

# User Manual

# Graphical Control Panel



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## About This Manual

This User Manual provides information to create a Graphical Control Panel (Softpanel) for the QuEST Rail QLCP-NET controller. This manual is meant to give the user a general understanding of all the components and features available when creating a Softpanel. The actual layout and features are solely up to the end user and also depend on the bits sent to the QLCP-NET by the wayside processor.

## Product Support

Template panel files and icon templates are available upon request.

|                            |  |
|----------------------------|--|
| <b>Product Orders</b>      | <a href="mailto:orders@questrail.com">orders@questrail.com</a>                   |
| <b>Technical Support</b>   | <a href="mailto:waysideproducts@questrail.com">waysideproducts@questrail.com</a> |
| <b>RMA Requests</b>        | <a href="mailto:rma@questrail.com">rma@questrail.com</a>                         |
| <b>Accounts Payable</b>    | <a href="mailto:ap@questrail.com">ap@questrail.com</a>                           |
| <b>Accounts Receivable</b> | <a href="mailto:ar@questrail.com">ar@questrail.com</a>                           |
| <b>Other Inquiries</b>     | <a href="mailto:info@questrail.com">info@questrail.com</a>                       |
| <b>Or Call</b>             | (660) 525-5180   |

# 1 Introduction

The QLCP-NET (810-110006-0020) provides the option to interface to its internal I/O map (512 inputs and 512 outputs) through a web-based graphical panel. This feature is only supported on a QLCP-NET which is configured as a Server. Use the QLCP-NET Developer Tool to create a custom graphical control panel to upload to the QLCP-NET. Once uploaded to the QLCP-NET, use a web browser, enter the QLCP-NET's IP address as the URL, and the QLCP-NET will serve the panel page.

*Note: Google Chrome is the preferred and default browser to be used with the QLCP-NET Developer Tool. To design or use the web-based Control Panel, you must have the latest version of Chrome or Mozilla Firefox installed on your computer. Proper operation of other browsers cannot be guaranteed.*

The QLCP-NET Developer Tool is used to configure the products in the QuEST LCP product family and to develop the Graphical Control Panel files. This manual discusses the development of Graphical Control Panel files. For more information about QuEST LCP product family configuration please see the QLCP User Manual located at <http://www.questrail.com/glcp> as shown below. Click the "QLCP User Manual" link for download.

The QLCP-NET Developer Tool is a free download available at <http://www.questrail.com/glcp> under the "DOWNLOADS" section as shown below. "QLCP-NET Developer Tool Setup"

## DOWNLOADS

### LATEST VERSIONS

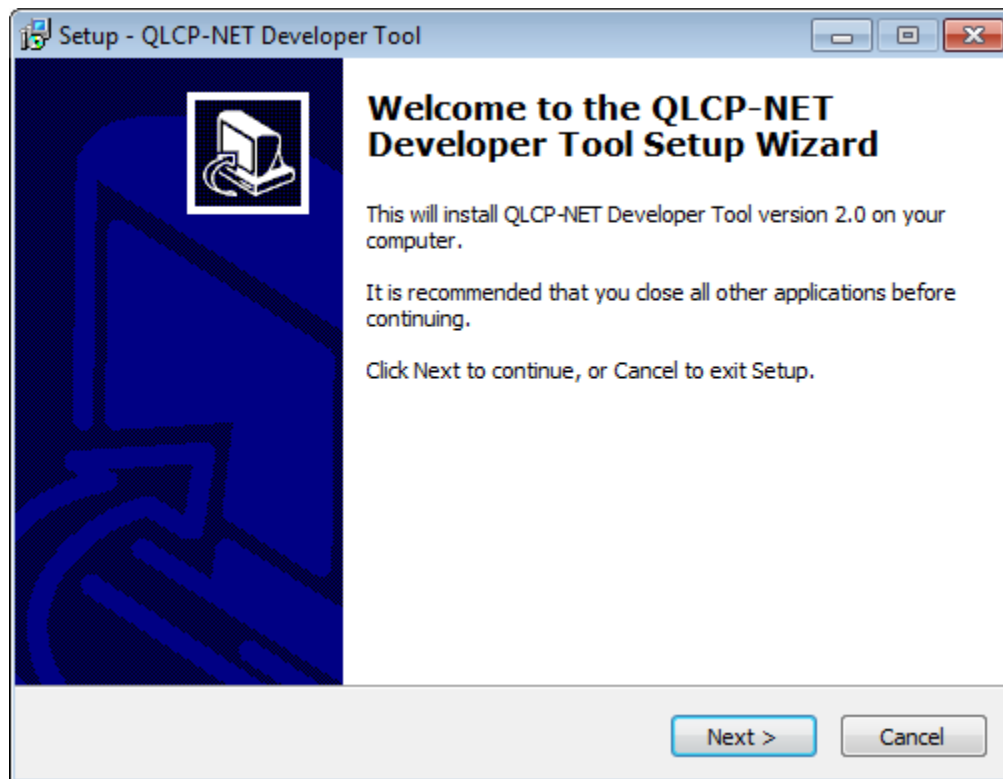
- QLCP User Manual Rev A04
- QLCP Network Software v1.07
- QLCP Executive Software v2.24
- QLCP-NET Developer Tool Setup v3.15.1
- QLCP Web GUI Software v4.10.1
- Release Notes

Using the QLCP-NET Developer Tool, any user can create or edit Softpanel files (.cpf) without purchase of product from QuEST Rail. It is not necessary to be connected to a QLCP-NET to design a Control Panel. It is only necessary to be connected when uploading and downloading Control Panel files.

Templates and example files are available to customers by request via email to [waysideproducts@questrail.com](mailto:waysideproducts@questrail.com) or [info@questrail.com](mailto:info@questrail.com).

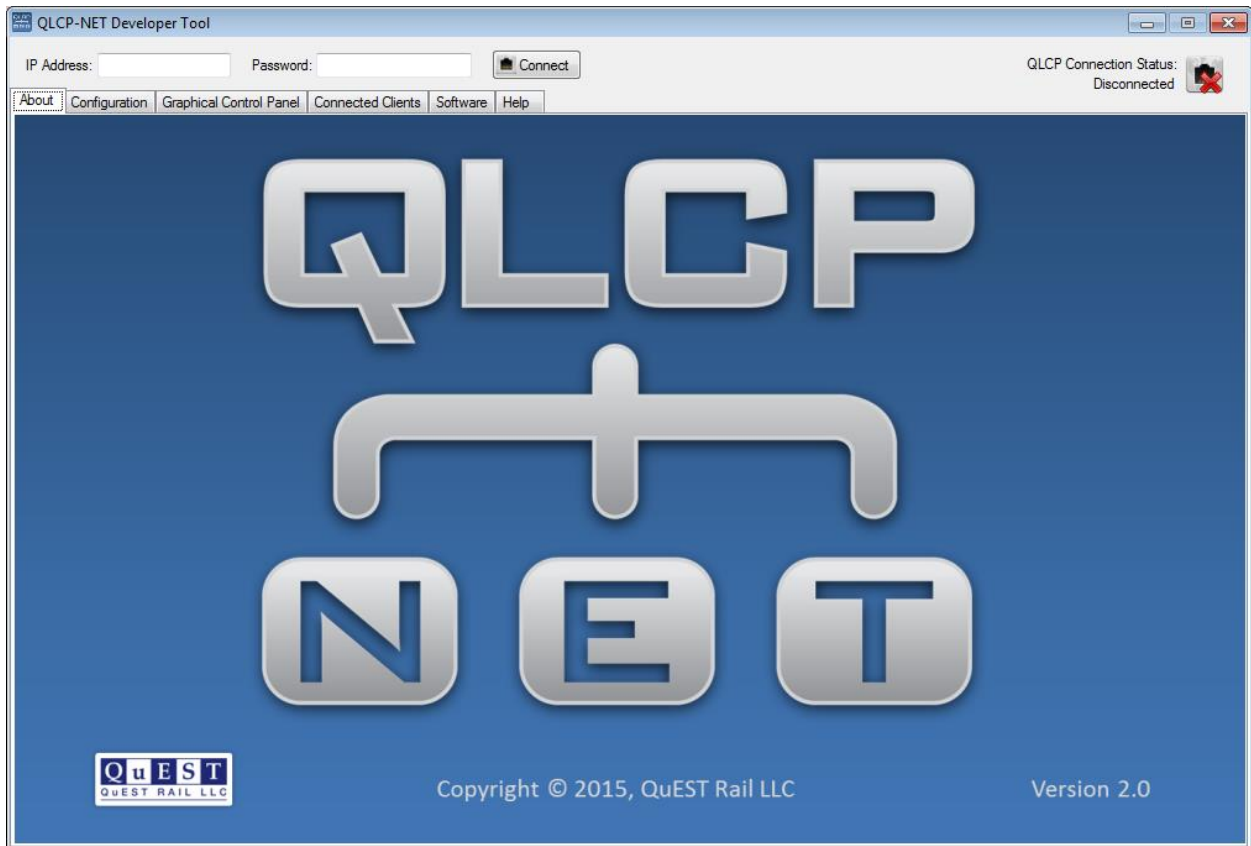
## 2 QLCP-NET Developer Tool Installation

