE THE EVENT MONITOR

3 Configure Event Monitor...

a) Select component
b) Event Type = Visca Camera Controller
c) Apply
d) Select Event...
...Available camera actions are listed

The screenshot shows the 'Event Monitor Properties' dialog box in the TallyMan - Offline application. The 'Name' field is set to 'Robotic Camera'. The 'Event type' dropdown is set to 'Visca Camera Controller'. The 'Number of Events' is set to 44. An 'Apply' button is visible. In the background, a tree view shows the 'Robotic Camera' component selected, and a table of events is visible.

| Index | Event | Mnemonic | Specific | Channel |
|-------|-------------------|----------|----------|------------|
| 1 | Bi-Direction Pan | | | 1: Program |
| 2 | Bi-Direction Tilt | | | 1: Program |
| 3 | Pan/Tilt Stop | | | 1: Program |
| 4 | Zoom | | | 1: Program |
| 5 | Focus | | | 1: Program |
| 6 | Tally | | | 1: Program |
| 7 | Focus control | | | 1: Program |
| 8 | Exposure Mode | | | 1: Program |
| 9 | Iris | | | 1: Program |
| 10 | Shutter | | | 1: Program |
| 11 | Gain | | | 1: Program |
| 12 | White Balance | | | 1: Program |

4 Set Up Communication

a) Select Robotic Camera Event Monitor
b) Edit Comms Parameters
c) Type = Network UDP
d) Port = 52381
e) Description = PTZ CAM
f) Set IP Address of camera
g) OK

The screenshot shows the 'Robotic Camera: Setup Communication' dialog box in the TallyMan - Robotic Camera.tms application. The 'Type' dropdown is set to 'Network UDP'. The 'Port Number' is set to 52381. The 'Description' is set to 'PTZ CAM'. The 'IP Address' is set to 192.168.100.100. An 'OK' button is visible. In the background, the 'Event Monitor Properties' dialog box is still open, and the 'Robotic Camera' component is selected in the tree view.

3. ADD THE TMVP INTERFACE

Note: This procedure requires that you connect to a different IP port.

1 Add a TMVP interface

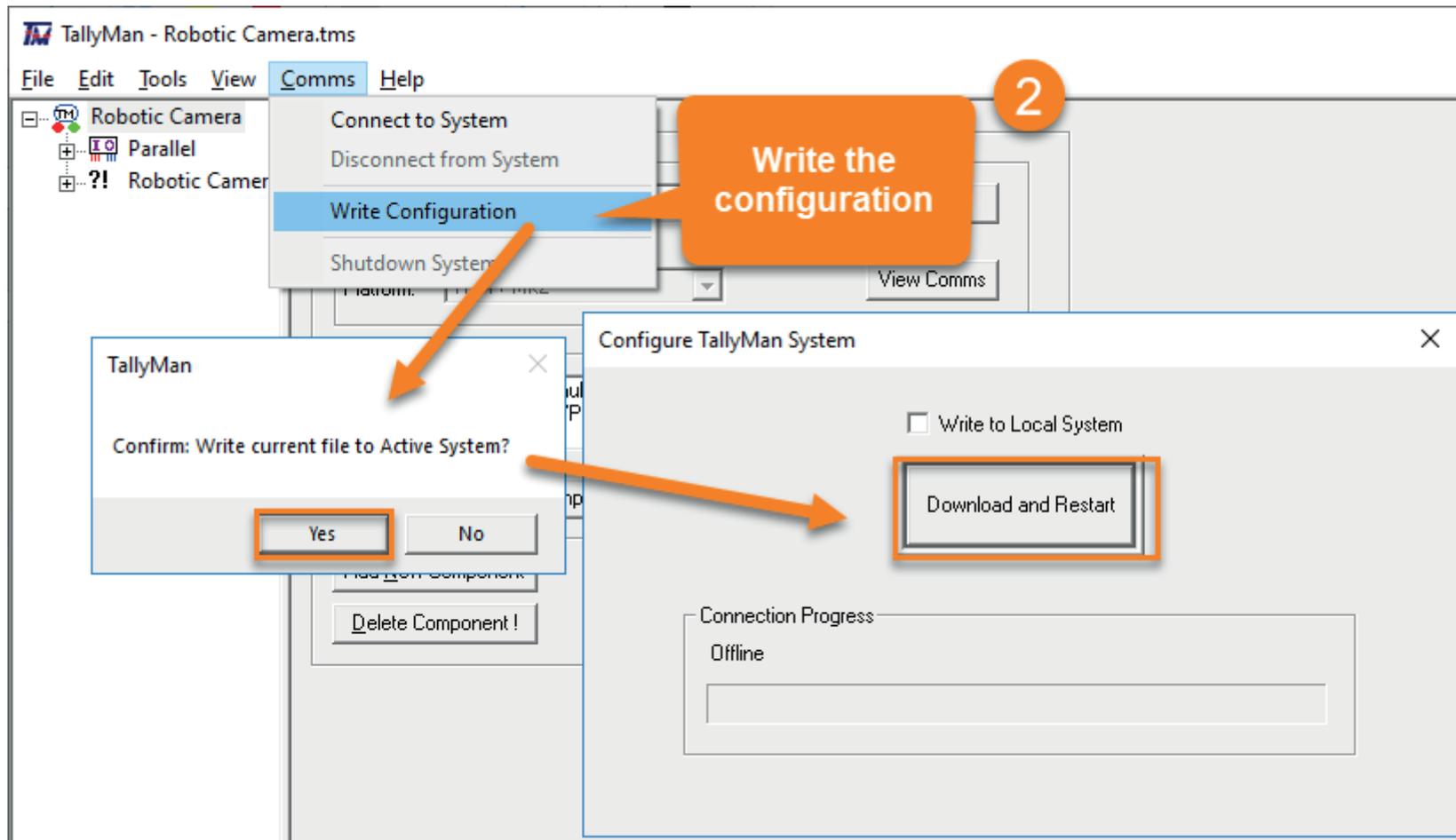
- a) If connected, disconnect from system
- b) Add a System Interface
- c) Type = Network / TCP/IP Server
- d) Port = (e.g.) 5002
- e) Description = TMVP
- f) IP Address = TM System Controller
- g) OK

Port must be different from system controller

TMVP interface listed in System Interfaces panel

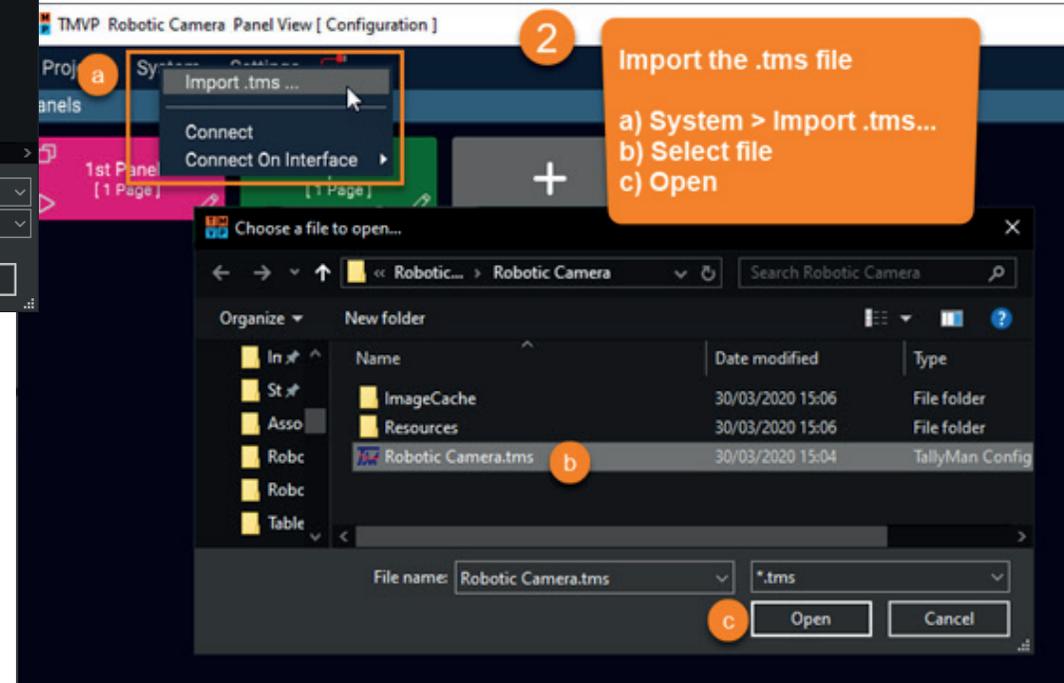
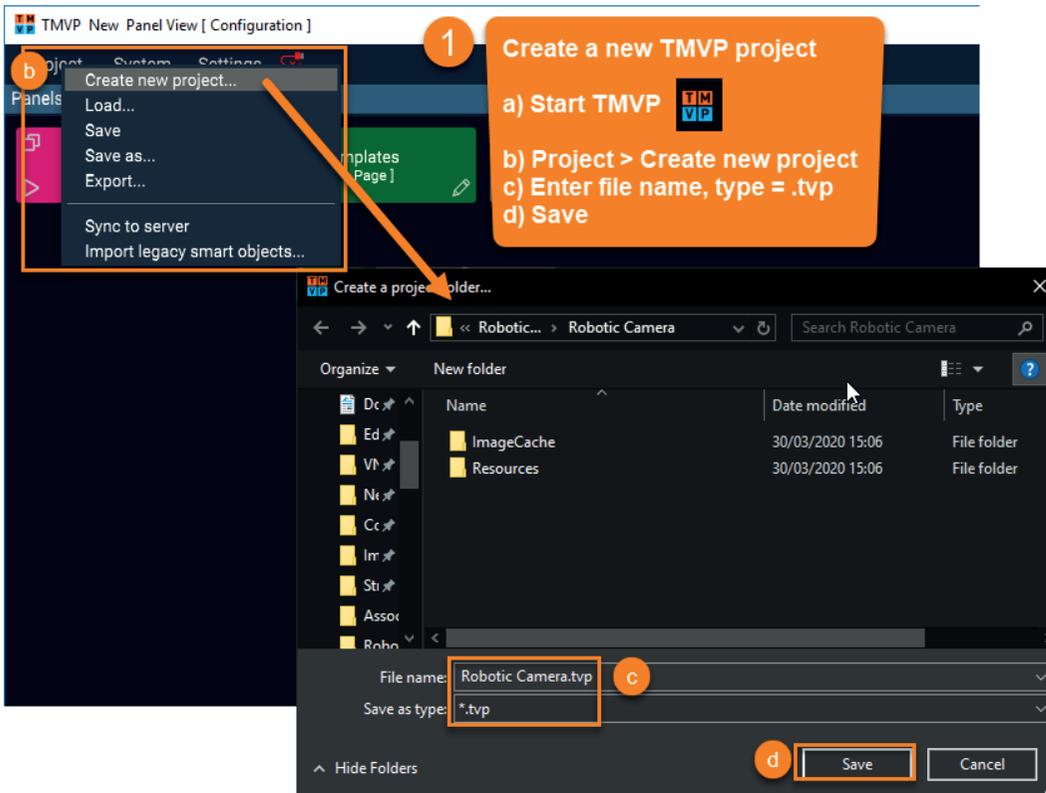
3. SET UP AN INTERFACE FOR THE TMVP