To install the QLCP-NET Developer Tool, double-click on the “QLCP-NET\_Dev\_Tool\_Setup.exe” file. You should see the following dialog box. The installer program will walk you through the installation process.



The QLCP-NET Developer Tool requires Microsoft .NET Framework 4 to be installed on your computer. The installer program will automatically detect and install .NET Framework 4 if it is not already installed.

*Note: The QLCP-NET Developer Tool can be used offline from a QLCP-NET controller board for many of its features including Softpanel development. Features that require connection to the QLCP-NET will be disabled when there is no established connection.*



# 3

## Control and Indication Bit Labels

Open the QLCP-NET Developer Tool and select the “Graphical Control Panel” tab as shown below.

QLCP-NET Developer Tool

IP Address:  Password:   QLCP Connection Status: Disconnected

About Configuration Graphical Control Panel Connected Clients Software Help

Open Labels Save Labels Import Labels Default Labels Design Panel Upload Panel Download Panel Panel Compare

Mode:  QLCP  DLV

Controls

| Byte | Bit 0 Name | Bit 1 Name | Bit 2 Name | Bit 3 Name | Bit 4 Name | Bit 5 Name | Bit 6 Name | Bit 7 Name |
|------|------------|------------|------------|------------|------------|------------|------------|------------|
| 0    |            | 2-CON      | 3-CON      | 4-CON      | 5-CON      | 6-CON      | 7-CON      | 8-CON      |
| 1    | 9-CON      | 10-CON     | 11-CON     | 12-CON     | 13-CON     | 14-CON     | 15-CON     | 16-CON     |
| 2    | 17-CON     | 18-CON     | 19-CON     | 20-CON     | 21-CON     | 22-CON     | 23-CON     | 24-CON     |
| 3    | 25-CON     | 26-CON     | 27-CON     | 28-CON     | 29-CON     | 30-CON     | 31-CON     | 32-CON     |
| 4    | 33-CON     | 34-CON     | 35-CON     | 36-CON     | 37-CON     | 38-CON     | 39-CON     | 40-CON     |
| 5    | 41-CON     | 42-CON     | 43-CON     | 44-CON     | 45-CON     | 46-CON     | 47-CON     | 48-CON     |
| 6    | 49-CON     | 50-CON     | 51-CON     | 52-CON     | 53-CON     | 54-CON     | 55-CON     | 56-CON     |
| 7    | 57-CON     | 58-CON     | 59-CON     | 60-CON     | 61-CON     | 62-CON     | 63-CON     | 64-CON     |
| 8    | 65-CON     | 66-CON     | 67-CON     | 68-CON     | 69-CON     | 70-CON     | 71-CON     | 72-CON     |
| 9    | 73-CON     | 74-CON     | 75-CON     | 76-CON     | 77-CON     | 78-CON     | 79-CON     | 80-CON     |

Indications

| Byte | Bit 0 Name | Bit 1 Name | Bit 2 Name | Bit 3 Name | Bit 4 Name | Bit 5 Name | Bit 6 Name | Bit 7 Name |
|------|------------|------------|------------|------------|------------|------------|------------|------------|
| 0    | 1-IND      |            | 3-IND      | 4-IND      | 5-IND      | 6-IND      | 7-IND      | 8-IND      |
| 1    | 9-IND      | 10-IND     | 11-IND     | 12-IND     | 13-IND     | 14-IND     | 15-IND     | 16-IND     |
| 2    | 17-IND     | 18-IND     | 19-IND     | 20-IND     | 21-IND     | 22-IND     | 23-IND     | 24-IND     |
| 3    | 25-IND     | 26-IND     | 27-IND     | 28-IND     | 29-IND     | 30-IND     | 31-IND     | 32-IND     |
| 4    | 33-IND     | 34-IND     | 35-IND     | 36-IND     | 37-IND     | 38-IND     | 39-IND     | 40-IND     |
| 5    | 41-IND     | 42-IND     | 43-IND     | 44-IND     | 45-IND     | 46-IND     | 47-IND     | 48-IND     |
| 6    | 49-IND     | 50-IND     | 51-IND     | 52-IND     | 53-IND     | 54-IND     | 55-IND     | 56-IND     |
| 7    | 57-IND     | 58-IND     | 59-IND     | 60-IND     | 61-IND     | 62-IND     | 63-IND     | 64-IND     |
| 8    | 65-IND     | 66-IND     | 67-IND     | 68-IND     | 69-IND     | 70-IND     | 71-IND     | 72-IND     |
| 9    | 73-IND     | 74-IND     | 75-IND     | 76-IND     | 77-IND     | 78-IND     | 79-IND     | 80-IND     |