3. ADD THE TMVP INTERFACE

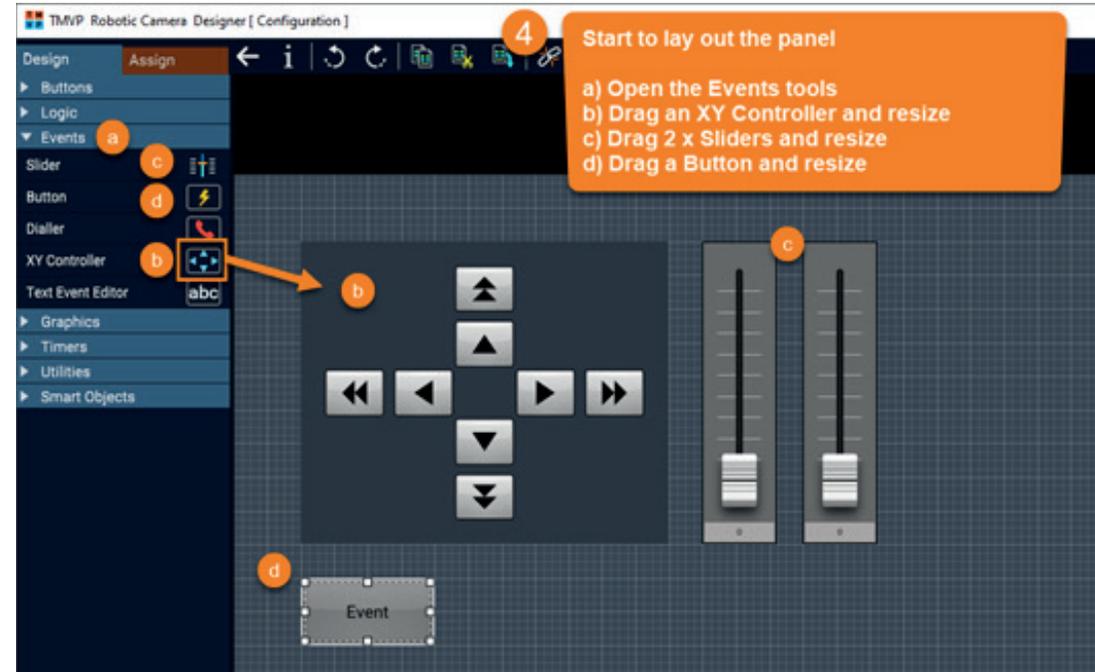
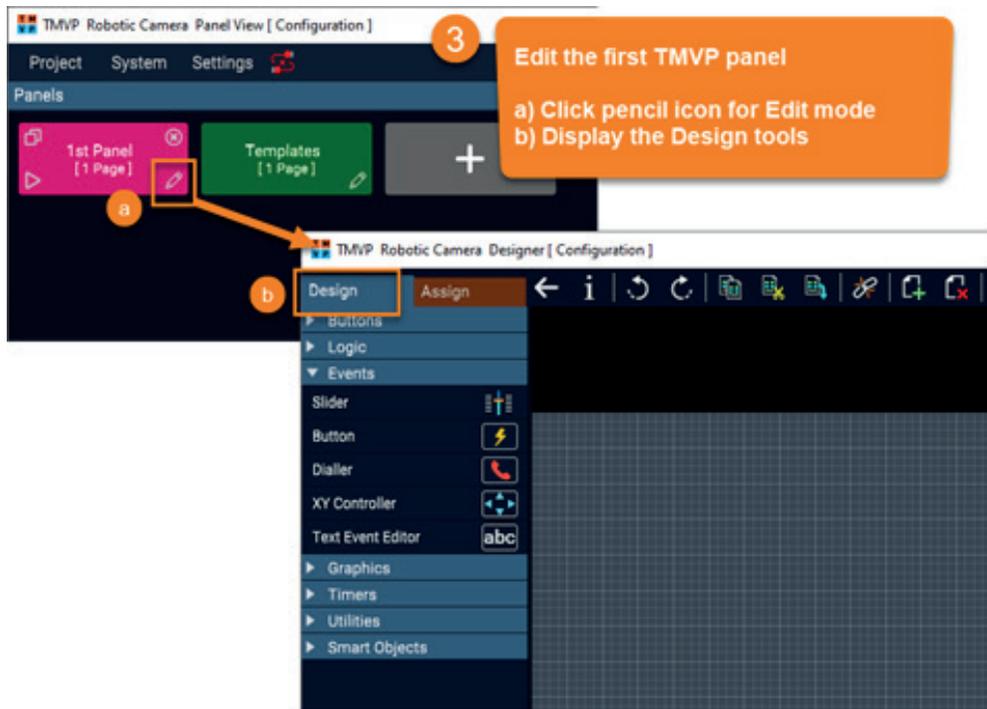


3. SET UP AN INTERFACE FOR THE TMVP

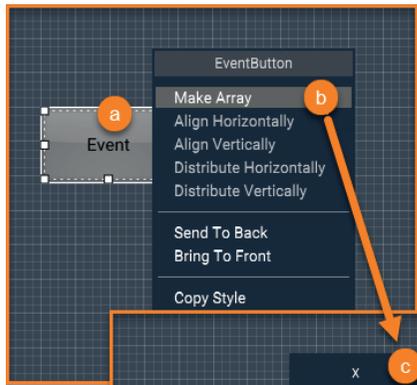
4. CREATE THE TMVP PANEL



4. CREATE THE TMVP PANEL

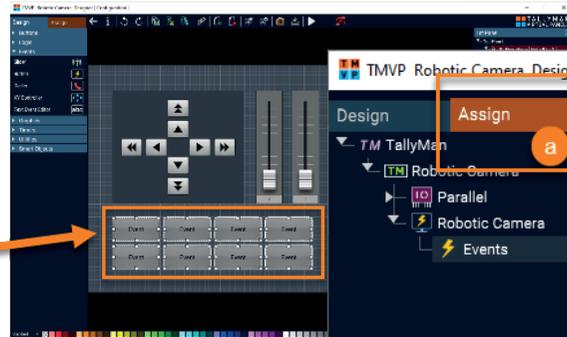
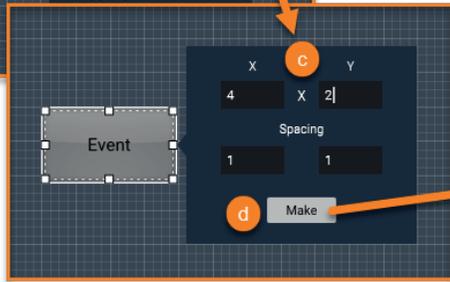


4. CREATE THE TMVP PANEL



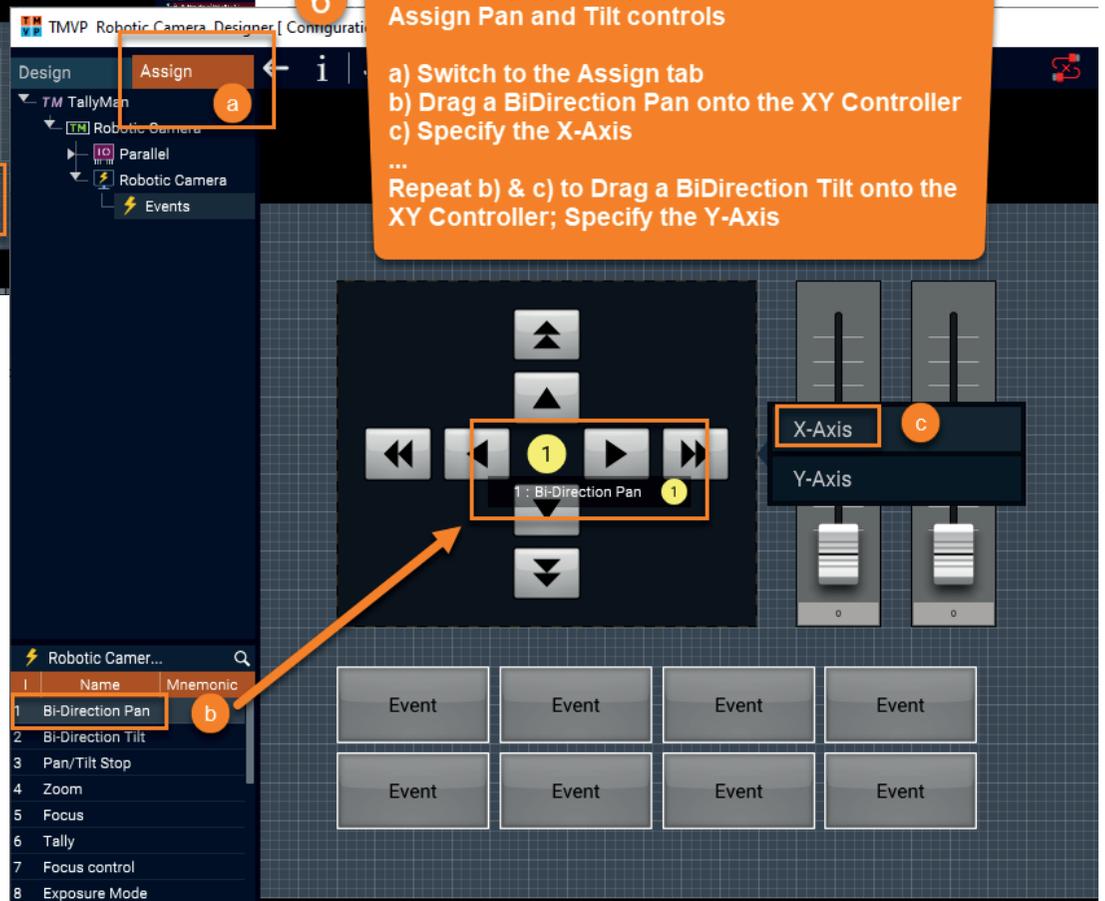
5 Make an array of buttons

- a) Right-click on the Event button
- b) Choose Make Array
- c) Specify 4 x 2 in the dialog
- d) Click Make