Multi-Server Soft Panel

Server 1 IP Address:  192.168.0.100

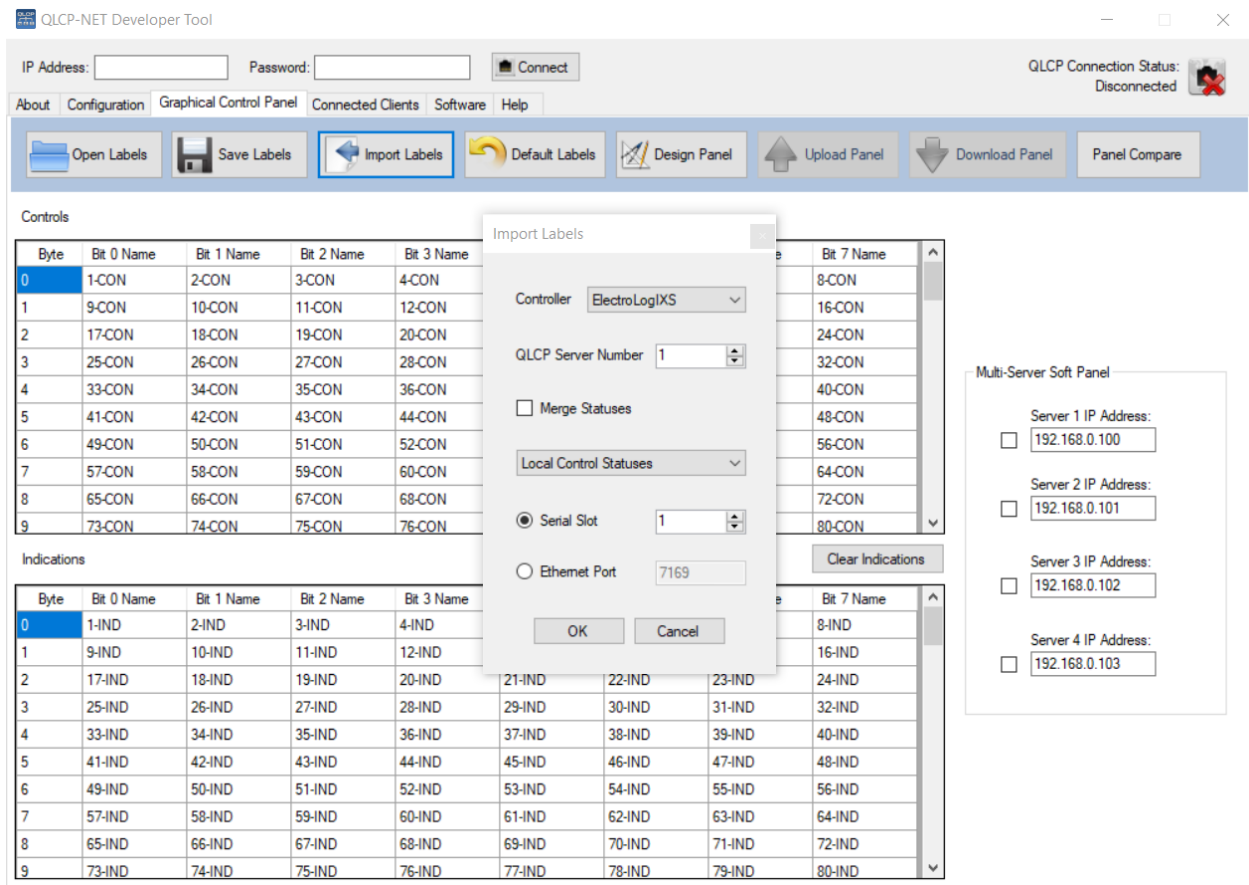
Server 2 IP Address:  192.168.0.101

Server 3 IP Address:  192.168.0.102

Server 4 IP Address:  192.168.0.103

The array above contains all possible controls and indications, 512 bits each. The default labels are shown above. The default labels can be used, but importing meaningful status names can simplify the design process. The labels you see in the control and indication tables will be available for assignment to your panel graphics when you launch the Control Panel editor.

Labels can be imported from your ElectroLogIXS or VHLC report file, or MicroLok II ml2 file by clicking on the “Import Labels” button.



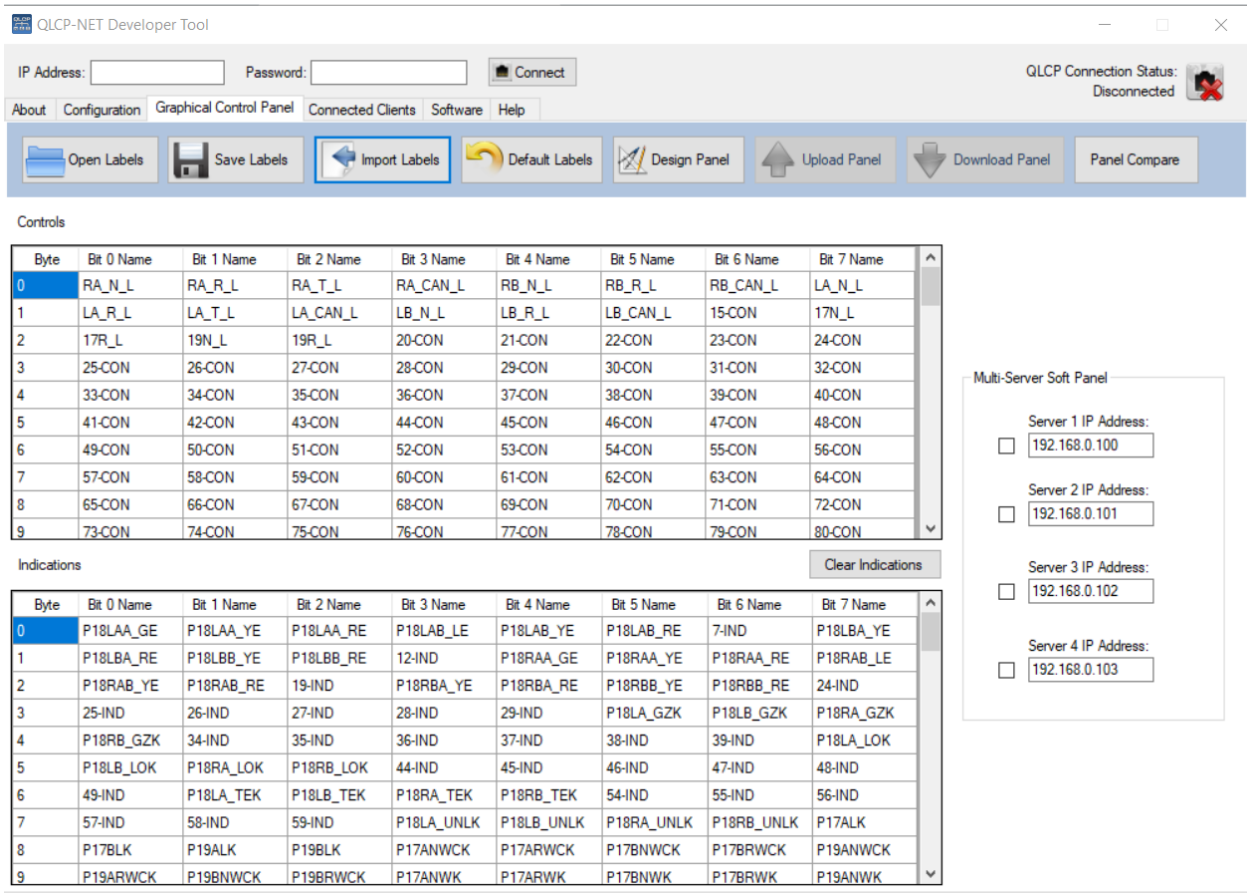
Select the proper controller from the dropdown menu and the QLCP-NET Server Number (typically 1).

The “Merge Statuses” box is typically unchecked. Contact QuEST Rail for more info if required.

Select the status type in the second dropdown box. Either Local Control Statuses or Office Statuses. Finally select the serial slot number defined in the application program.

Once OK is clicked, select the report file stored on your computer and click open. The labels will now populate the array as shown below.





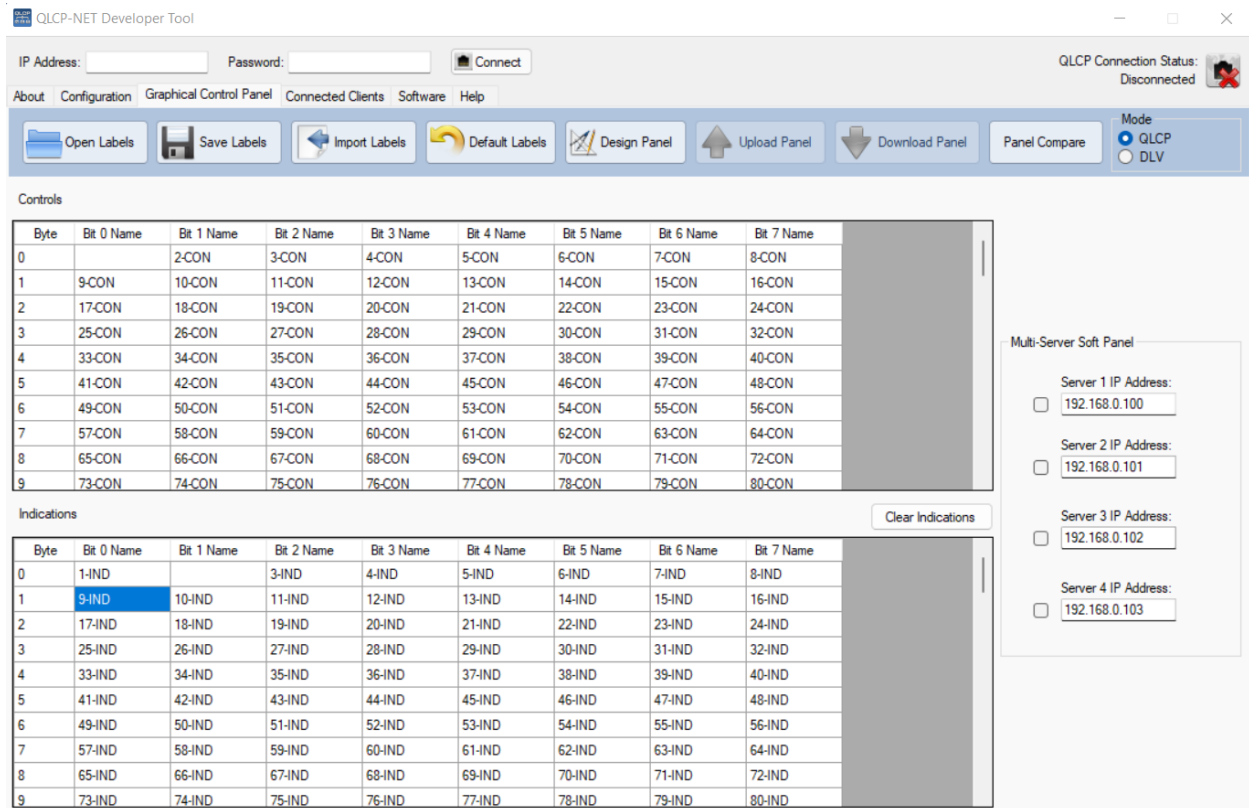
Labels can also be manually entered by clicking a cell in the array then typing a custom value. This manual entry can then be saved by clicking the Save Labels button, to be later opened using the Open Labels button.

|   |              |        |
|---|--------------|--------|
| 2 | 17R_L        | 19N_L  |
| 3 | 25-CON       | 26-CON |
| 4 | Manual Entry | 34-CON |
| 5 | 41-CON       | 42-CON |
| 6 | 49-CON       | 50-CON |

**Note:** If entering labels manually, be sure to not leave any blank. Each cell must contain text.

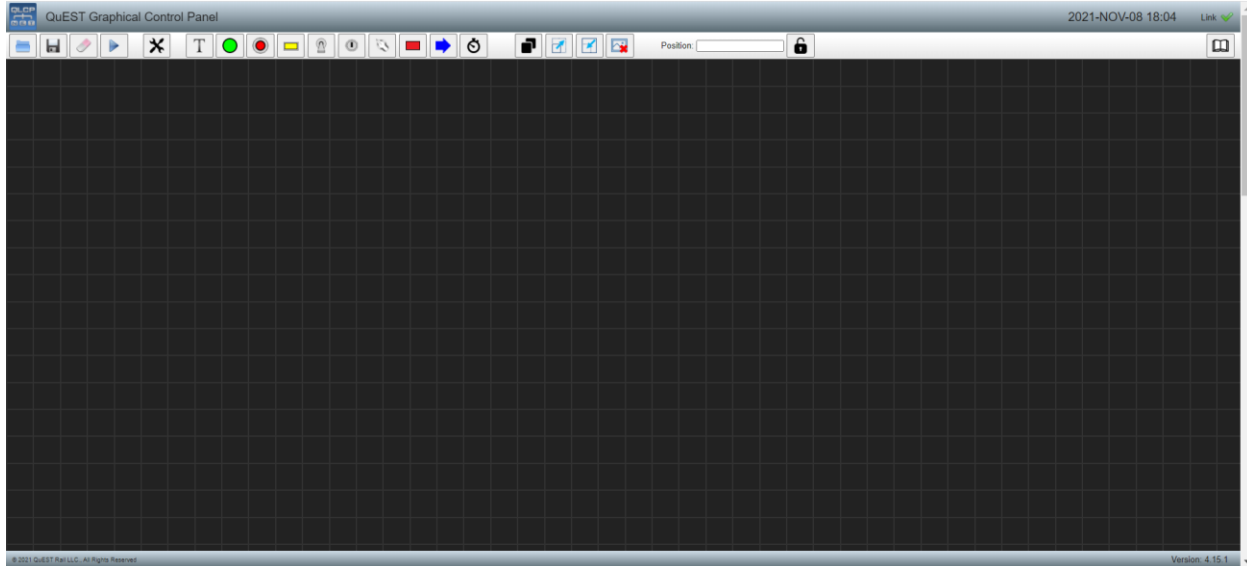
# 4 Design Panel

Before beginning, ensure the Mode on the right side of the button bar, is set to QLCP.



To begin Softpanel design click the “Design Panel” button. A browser selection window will open with Google Chrome as the default and preferred browser. Mozilla Firefox also works well if desired. While Microsoft Edge and Opera are available choices, proper functionality cannot be guaranteed at this time.

After the browser selection is made the browser window will open as shown below.



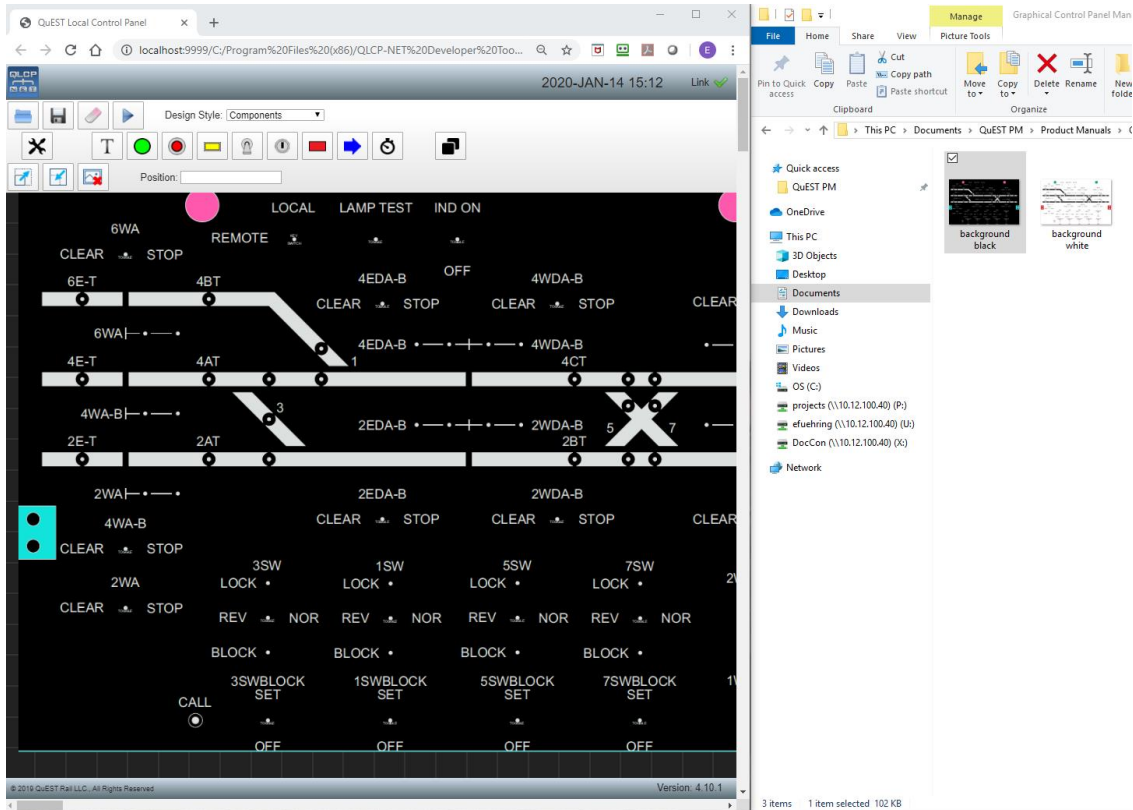
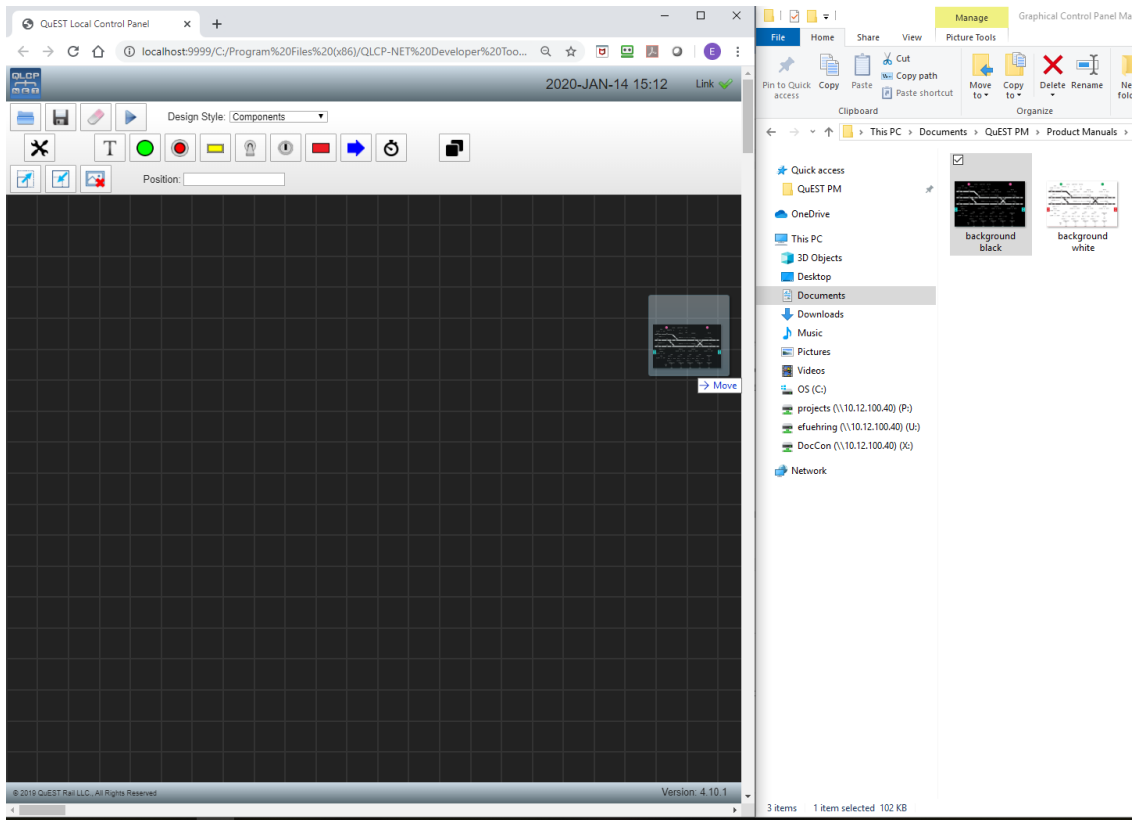
## Main Menu Bar