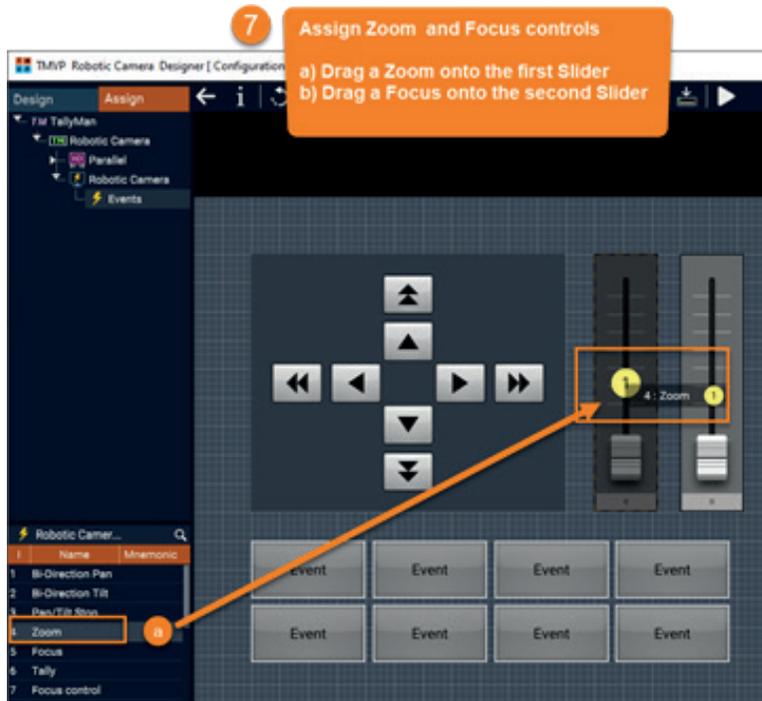


6 Assign Pan and Tilt controls

- a) Switch to the Assign tab
- b) Drag a BiDirection Pan onto the XY Controller
- c) Specify the X-Axis
- ...
- Repeat b) & c) to Drag a BiDirection Tilt onto the XY Controller; Specify the Y-Axis



4. CREATE THE TMVP PANEL



4. CREATE THE TMVP PANEL

9 Assign the Button Events

a) Switch to the Assign tab
b) Select the top four buttons
c) Drag the "29 Select Preset" element
d) Drop it onto the selected buttons
...

Repeat to assign "28 Set Preset" to the lower 4 buttons

Note:
Be sure to drop the Select Preset element just outside the selected buttons
If you drop onto a specific button, only that button will be assigned; you want to assign all four buttons simultaneously!

| ID | Name | Mnemonic |
|----|-------------------|----------|
| 24 | Black | |
| 25 | Gamma Black | |
| 26 | Zoom Pos | |
| 27 | Focus direct | |
| 28 | Set Preset | |
| 29 | Select Preset | |
| 30 | Power Control | |
| 31 | Master Detail Mo | |
| 32 | Master Detail Lev | |

4. CREATE THE TMVP PANEL

10 Assign the Button Presets

a) Select the left two buttons
b) Set Parameter Max & Min to 1
...