When the Control Panel editor is first launched, the menu options are displayed as shown above. From left to right, the options are:

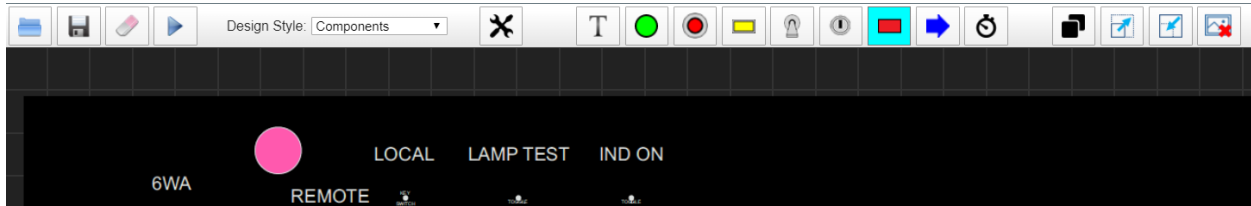
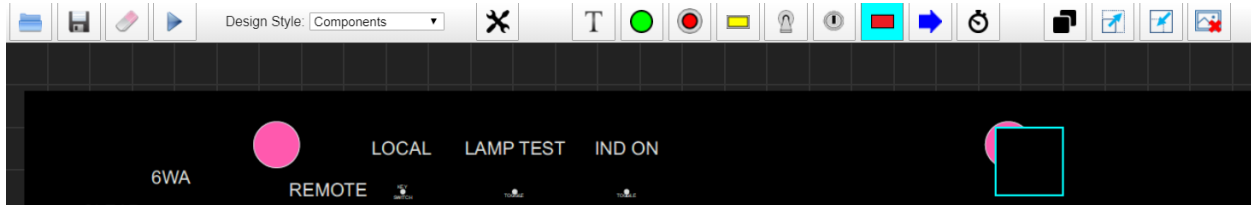
- Open – Click on this button to open a previously saved panel.
- Save – Click on this button to save a panel.  
**Note:** There is no autosave. Click the save button often to ensure changes are not lost. A browser refresh or crash will result in all unsaved changes being lost.
- Clear All – Click this button to erase everything in the current design. A popup window asking for confirmation will appear asking for confirmation.
- Run – Click on this button to display “Run” mode. This disables editing capability and allows you to test your design using the control and indication tables in the QLCP-NET Developer Tool Graphical Control Panel tab. More on this feature in section 5.
- Design Style – Components or Mosaic Tiles can be selected. Components is default and the most commonly used. The Mosaic Tiles option is a legacy feature still supported but no longer widely used. For more information on this feature contact QuEST Rail.
- Show Properties – This button is used to give properties to the different icons listed below.
- Drop Text – Select this button to drop text fields in the Softpanel stage.

- Drop LED – Select this button to drop a LED in the Softpanel stage.
- Drop Pushbutton (Round) – Select this button to drop a round pushbutton in the Softpanel stage. This icon can be defined as a pushbutton control, indication, or assigned as both.
- Drop Square Pushbutton – Select this button to drop a square pushbutton in the Softpanel stage. This icon can be defined as a pushbutton control, indication, or assigned as both.
- Drop Toggle Switch – Select this button to drop a toggle switch in the Softpanel stage. This icon can be defined as an on-off toggle switch or a momentary on-off-on toggle switch.
- Drop Key Switch – Select this button to drop a key switch in the Softpanel stage. This icon can be defined as two, three, or four position key switch.
- Drop Rotary Switch – Select this button to drop a rotary switch in the Softpanel stage. This icon has 6 positions. Press the bottom of the icon to rotate the switch clockwise and the top to rotate counterclockwise.
- Drop Quadrilateral – Select this button to drop a quadrilateral in the Softpanel stage. This icon can be used to create many custom shapes such as signal masts, track circuits, switches, etc. The shape can be changed from a rectangle to a square, triangle, or trapezoid.
- Drop Arrow – Select this button to drop an arrow in the Softpanel stage.
- Drop Timer – Select this button to drop a timer in the Softpanel stage. This is useful when adding ASR timers next to signals to visually see the ASR timer running.
- Duplicate – When depressed, it duplicates the icon selected in the Softpanel stage, including size, shape, color, and all other properties of the original.
- Increase Background Image Size – When depressed, this button increases the size of the background image in the Softpanel stage.
- Decrease Background Image Size – When depressed, this button decreases the size of the background image in the Softpanel stage.
- Remove Background Image – When depressed, this button deletes the background image in the Softpanel stage.



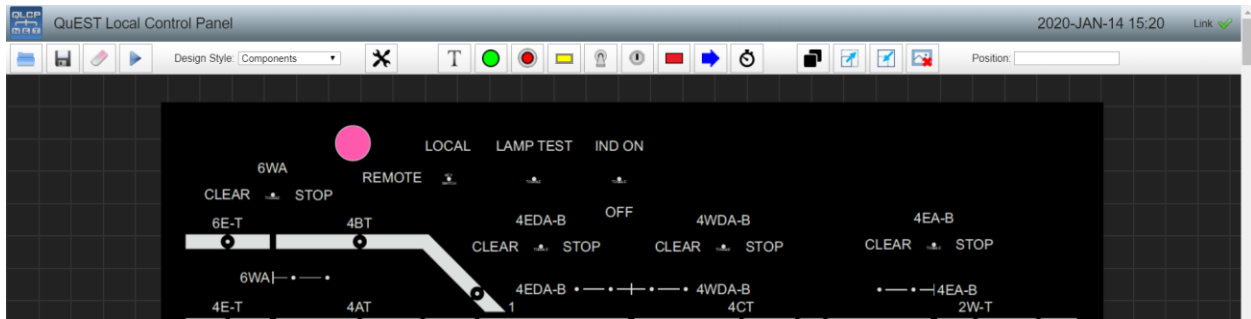


Unwanted artwork from the background image can be “deleted” by dropping a black quadrilateral over that section of the artwork.



The background image can also be moved around the stage to make it centered on the screen the Softpanel will be displayed on.

To move the background image, double click anywhere on the stage, but not on an icon already placed. The background image will then be selected and can be moved using the mouse, or arrow keys on your computer.

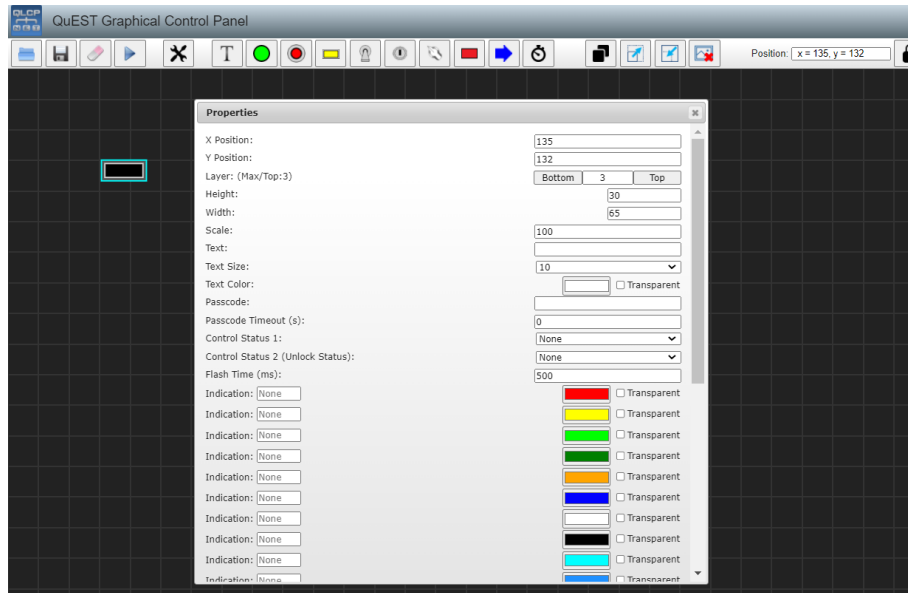


To drop the background image, just double click again on the stage.

## Properties Menu

Once an ICON is placed on the stage, its properties can be configured. To access the properties of an icon, select the icon, then click the properties button as shown below.

Configurable properties vary, depending on the ICON.



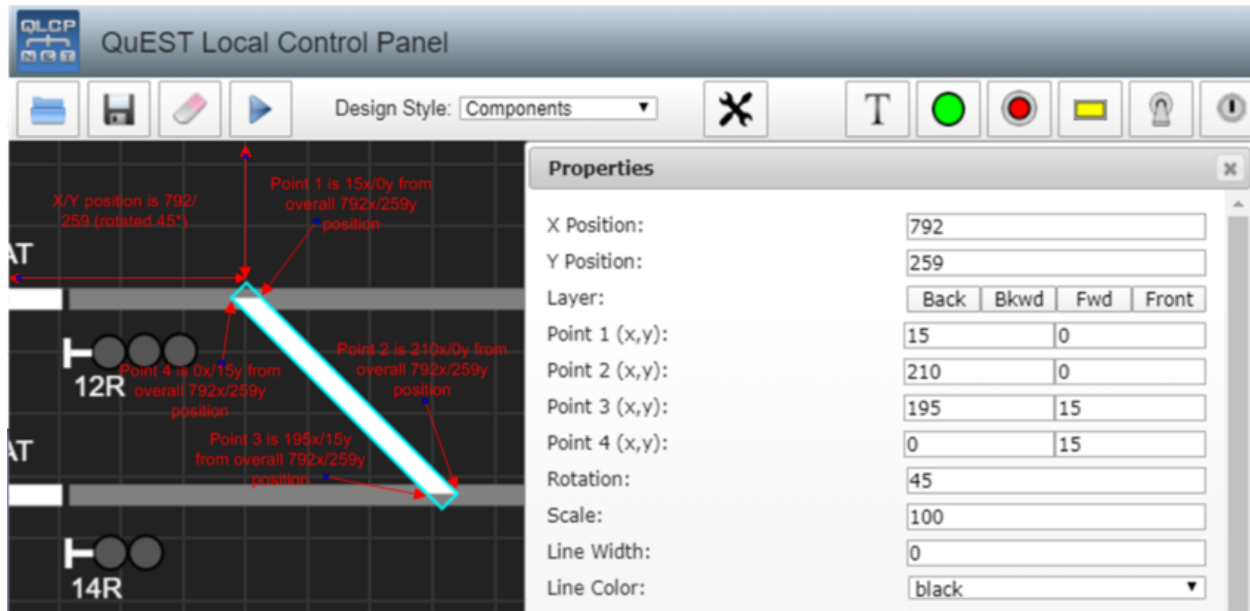
- X Position – Displays the icon’s X axis position and allows for manual entry of X axis position.
- Y Position – Displays the icon’s Y axis position and allows for manual entry of Y axis position.
  - The X/Y axis position notes the point of the upper left pixel of the icon for the quadrilateral, square pushbutton, arrow, and timer icons, and rotates as the icon is rotated.
  - The X/Y axis position notes the center pixel of the icon for the round LED, round pushbutton, toggle switch, key switch, and rotary switch icons.
  - For TEXT, the X/Y position notes the upper left pixel if left justified, top center when center justified, and top right if right justified.
- Layer – Icons can be positioned on top or beneath other icons.
  - Back – sends the icon to the very back layer.
  - Bkwd – Sends the icon back one layer.
  - Fwd – Sends the icon forward one layer.
  - Front – Sends the icon to the very top layer.
- Scale – Adjust the scale larger or smaller. 100 = default
- Text – Enter the displayed text for the icon here.



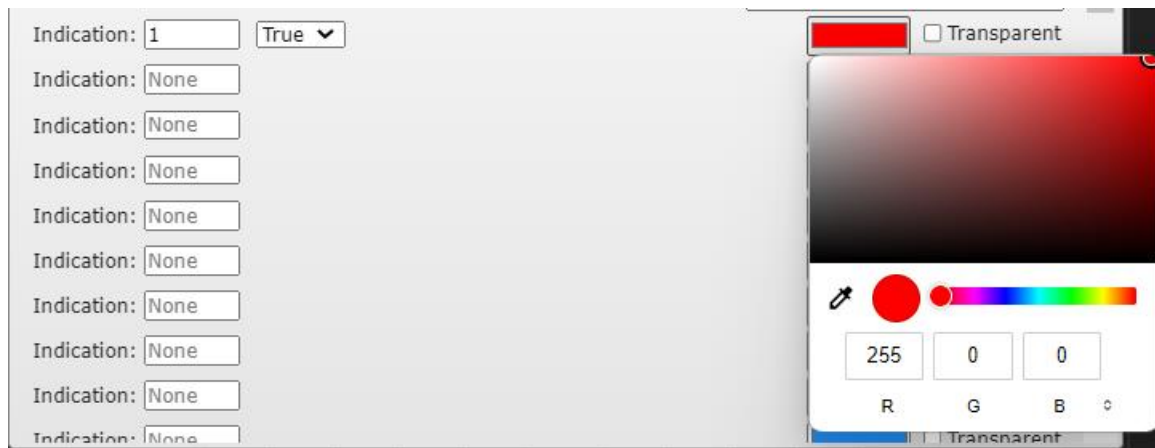
- Text Box Alignment – Change from Left, Center, or Right justification for text icons.
- Text Size – Adjust text font size.
- Rotation – Rotate icons from 0 degrees to 359 degrees.
- Line Width – Enter outside line width. Number indicates pixels.
- Line Color – Change the color of the line.
- Default Fill Color – Change the default fill color.
- Default Text Color – Change the default text color.
- Flash Time (ms) – Change the flash time in milliseconds, when the flash status is enabled.
- Passcode – Enter the user defined passcode to enable the passcode feature. This feature is disabled if the passcode field is blank.
- Passcode Timeout (s) – This is the value, in seconds, that the control will be enabled after the passcode is correctly entered.
  - Note – The passcode timer only runs when the softpanel stage is idle after the last user input.
- Momentary (ON-OFF-ON) – Select this box to change the toggle switch from a standard OFF-ON switch to a momentary ON-OFF-ON switch.
- Rotate 90 degrees – Select this box to rotate a toggle switch 90 degrees.
- Timer Duration – Enter the duration of the timer, in seconds, for the timer icon.
- Point 1/2/3/4 (x/y) – Input the x/y axis position of each of the 4 points on a quadrilateral icon to create custom shapes.
  - Examples