Repeat to assign 2, 3 & 4 to the remaining pairs

Design Assign

TM TallyMan

- Robotic Camera
 - Parallel
 - Robotic Camera
 - Events

Robotic Camer...

| I | Name | Mnemonic |
|----|-------------------|----------|
| 24 | Black | |
| 25 | Gamma Black | |
| 26 | Zoom Pos | |
| 27 | Focus direct | |
| 28 | Set Preset | |
| 29 | Select Preset | |
| 30 | Power Control | |
| 31 | Master Detail Mo | |
| 32 | Master Detail Lev | |
| 33 | Master Detail H/ | |
| 34 | Colour Detail Mo | |
| 35 | Colour Detail Lev | |

Standard

1st Panel

- 1st Panel
 - New Page [Goto ID = 1]
 - XYController
 - Slider
 - Slider
 - EventButton
 - EventButton
 - EventButton
 - EventButton
 - Label
 - Label
 - EventButton
 - EventButton
 - EventButton
 - EventButton

Event Button

Assignments

Assigned

Parameter Max 1

Parameter Min 1

Parent Robotic Camera

Recall Preset

Save Preset

1 2 3 4

1 2 3 4

4. CREATE THE TMVP PANEL

11 Set up three rotary controls

a) Switch to the Design tab
b) Drag a Slider
c) Set it to type Rotary
d) Right-click on the control and make a 3 x 1 array (or use Copy/Paste)

The screenshot shows the TallyMan Virtual Panels Designer interface. On the left, the 'Design' tab is active, and the 'Slider' control is highlighted in the 'Events' category. The central workspace displays a control panel with directional buttons, two vertical sliders, and two rows of four buttons labeled 'Recall Preset' and 'Save Preset'. On the right, the 'Slider' control is selected in the 'Style' panel, and its 'Slider Type' is set to 'Rotary'. Annotations 'a', 'b', 'c', and 'd' indicate the steps: 'a' points to the 'Slider' in the sidebar, 'b' points to a single rotary slider being dragged, 'c' points to the 'Rotary' option in the 'Slider Type' dropdown, and 'd' points to a 3x1 array of rotary sliders.

4. CREATE THE TMVP PANEL

12 Assign the rotary controls

- a) Switch to the Assign tab
- b) Drag Iris onto 1st Rotary control
- c) Second control = Shutter
- d) Third control = Gain

The interface shows a central workspace with various controls: a directional pad, two vertical sliders, three rotary knobs, and two 2x4 grids of buttons labeled 'Recall Preset' and 'Save Preset'. A left sidebar contains a tree view and a parameter list. The parameter list is as follows:

| I | Name | Mnemonic |
|----|---------------|----------|
| 4 | Zoom | |
| 5 | Focus | |
| 6 | Tally | |
| 7 | Focus control | |
| 8 | Exp Mod | |
| 9 | Iris | |
| 10 | Shutter | |
| 11 | Gain | |
| 12 | White Balance | |
| 13 | WB Trigger | |
| 14 | R Gain | |
| 15 | B Gain | |

Orange arrows point from the 'Iris' parameter (9) to the first rotary knob, from 'Shutter' (10) to the second rotary knob, and from 'Gain' (11) to the third rotary knob.

4. CREATE THE TMVP PANEL

13 Label the Sliders

For each Slider control:
a) Select the control element
b) Enter the Label Text
c) Scroll down to Advanced section in preferences and uncheck Auto Labeled

Names are:
Zoom
Focus
Iris
Shutter
Gain

The screenshot shows the TallyMan Virtual Panels software interface. The main workspace displays a control panel with several sliders. The Gain slider is selected, and its properties are shown in the right-hand panel. The Name is 'Slider' and the Label Text is 'Gain'. The Advanced section shows 'Auto Labeled' unchecked. A list of controls on the right includes XYController, Slider, EventButton, and Label.