The screenshot shows the QuEST Local Control Panel interface. The main workspace displays a grid with a cyan rectangle. Red arrows point to the corners of the rectangle, with text labels: "Point 1 is 0x/0y from overall 100x/100y position", "Point 2 is 200x/0y from overall 100x/100y position", "Point 3 is 200x/50y from overall 100x/100y position", and "Point 4 is 0x/50y from overall 100x/100y position". A label "X/Y position is 100/100" is also present. To the right is a "Properties" panel with various settings:

| Properties     |                     |
|----------------|---------------------|
| X Position:    | 100                 |
| Y Position:    | 100                 |
| Layer:         | Back Bkwd Fwd Front |
| Point 1 (x,y): | 0 0                 |
| Point 2 (x,y): | 200 0               |
| Point 3 (x,y): | 200 50              |
| Point 4 (x,y): | 0 50                |
| Rotation:      | 0                   |
| Scale:         | 100                 |
| Line Width:    | 0                   |

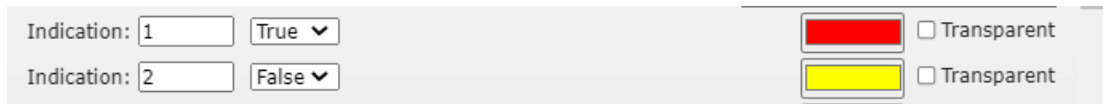


- Control Status (1-6) – Used to define the Control bit associated with the applicable icon. The control bit assigned to this icon function will go true when the icon is pressed, toggled, switched.
- Control Status (Unlock Status) – Used to define the Control bit that will go true when the password protected icon is unlocked.
- Indication – Select the appropriate indication bit for the icon to display a solid color. All colors can be modified using the color palette.



Example:

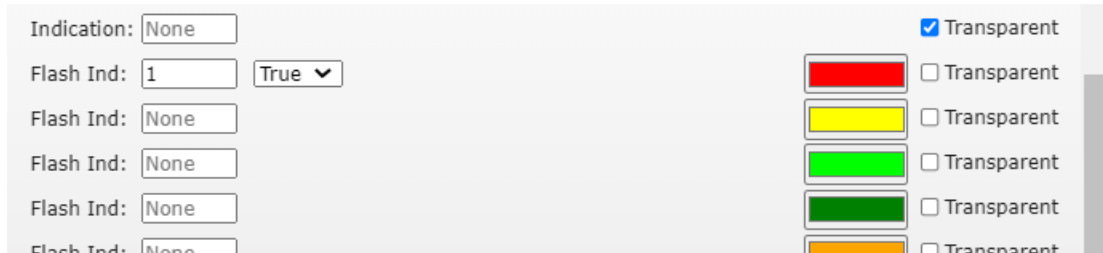
When Indication 1 from the Wayside controller is true, the Icon will turn red.  
 When Indication 2 from the Wayside controller is false, the Icon will turn red.



- Indication Flashing (red, yellow, etc.) – Select the appropriate indication bit for the icon to display a flashing color.

Example:

When Indication 1 from the Wayside controller is true, the Icon will flash red.

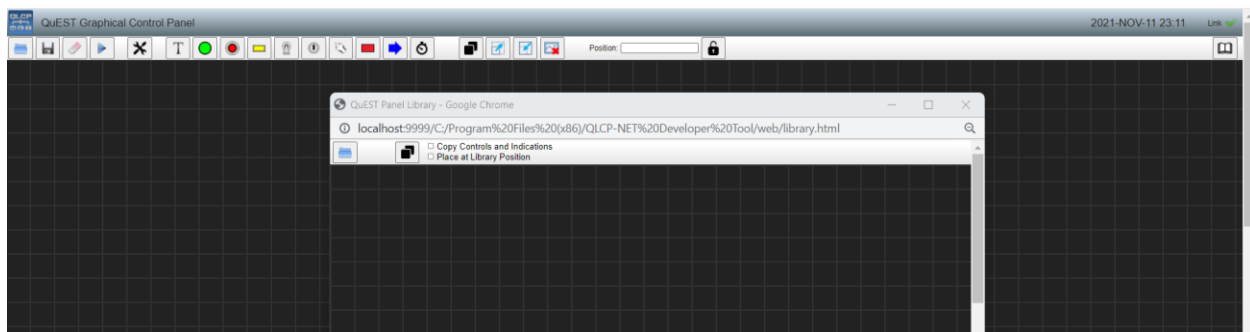


Note: The indication settings execute in order from top to bottom in the QLCP executive software. If a LED icon is configured to turn red when 1-IND is true AND to turn yellow when 1-IND is true, it will turn yellow when 1-IND is true.

This can be used to hide such items as Power Off warning text unless the Power Off bit is true. If the Power Off bit is indication #1 and the stage has a black background, configure the Power Off text indication settings as follows. Indication (black) 1-IND/False, Indication (transparent) 1-IND/True, Indication Flashing (red) 1-IND/True. The Power Off text will be black when False, thus transparent with the black background. When Indication 1 is true, the Power Off text will flash red.

## Library Feature

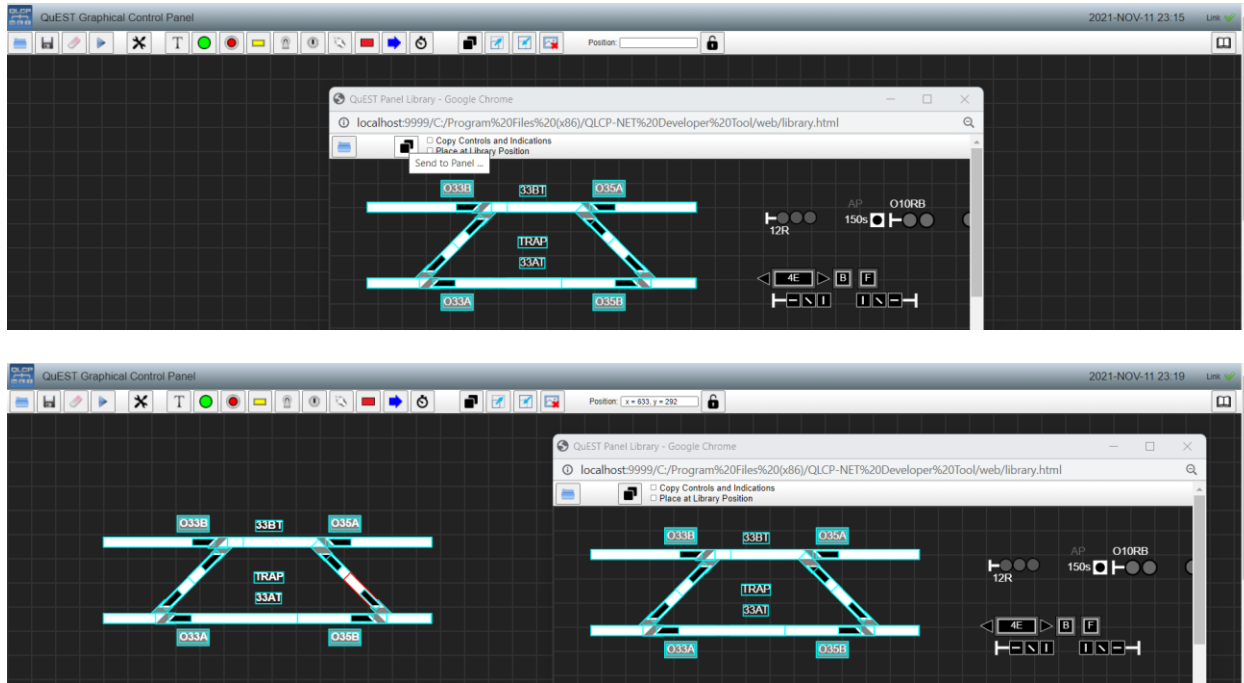
Click the “Open Library Panel” button to enter use the Library Feature.