Slider

▼ Main

Name Slider

Label Text Gain

Slider Type Rotary

Returns To Neutral

▼ Style

Slider Style One

Textbox Placement Bottom/Right

Height 1.00

Opacity 1.00

Slider

Highlight Col

Label Col

Outline Col

Text Col

Thumb Col

Track Col

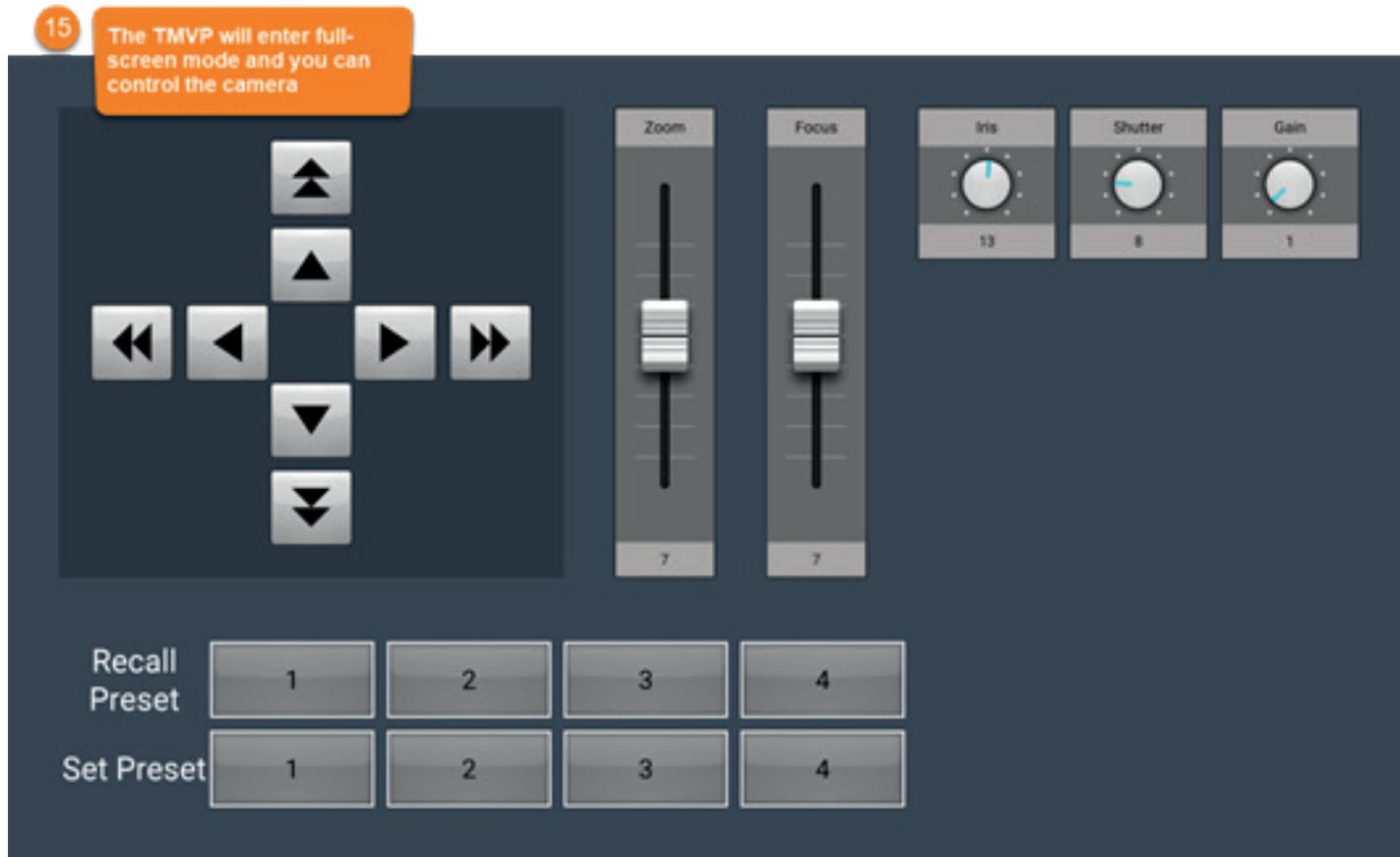
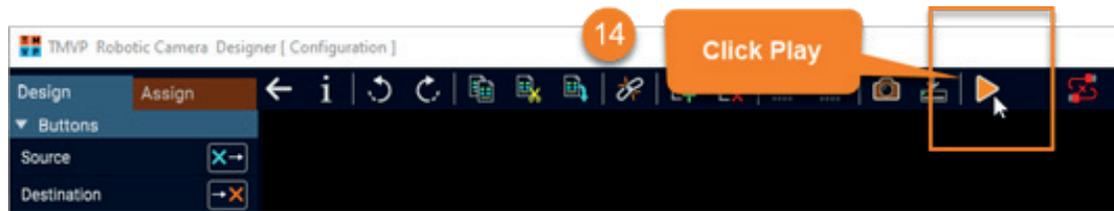
▼ Advanced

Locking Group

Auto Labeled

Auto Named

4. CREATE THE TMVP PANEL



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