Click the “Open Library” button to select the .cpf file to be used as the library file. This file can be any previous .cpf file used for a specific location or a file created over time containing custom drawn items.

**Note:** Edits cannot be made in panel files opened in the library tool window.

Select the item to be copied to the main stage, then press the “Copy to Panel ...” button. This copies the selected items and moves them to the main stage. The selected items will snap to the mouse and can be placed on the main stage by clicking the mouse again.



Copy Controls and Indications – Check this box to retain the control and indication data from the library. If the box is unchecked, the control and indication data will be deleted.

Place at Library Position – Check this box to place the selected items at the same X/Y coordinates as the items are placed in the library panel file.

## Tips

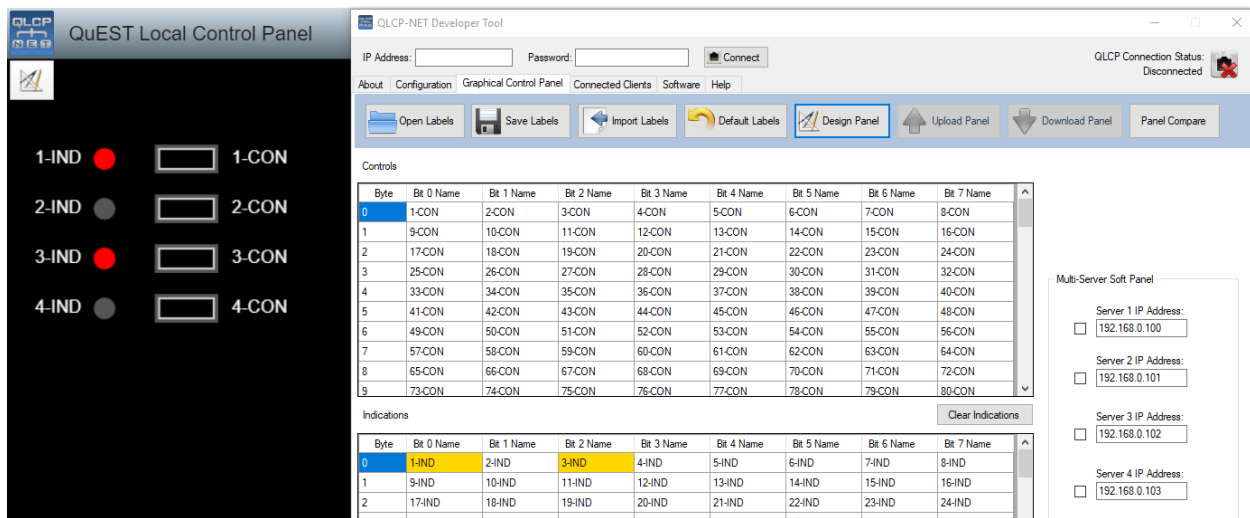
- Icons can be moved via mouse click and hold or the keyboard arrow keys when selected. If the properties menu is open, the arrow keys are disabled for icon movement. Shift + Arrow will move the icons 10 pixels per click versus one pixel.
- Arrow keys are useful when lining up several icons to be on the same plane.
- Once a softpanel design is completed, drop a quadrilateral, resize it large enough to cover all the icons, then configure the quadrilateral to have a default fill color of black. Finally put it to the BACK layer. This gives a complete black background to the display and creates good contrast on the other icons. If further edits need to be made just move the large quadrilateral (background) out of the way then move it back.

- Groups of icons can be selected by clicking and dragging the mouse, then releasing the mouse click. Now all of these icons are selected and can be moved together or all copied at once using the Duplicate button. (The icon highlighted in RED is the “active” icon and will display its properties when the properties menu is open.)
- Once groups of icons are selected, Control + Click can add or remove icons to the selected group.
- When a group of icons are selected, the “active” icon is outlined in red. This item’s X/Y coordinates and other properties will be displayed and can be changed.
- Delete unwanted icons by selecting them then pressing the delete key.
- When dropping a background image, size the background image first. Once the background image is sized, drop one of each of the icons that will be used on the background image and scale each of them appropriately. Then when another icon needs to be added, use the duplication button to duplicate the icon that is already scaled correctly for your background image.
- If custom icons are needed, contact QuEST Rail at [waysideproducts@questrail.com](mailto:waysideproducts@questrail.com).
- Control Z will undo the last change. Press Control Z multiple times to undo several previous changes to component drops, adds, deletions, or movements. Undo also works on changes made to changes made to entire grouped icons.
- Control Y or Control + Shift + Z will redo changes.

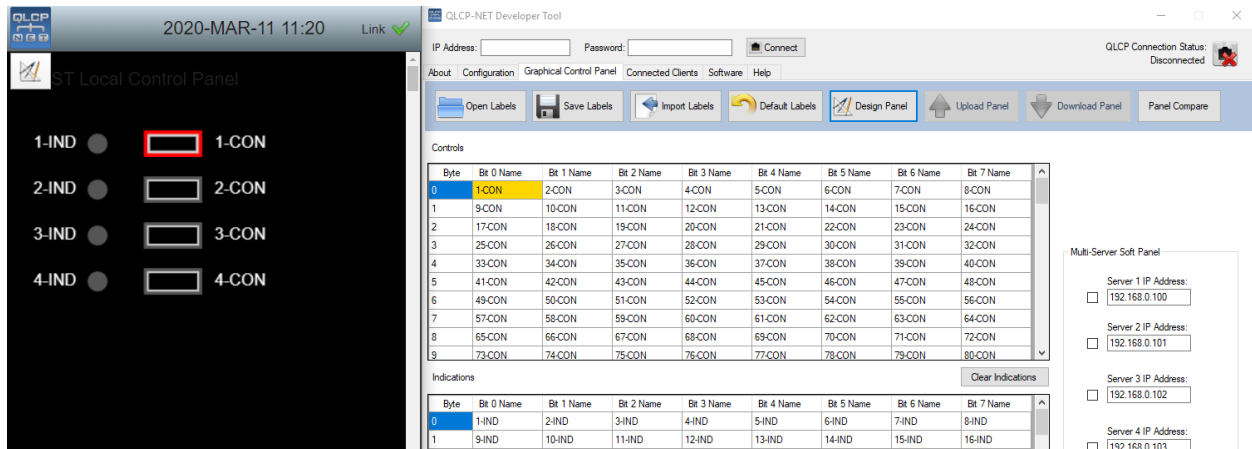
# 5 Test Panel Design

Once design is completed, the softpanel should be tested for proper operation. Press the RUN button to enter run mode. The softpanel will now appear and function, directly on a PC, as it will when accessed from a fully operational QLCP-NET.

Use the QLCP-NET Developer Tool screen to manipulate each indication to verify proper operation. To turn on indication 1, right click the 1-IND cell in the Indication array. When it turns yellow, the indication is on. Below, 1-IND and 2-IND are on.



Observe the Control array to verify proper operation of all softpanel controls. When the control turns yellow, the bit is true. Below, the icon configured to Control bit 1 has been pressed.



# 6 Other Displayed Information

When in run mode or when a softpanel is accessed from a QLCP-NET using a browser, in the lower right corner, the Panel CRC and Web GUI software version are displayed. The Web GUI Version displayed is the version loaded on the QLCP-NET or the version installed on the computer when in Run mode. The Panel CRC can be used for configuration management.

